

Silence · Montage · Musical Space



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Preface

Electronic and electroacoustic music composers have a unique way of organising sounds. Regardless of often very similar tools such as electronic devices, instruments, computer programs and production softwares, the musical result is remarkably diverse. This reveals that despite technical procedures, originality comes from different backgrounds and individual experiences. This paper aims to explain my personal compositional strategies and inspirations that I find inseparable and well influenced by growing up as a jazz and classical music student from a young age, as well as from the later discovered electronic and electroacoustic music realm. Quitting both Jazz Vocals studies at Lithuanian Academy of Music and Theatre and later Classical Music Composition at the Koninklijk Conservatorium Brussel wasn't caused by doubt on my path in music, however, getting familiar with composing with electronics has opened up a whole new set of possibilities and different angles of listening, that I might have been longing for in both classical and jazz music fields. I was particularly inspired by the possibility to compose with a multitude of layers and explore dimensionality in expansive ways. Also, it enlarged my view on musical gesturalities and tonal possibilities outside the twelve-tone equal temperament system and broadened my view on sound in relation to the space in which it is projected.

A wide diversity of music composing tools and techniques have been explored during these four years in Sonology. The first steps of trying to reflect on my works made throughout my studies were looking for their alliance in compositional solutions and choices of the material. The common aspects that accompany each of my works are coming from overlapping areas of influence which I will present in further paragraphs.

The **first chapter** explores the concept of silence in both musical and non-musical contexts. I briefly introduce the subject of the silences in speech and how our linguistic background might be influencing our perception of silences. Further, I present the Japanese concept of *ma* and discuss several sound artists and music movements that in one way or another have been influenced by the idea of silence. Lastly, I share insights on John Cage's pieces, as well as influences on his thinking towards silence and providing some thoughts on silence as the sonic condition in field recordings and soundscape art fields.

In the **second chapter**, I focus on the topic of montage. Physical gestures, evidently, take a significant place in performative music and it was taking a big role at the beginning of my musical journey as a piano player and jazz vocalist. The need for musical gesturalities hasn't changed after I became familiar with electronic music composing and performing techniques. Though, it offered a variety of ways to achieve it, even without the intervention of the human body. The techniques of montage were often used by pioneers of *musique concrète* and electronic music and became one of my main tools to achieve gestural patterns. This chapter provides some historical background of the Soviet film school and montage theory, a presentation of Charles Ives (and his works) as one of the pioneers in using collage as a composing principle. The last subchapter introduces early practices of montaging with electromagnetic tape by explaining Bernard Parmegiani's implementations of micro-montage in his piece *Incidences / résonances*.

The **third chapter** discusses the musical space. The way in which I approach musical arrangement is also related to how musical elements are laid out in an imaginary space, therefore I find my musical terminology (as many other composers) based on mostly spatial terms. In this chapter I discuss the use of metaphors in the language describing certain musical aspects, I briefly overview some spatial music examples realised through multiple loudspeaker systems and lastly, I deliver some thoughts on sound in relation to space, followed by outlining sonic works by Bernhard Leitner.

Chapter four provides a short analysis of my recent works, composed during the study years (2017–2021) at the Institute of Sonology, thus connecting the subjects presented in the previous chapters.

Chapter 1

Silence

I will be discussing two types of silence in this chapter. The first one is intended, composed, and is a part of the music piece. So-called musical silence is comparable with silence in speech and is widely used as a compositional tool in different cultures. The second one, which is outside the musical realm, silence as a sonic condition that engages our listening rather in sound than in music. Even though I will be covering a variety of different music movements that have been influenced by the idea of silence, there is no intention, by no means, of dividing music into specific categories or putting them under certain names. Rather, the idea is to disclose a diversity of silent-music phenomena happening in different times and places.

1.1. Silence in Speech

In classical-music terms, silence comes in the form of “rests” that are equally important as notes in order to create a musical phrasing. Already in the 18th century, music theorists codified rests and silences according to the rules of rhetoric and encouraged composers to take inspiration from oration and speech. Jean-Jacques Rousseau in his *A complete Dictionary of Music* drew the analogy with an actor onstage who “agitated, transported with a passion which does not suffer him to go through his speech, is interrupted, breaks off, makes a stop...”¹

Principles of musical phrasing, including silences in between, are inevitably inherited from speech where pauses occur for different reasons such as breathing, word-searching, thinking or giving a turn for the other speaker. The duration of pauses affects the processing of a speech, sometimes giving it a different meaning. Also, depending on the place and duration of silence in speech, they refer to different types of pauses, gaps and lapses.² Unlike in speech, in music, we don’t have different terms for silences, though they also carry different references. Just as in speech, in music, silence might be used for a transition of thought, turn change, tension and hesitation purposes, as well as silence, can bring similar feelings as making us uncomfortable or more attentive both while listening to a piece of music or a person giving a speech.

Tyler Kendall, a scientist of linguistics, was examining the impact of different factors on pause duration and discovered that region, gender, and ethnicity have significant influences. Even though the actual differences between the groups are relatively small, it’s amusing to think that how we perceive silence depends on almost all of the factors in our lives. Kendall concludes:

*“We have established, I think, that pause duration is not only an outcome of processing activity and so forth, but that it does in fact appear to be impacted socially by such categories as regional affiliation, ethnicity, and gender, even though the effects of these social categories are far from straightforward.”*³

¹ Rousseau, J.J. (1779), *A complete Dictionary of Music*, p.289.

² Lundholm Fors, K. (2015). “Production and Perception of Pauses in Speech”, doctoral dissertation in linguistics, University of Gothenburg.

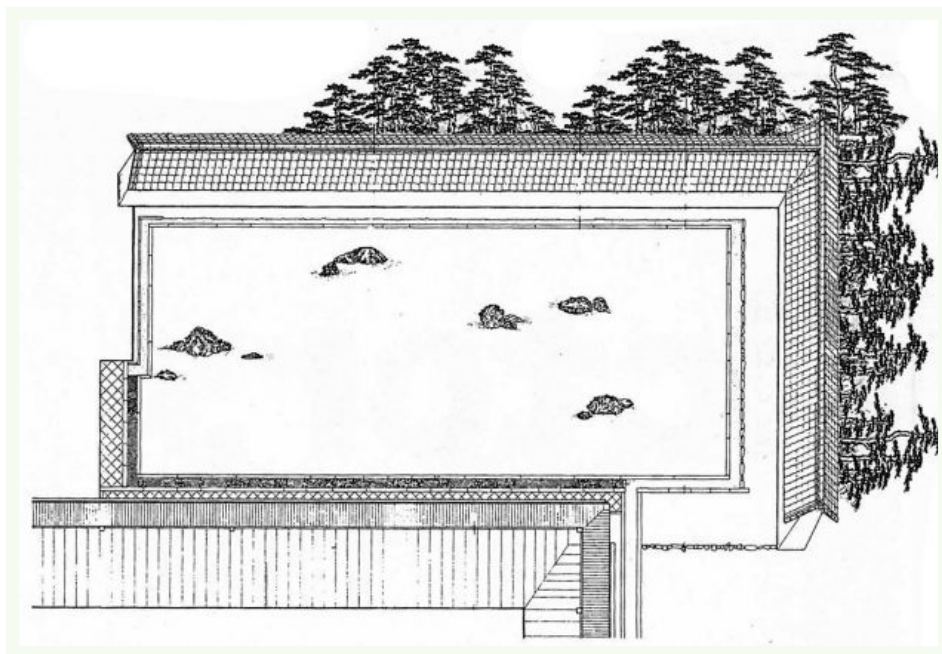
³ Kendall, T. (2009), “Speech Rate, Pause, and Linguistic Variation: An Examination Through the Sociolinguistic Archive and Analysis Project”, PhD thesis, Duke University, p.118.

We could most probably apply this to the musical realm and make an assumption that how composers compose and listeners perceive silence is also dependent on a person's individual, social, cultural and linguistic background.

1.2. *Ma* and *Onkyō*: (Almost) No Sound

In Japanese, *ma*, the word for space suggests interval. It can be defined as the natural distance, the inevitable void, or fundamental time and space in between two or more phenomena. This concept can be applied to almost every niche of life that implies to both time and space: architecture, garden design (*Ryoanji*), flower arrangements (*Ikebana*), music, poetry and in every-day situations in general.⁴ A daily-life example could be, that when Japanese are taught to bow at an early age, they are trained to make a deliberate pause at the end of the bow before they come back up — as to make sure there is enough *ma* in their bow for it to have meaning. In its architectural context, *ma* refers to the dimension of space between the structural posts of an interior. The traditional Japanese teahouse is the finest example of *ma* architectural design. It most usually doesn't contain any decorative elements or ornaments. The emptiness of the space suggests the appreciation of ephemeral experiences that happens in between the walls – the momentary gatherings between people and objects.

Also, a metaphor of *ma* can project a very subjective feeling about the place or situation, but it also may be an objective expression. As for example, *Ma ga war* (literally: the placing is bad)⁵ or its opposite, *Ma ga umai* is often used as aesthetic judgment of Japanese calligraphy, painting, and other arts. Anyone practicing calligraphy soon realises that proficiency lies not merely in mastering the form of the characters, but also in the relationship of the form to the surrounding non-form. This balance of form and space will always be taken into account in the final artistic judgment.⁶



Bird's-eye view of the rock at Ryoanji (From Izozaki Arata, "Ma: Space/Time" in Japan, Cooper-Hewitt Museum, New York 1976)

⁴ *Kyoto journal* (1998), re-release in 2020, "Ma: a measure of infinity", p.5.

⁵ *Ibid.*, p.16.

⁶ Nitschke, G. (1976), Essay based on a talk given at Cornell University at the Topical Seminar on Time and Space in Japanese Culture.

In music, *ma* is rather referring to an active silence than to a written rest in a musical score. The most well-known and significant Japanese composer of the 20th century is Toru Takemitsu. Being much influenced by Western orchestral music in his early years, Takemitsu gradually returned to his roots for a while, in his experimentations with traditional Japanese instruments around 1970. He credited this return to John Cage, who himself was highly influenced by Japanese culture, stating that for a long period in his own development, he was avoiding having “Japanese” qualities in his music, while other Western composers, including Cage, were implementing them in their works. Recognising it, Takemitsu reevaluated his own traditions and for this reason, his latest musical works were oriented to Japanese culture.⁷ The particular quality Takemitsu was referring to is the idea of *ma*:

*“Just one sound can be complete in itself, for its complexity lies in the formulation of ma, an unquantifiable metaphysical space (duration) of dynamically tensed absence of sound. For example, in the performance of nō, the ma of sound and silence does not have an organic relation for the purpose of artistic expression. Rather, these two elements contrast sharply with one another in an immaterial balance.”*⁸

As Takemitsu began to pay close attention to sound’s complexity itself rather than an organisation of a series of notes, his work was criticised as too static and monotonous. “Pre-music” (*ongaku izen*) became a term to describe this non-developmental music. One of Takemitsu’s work for solo piano, which was first premiered in 1950, once lost, and later recomposed from memory with the new title of *Litany*, was critically disclaimed by some authoritative critics of that time as lacking dynamics, contrasts, and variations on a theme. Though despite the disappointment it brought the composer, it pointed the essence of Takemitsu’s aesthetics.⁹ When in later years the composer focused on works for traditional Japanese instruments, he found immense complexity and completeness in a single breath through the shakuhachi or a gentle hit on the biwa instruments. Takemitsu suggests that one sound can be complete in itself and its complexity and completeness lies in a formulation of *ma*, and to be able to hear it, a passage from silence to sound, and from sound to silence is vital.

In the late 1990s, just after Takemitsu’s death, non-structural and full-of-silence music aesthetics were taken up by Japanese underground improvisers. This performance approach is based on attention to quiet sound textures made with electronic devices, long gaps of silence, and particularly a quiet performing environment. For an average music listener, their performances were lacking perceivable sonic units to call it “music”, therefore these performances were defined as “sound” or *onkyō*. Lorraine Plourde, the researcher in ethnomusicology who has conducted ethnographic research on experimental music and listening in Tokyo with the focus on the *onkyō* improvisation movement has made an observation that contrary to Cage-like silence (which I will be discussing later), when all accidental noises from the outside and the audience are accepted and even welcomed, *onkyō* improvisers seek for an absolute silence and expect a sheer silence from their listeners in order to engage an immersive listening experience.

⁷ Takemitsu, T. (1989), “Contemporary Music in Japan”, *Perspectives of New Music*, vol. 27, no.2, p.3.

⁸ Takemitsu, T. (1994), “One sound”, trans. by Hugh de Ferranti, *Contemporary music reviews*, vol.8/2: p.3–4.

⁹ Shūhei, H. (2013), “Working Words: New Approaches to Japanese Studies”, *Review of Japanese Culture and Society* Vol. 25, University of Hawai’i Press, p.12.

1.3. Reductionists

Meanwhile, parallel in time with *onkyō*, something similar was happening in Western sound culture. The so-called *reductionists*, experimental improvisers in Berlin, London, and Vienna, whose music centres around low sound levels and use of silence, emerged. Borrowed from the science field, the term reductionism means a practice that is analysing a complex phenomenon by reducing it into parts that are on a more simple and fundamental level.¹⁰ In other words, higher level phenomena can be understood as some combination of lower-level phenomena. For example, in biology in order to understand the cell scientists reduce it into a collection of physiochemical elements like atoms and molecules.¹¹ *Reductionism* in painting emerged in the 19th century when the first artists moved from figurative painting to abstraction and completely flourished in the mid 20th century among the New York School of painters. These artists were stylistically diverse, though they shared the same interest to break the image down into shapes, colours, light, and space, and explore relationships between them. One of the great examples of reductionism in art is Mark Rothko with his well-known colour-field paintings. He gradually became one of the most recognisable figures of the New York School art scene as he developed an abstract painting language reducing image to colour.¹²



Mark Rothko, *No. 37/No. 19*
(*Slate Blue and Brown on Plum*), 1958, oil on canvas

A similar approach in music, breaking down the composition in order to explore singular sounds, was used by music composers of that time, especially the ones who later would be associated with the *Minimalism* and *Process Music* movements (La Monte Young, Pauline Oliveros, Steve Reich, etc.). Accordingly, *Reductionism* and other later movements that use silence as a tool (I will be discussing them in the next subchapter), appeared under the influence of the past events, though I wouldn't suggest tucking everything under a *Minimalism* roof. *Minimalism* as an adjective for music is being applied on such a wide variety of different kinds of music that the term has lost its significant part of helpfulness it might once have had. Each of those styles, genres, have unique musical languages, approaches, and different place-and-time contexts.

¹⁰ Lexico Dictionaries | English. (2020). Reductionism | Definition of Reductionism by Oxford Dictionary.

¹¹ Bechtel, W. and Bollhagen, A. (2019), "Philosophy of Cell Biology" (Stanford Encyclopedia of Philosophy). [online]

¹² Kendel, Erik.K. (2016), *Reductionism in Art and Brain Science: Bridging the Two Cultures*, Columbia University Press, p.160.

Axel Dörner is a Berlin based musician who, according to the *Meakusma* festival programme of 2017, is one of the “most unique voices in free improvisation [who] developed a completely different language for the trumpet in the late 1990s.” Dörner is one of the leading names of *Reductionism* and has a very specific, mostly self-invented language for the trumpet. His approach for making sound is manipulating air and using it as a part of his compositions. Dörner’s focus lies on improvisation, breathing through the trumpet and its micro sounds, sometimes followed by electronic interferences and a good amount of silence. The *Reductionism* movement is often confused with *lowercase*, and although there is a reason for that, the musical output of these two movements might be very similar. However, *lowercase*, like *microsound* approaches are based on processes, while reductionists are considered as free improvisers, most often with acoustic instruments.

1.4. *lowercase* and *Microsound*

Pasadena sound artist Steve Roden, the composer who accidentally gave a name to the *lowercase* movement after being interviewed for the first time in 1997 for *The Wire* magazine, mentioned that his artistic tendencies were “lowercase”. *Lowercase* describes music that:

*“bears a certain sense of quiet and humility; it does not demand attention, it must be discovered. [The] work might imply one thing on the surface but contain other things beneath... it’s the opposite of capital letters—loud things which draw attention to themselves.”*¹³

His sound-piece *forms of paper*, originally created for an art exhibition at the Los Angeles Public Library and created out of sounds of book pages being scrapped and rubbed, was released in 2001 and became one of the most known examples of the movement. Eventually, *lowercase* aesthetics began to infiltrate and overlap with a number of different music scenes.

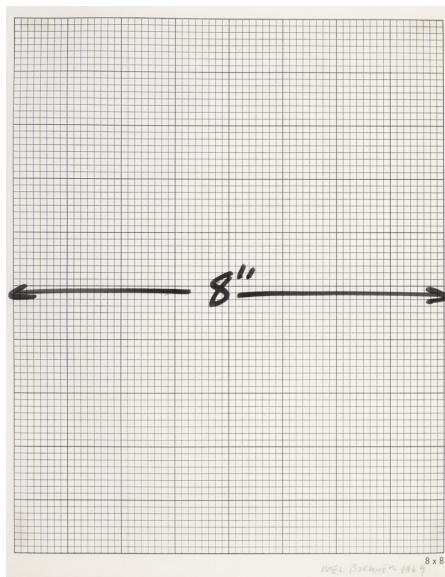
Similar approaches are shared by *microsound* music which “describes recent electronic music that treats sound as collections of infinitesimally small particles”.¹⁴ Iannis Xenakis is considered as a pioneer of this genre as his piece *Analogique B* (1959), written for orchestra and hundreds of splices of small fragments of magnetic tape, is known as the first piece written using a method of granulation. *Microsound* practitioner Curtis Roads frequently relies on illustrations contrasting granular synthesis with subatomic physics. According to Albert Einstein’s and Dennis Gabor’s wave hypotheses, sound, just as light, can behave as a wave but also as a particle. In granular synthesis, the sound is broken into such a tiny grains, (between one-thousand and one-tenth of a second) that they are hardly perceivable as separate particles. However, when combined they can develop unforeseen textures and phrases. Even though *microsound* is not a movement about low-amplitude levels, in practice, granulation is often used in order to achieve continuously granulating subtle micro textures. *Microsound* musician Miki Yui describes her music as “small sounds” or “quiet music”. While talking about her album *Lupe Luep Peul Epul* (2001), she mentions: “please play at transparent levels in different atmospheres.” Giving it the required volume, so that the recording is just audible, we experience external noises coming in from the environment and infiltrate in the music. Hence, like *lowercase*, some of the *microsound* music can be intended to be played back quietly too.

¹³ *The Wire* magazine (1997) no.11, p.28.

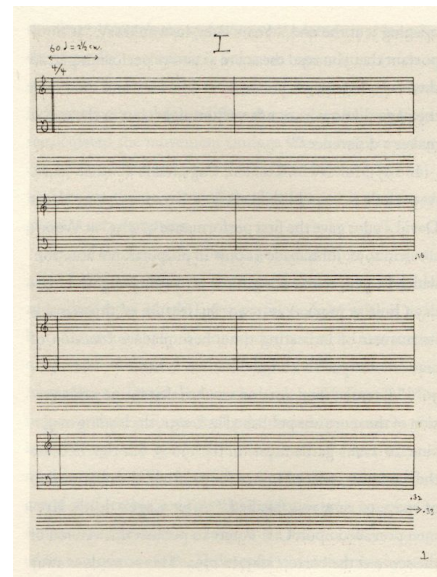
¹⁴ Demers, J. (2010), *Listening through the Noise: The Aesthetics of Experimental Electronic Music*, Oxford University Press, p.71.

1.5. John Cage and Conceptual Silence

There is no doubt that the field of silence is dominated by John Cage's work and thoughts and there is no way not to mention his piece 4'33" (1952) in this chapter. Four minutes, thirty-three seconds of silence in a concert hall was John Cage's invitation for the audience to start hearing things when there is nothing to hear. With this piece, the sound world has entered the conceptual art realm as it has an interest of dematerialisation in objecthood and is questioning authorship. Salomé Voegelin in her book *Listening to Noise and Silence: Towards a Philosophy of Sound Art* suggests to compare Cage's 4'33" and conceptual artist Mel Bochner's piece 8" *Measurement* (1969): an arrow drawn with black ink on graph paper, defining its length of 8 inches:



Mel Bochner 8" *Measurement*, (1969)



The score of 4'33" (1952) by John Cage

*"Both works depend on the discursive context of their respective practices to frame this emptiness, to render it visible and audible. This conceptual dimension does not free the page but makes its limits available for contemplation. Equally it does not free silence to participate in the musical work but instead makes audible the parameters of musical scoring and counting"*¹⁵

Among other boldly experimenting artists at that time, John Cage's pieces and particularly his 4'33" became a kind of icon of post-war Western culture. It was widely analysed, ridiculed, and gained very diverse and controversial reactions. And the reasons, of course, aren't that surprising – being confronted with silence in a concert-hall setting filled with expectations for music is inescapably a situation that brings a whole bunch of different emotions and concerns.

The genesis of silence in Cage's works was much influenced by both Southern and Eastern Asian cultures. In his *An Autobiographical Statement*, Cage reveals that he was influenced by his friend, Indian musician Gita Sarabhai. He wasn't satisfied with the academic idea that the purpose of music is communication and it seems that the idea that Sarabhai has shared with him that "the purpose of music is to sober and quiet the mind, thus making it susceptible to divine influences" did change

¹⁵ Voegelin, S. (2010), *Listening to Noise and Silence: Towards a Philosophy of Sound Art*, Bloomsbury Academic, p.81.

Cage's way of thinking of music.¹⁶ Spirituality became an important aspect to his music. He believed that "an artist has an ethical responsibility to society to keep alive to the contemporary spiritual needs".¹⁷ As in the past, it was faith in God that would give people meaning and would bring them together, later this belief was transferred on heroes, then on items and thus people became disunited. He adds that we are in desperate need of a spiritual place or the idea that would work as an escape from this world and would bring people tranquility. One of them would be any integrating occupation-music, according to Cage.¹⁸ Taking this into account, we can assume that Cage's thinking towards silence and emptiness was musical but also spiritual. Another strong influence was made by Daisetsu Teitaro Suzuki, who was a professor of Buddhist Philosophy at Columbia University (New York) in the 1950s, where Cage was studying Philosophy and Classical Indian Music around that time. Suzuki's classes of Zen Buddhism directed Cage's mind towards comprehension and appreciation of daily chaos and noise instead of trying to control and bring everything to order. And *4'33"* was exactly about that, "it was a statement of the essence".¹⁹ As Cage puts it himself in an interview three years before his death:

*"I use it [4'33"] constantly in my life experience. No day goes by without my making use of that piece in my life and in my work. I listen to it every day... I don't sit down to do it; I turn my attention toward it. I realize that it's going on continuously."*²⁰

John Cage's book *Silence* was described as "the most influential conduit of Oriental thought and religious ideas into the artistic vanguard – not just in music but in dance, art, and poetry as well."²¹ This collection of essays isn't exclusively about the sonic or musical silence, instead, it is a quite experimentally written work dealing with questions of the nature of music, the relationship between sound and music, and attempts to describe his own approaches to his creative works. Though, the concept of silence was certainly a major concern of his.

1.6. Silence of the Soundscape

By experiencing different sonic environments in our lives, eventually, we learn that there is no such thing as absolute sonic silence. When an external environment is completely silent then we start to hear ourselves – breathing, heart beating, and our bodies overall. Therefore, silence isn't an absence of sound, however, the start of hearing and listening. In a quiet environment our perception enhances, we become particularly attentive to microscopic sounds that aren't necessarily connected with visual sources, thus we are much more focused on the sounds themselves.

In a paper about sound-walking, sound ecologist and composer Hildegard Westerkamp discusses how everyday city noise can be exhausting to our ears and therefore our brain creates an illusionary shield, a defence mechanism that blocks our focus on sounding surroundings. She makes an assumption that the sharpness of our hearing has gradually decreased, otherwise, how would we stand this restless city buzz?²² Thus, if we don't make a decision to listen carefully the most delicate sounds will pass unnoticed and disappear completely. Further, Westerkamp invites us to have a sound walk with step-by-step instructions to re-activate our hearing. She suggests starting with listening to

¹⁶ Cage, J. (1989), "An Autobiographical Statement", Inamori Foundation

¹⁷ Cage, J. (1948), "A Composer's Confession", Vassar College [online]

¹⁸ Ibid.

¹⁹ Larson, K. (2013), *Where the Heart Beats: John Cage, Zen Buddhism, and the Inner Life of Artists*, Penguin press, p.22.

²⁰ Duckworth, W., *An Interview with Cage*, Bucknell University Press, p. 21–22.

²¹ Cage, J. (1961), *Silence: Lectures and Writings*, Hanover, University Press of New England, foreword.

²² Westercamp, H. (1974), "Soundwalking" from "Sound and environment in artistic practise", originally published in *Sound Heritage*, Volume III Number 4, p.18.

our body while moving (if the environment allows you to hear it), later to move our focus from our own to sounds nearby and make a list of them: detect continuous sounds, rhythms, highest and lowest pitches, etc. Furthermore, she invites to try to listen even beyond that into the distance:

“What is the quest sound?
What else do you hear?
What else?
What else?
What else?”²³

Westerkamp suggests that each of the sounds, even the most delicate ones are a part of the environmental composition – it is interesting to try to hear them individually and as a whole. As attentive listening becomes our routine, being aware of an endlessly sounding environment might become fatiguing thus making us picky about our surroundings, motivating us to work towards a more pleasant and quiet one.²⁴

Quiet surroundings are well explored and much appreciated among certain groups of field recordists as they reveal the most hidden, unheard sounds. Just as the recording artists, Westerkamp herself was inspired by silence. Her two-channel audio piece *Cricket Voice* (1987) was recorded in the Mexican desert region called the “Zone of Silence”. Describing this piece, she mentioned that the stillness of the place sparked the idea for the piece, as well as allowed for a high acoustic clarity of the cricket singing in the night, that became a perfect sound object to modulate with a tape recorder. Further, she adds that “the quiet of the desert also encouraged sound-making. The percussive sounds in *Cricket Voice* were created by ‘playing’ on desert plants: on the spikes of various cacti, on dried-up roots and palm leaves, and by exploring the resonances in the ruins of an old water reservoir.”²⁵

The field recordist, sound collector, and artist from Lithuania Audrius Šimkūnas, aka SALA, (the isle) runs a project already for three decades with works that in one way or another rely on quiet (or inaudible) sounds or silent places. Although his recording fields are wide and he is particularly interested in public spaces, he mentioned himself that even in those public spaces he would search for unheard, subtle sounds. To capture them Šimkūnas uses specific tools such as hydrophones, seismic sensors, electromagnetic field antennas, and contact microphones. Further, describing his piece *Sensors & Measurements*, he mentions that the sound material is retrieved from air pollution, radiation, electromagnetic radiance, vibration meters, and detectors, converting real-time information into an audible spectrum.²⁶ Another, 37 minute-long piece of Šimkūnas named *May I ask you all for silence?*, is a collage of recordings made in the countryside of Lithuania during the winter. The silence being particularly stiff and static in a freezing countryside, the freeze amplifies all creaks, trickles and ripples to such an extent that for me, as a resident of a city, which is sunken in multiple sonic layers, it’s hard to even remember that the field can be that explicit. As Salome Voegelin describes the experience of hearing microscopic sounds in snow: “This is not really hearing but sensing sound. Sounds are tangible in this dense quietness. I am feeling through my body whole clumps of sensate material. The quietness enhances my perception; I take notice of every whisper, hum, and buzz. I feel them as phenomena filling the room and me, defining our contours as one without knowing what we are.”²⁷

²³ Ibid., p.20.

²⁴ Ibid., p.23.

²⁵ Programme notes of “Celebrating Canadian Composers, Hildegard Westerkamp’s Birthday”, Canadian Music Centre (April 6, 2018) p.7.

²⁶ Programme notes of the radio show on LMTKS radio, premiere of the piece *Sensors & Measurements* by Audrius Šimkūnas (December 14, 2020).

²⁷ Voegelin, S. (2010), *Listening to Noise and Silence: Towards a Philosophy of Sound Art*, Bloomsbury Academic, p.85.

Chapter 2

Montage

Montage (borrowed from Old French, the verb *monter* “to go up, mount”) deals with assemblage of single elements in order to achieve the whole. Gilles Deleuze in his writings about cinema mentioned the significance of montage, as the whole, the idea, only can occur by creating relationships in-between individual shots.²⁸ In the domain of music composition, the meaning of an individual sound can’t be discovered exclusively in the sound itself, but instead it inhabits in its relationships between other sounds and no-sound.

2.1. The Soviet School of Montage

Among American, French, and German film editing schools that emerged in the early 20th century, the Soviet School of film theorists had a major contribution in formalising the ideas of montage. Lev Kuleshov’s work is viewed as the ground from which all montage theory has been obtained. While practising the montage technique he understood the power of it and its ability to construct new images and meanings. As a teacher in the National Soviet Cinema School, Kuleshov was telling the students that the soul of cinema is in the edit, it’s in the way two shots interact. In his book *Kuleshov on Film: Writings by Lev Kuleshov* he was arguing that acting itself can be completely achieved by editing and by experimenting a lot with changing the order of independent shots. He noticed that it completely rotates the viewer’s interpretation of them. To demonstrate that he put together an editing exercise called *Kuleshov’s effect* where he alternated the same shot of the actor looking into a camera with a neutral expression with other independent shots of a plate of soup, a girl in the coffin, and a woman. Kuleshov was stunned by the discovery that the viewer starts to make connections between completely independent shots and assigns new emotions to an actor’s face. Respectively, these corresponding shots conveyed hunger, sadness, and lust. Therefore, Kuleshov argues that more meaning is created by the interaction between two shots than by any shot in isolation. Also, he was exploring the ability to build new, in reality non-existent matter out of separate, unlinked images. For example he would create a new human by making shots of different people’s lips, eyes, legs (and so on) and playing them in a certain sequence thus creating a totally new person.²⁹ He was also applying the same approach for creating non-existent places.

*“It became apparent that through montage it was possible to create a new earthly terrain that did not exist anywhere, for these people did not walk there in reality, and in reality there was no pole there. But from the film it appeared that these people walked across a meadow and the pole appeared before their very eyes.”*³⁰

Another important figure in developing montage ideas in film is Sergei Eisenstein. Truly believing montage as a revolutionary technique he eventually theorised a wide field of film practices including montage. As Eisenstein describes in his book *Film Form*, he identified and formalised five methods of montage: metric montage - when the shots are joined together corresponding to their lengths, often depending on a measure of music and finally realised by repeating those measures. Eisenstein also mentions that in the rhythmical montage, the length doesn’t correspond to the numerically determined length of the piece as indicated by a metric formula, instead, here the length of the shots

²⁸ Deleuze, G. (1983), *Cinema 1: Movement-Image*, Les Éditions de Minuit, p.29.

²⁹ Kuleshov, L.V., Ronald, L. (1974), *Kuleshov on Film: Writings by Lev Kuleshov*, University of California Press, p.47.

³⁰ Ibid., p.32.

derives from the specifics of the pieces themselves that are also dependent on their planned sequence order. Tonal montage is a practice of cutting between shots according to the “tone” of the scene, this way highlighting the emotional theme of the shots themselves, and “overtonal” is a more developed form of tonal montage, usually combined of several above mentioned cutting types, incorporating indirect themes in the scenes by cutting according to “tones” and “overtones” of the scene. And the last one described by Eisenstein is intellectual montage, a practice of intercutting shots in the way that they would produce meaning through the metaphors.³¹

It's evident that the order of these montage types has a growth in complexity that derives from the complex relationships between the images. A sound element, however, doesn't carry such a concrete meaning as the visual image (unless the sound is a human's voice pronouncing concrete words). Sonic montage is rather a composing tool to create abstract spaces and images.

2.2. Conflicting Layers in Charles Ives's Works

The origins of montage in music (also called music collage) can be tracked back to 17th century, however, one of the first composers whose composing process is considered to be fundamentally a technique of collage is early 20th century American composer Charles Ives. As J. Peter Burkholder discusses in his book *All Made of Tunes: Charles Ives and the Uses of Musical Borrowing*, Ives was often creating his collages out of already existing material that he would take from his own or someone else's compositions and muddle it by layering with supplementary fragments. In his works “[...] tune fragments are overlaid atop a musical structure that is already coherent without them”.³² According to Burkholder, Ives's multilayered collage works intends to recall the appearance of memories or dreams, that usually appear quite vivid but also obscure, though in non-linear relationships with each other.³³ Perhaps one of his most recognised compositions is *Central Park In The Dark* (1906). The piece was inspired by the noisy and multivalent sonic environment of Central Park in New York. It is written by juxtaposing contrasting parts of the orchestras that are spatially separated. In the piece's program notes Ives specifies the roles of each instrument as the piece aims to picture the sounds of nature that someone would hear by sitting in the same park on a hot summer night, thirty years ago, before technology that makes noise was invented.³⁴ By layering contrasting parts of instrumentation, Ives achieves spatial polytonal surroundings that indeed somehow resemble the atmosphere of the night in the park.

Using collage as a composing tool, the spatial aspect in composition inevitably becomes a significant part. Playing several distinct layers or fragments at the same time that are coming from different sources requires to specify their place on the stage, distances between them, as well as their performing dynamics. Clearly, for Ives, creating spatial relationships between different sound sources was a particular concern. Detailed descriptions of the spatial aspects can be found in most of his musical scores. For instance, as Broadhead writes in the notes for the score of Ives' Fourth Symphony, the first and fourth movements require a distant choir which has to be placed preferably above the orchestra, the solo piano has to be in front of the conductor and separated from the orchestra piano by a significant distance. Ives also was paying attention to the volumes. According to Broadhead, he was aware that if the trumpet plays *f* from far away, the listener won't be perceiving the loudness, however, the quality of the sound makes it clear that the trumpet plays *f*. Thus, Ives was rather interested in achieving *volume in a distance* than in silencing particular instruments by

³¹ Eisenstein, S. (1969), *Film form: Essays on Film Theory*, Mariner Books p.72-83.

³² Burkholder, J.P. (1995), *All Made of Tunes: Charles Ives and the Uses of Musical Borrowing*, New Haven: Yale University Press, p.370.

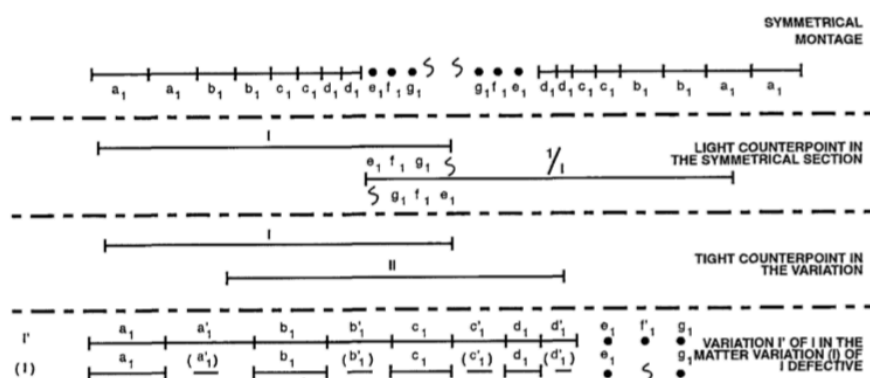
³³ Ibid., p.410–411.

³⁴ Ives, Ch. (1978), *Central Park in the Dark*, ed. John Kirkpatrick, Mobart Music Publications.

placing them further from the audience.³⁵ In his piece *The Unanswered Question*, as he himself writes in the text provided in the score, strings play very quietly without any changes in tempo “The Silences of the Druids – Who Know, See and Hear Nothing” and the trumpet invoices “The Perennial Question of existence”, stating it with the same phrase every time, “The invisible Answer” phrase played by flutes gradually appear faster and louder. Hence, there is again a collage of several layers of different groups of instruments (strings, woodwinds, trumpet) that perform in individual tempos at the same time. Also, in the score’s foreword, he states that the string quartet has to be placed off stage, if possible.³⁶ By using these methods, Ives was able to achieve multidimensional atmospheres that imitate well the way humans actually perceive surroundings of the real world, memories and thoughts. I find his collage approaches and pieces written in the first decade of the 20th century ahead of its time, that were unfortunately not performed until decades later (*The Unanswered Question* was first performed in 1946).

2.3 *Musique concrète* and Montage with the Tape Recorder

Certainly, the golden era of montage in music started with the first piece of *musique concrète* composed by Pierre Schaeffer. *Étude aux chemins de fer* was made by recording, manipulating and assembling a variety of sounds produced by trains. Working in the *Radiodiffusion Française* studios in 1948, Schaeffer began journaling his journey of composing from sound objects such as coconut shells, organ pipes, alarm clocks, trains, metal strips and so on. In his writings, published a few years later as *A la recherche d’une musique concrète*, Schaeffer shares his attempts to make those sound objects musical. He was concerned with a sound object being not musical as long as it carries a certain meaning and it predominates. As for example the words of a language won’t be musical as long as the main focus is on the meaning of the words. He suggests two steps in order to isolate that meaning from the sound phenomenon: “*Distinguishing* an element (hearing it in itself, for its texture, matter, colour). *Repeating* it. Repeat the same sound fragment twice: there is no longer event, but music.”³⁷ As to compose *concrete music* that is created out of pre-existing elements, recorded from any sound source, Schaeffer used a montage technique which, when applied directly by glueing tape



Serial structures of the *Étude aux chemins de fer* (Schaeffer, P., *In Search of a Concrete Music*, p.27)

bits one with another, gradually gives the piece a form.

³⁵ Broadhead, T.M. (2011), *Charles E. Ives Symphony No.4*, Associated Music Publishers, p.6–35.

³⁶ Ives, Ch. (1953), *The Unanswered Question*, Southern Music Publishing Co. Inc., p.2.

³⁷ Schaeffer, P. (2012), *In Search of a Concrete Music*, University of California Press, p.13.

Thus Schaeffer's and his fellow music companions' (Pierre Henry, Beatriz Ferreyra, Luc Ferrari and so on) experiments inverted thinking of the compositional process in a way that composers would no longer be restrained to written scores as their music could exist solely as recordings, without musicians actually performing them.

Intercutting distinct sound objects became a way to achieve new encoded sound gestures that would't be possible to realise in real world. In the same book, Schaeffer mentions that by removing the attack of the sound, the perception of it changes completely. He notes:

*"By having one of the bells hit I got the sound after the attack. Without its percussion the bell becomes an oboe sound. I prick up my ears. Has a breach appeared in the enemy ranks? Has the advantage changed sides?"*³⁸

According to Simon Emmerson, Pierre Schaeffer and other composers from the *Groupe de Recherches Musicales* (GRM) in Paris in the period around the late 1950s, have been mostly using concrete sounds as the materials for composing pieces. The expanding sophistication of the possibilities of montage made it capable of a highly developed sound world to emerge, "in which extended and complex sound-objects, free of associations, could be created."³⁹ Another group member of GRM, working at Pierre Schaeffer's studio was Bernard Parmegiani. During 1974–5 he wrote *De Natura Sonorum*, which has ten movements divided in two series. Each movement is focusing on a specific aspect of the sound or a principle of montage. The attempt of these pieces was to juxtapose natural (concrete) and artificial (electronic) sounds as a result of carefully handcrafted montage. As Parmegiani was saying in an interview for *The Wire* magazine: "[...] in *De Natura Sonorum* I set myself many more constraints: I placed the sounds as you do letters, one after the other, so as to create forms and sequences [...]"⁴⁰

In one of the movements, called *Incidences / résonances*, Parmegiani uses recorded sound-objects from the real world (glasses, percussive triangle, metal basin, and metal spirals) and intercuts them with artificial sounds in a variety of ways, as for example, he does the cut just right after the attack of the hit glass and glues it with artificially created resonances made off sine waves corresponding to the frequencies spectrum of the attack. In the analysis of the *De Natura Sonorum*, published in 1982, three different authors demonstrate the realisation of the montage of the piece:

- attack substitution: replacement of the attack of one percussion-resonance by the other:



- percussions-resonances with multiple attacks:



³⁸ *Ibid.*, p.7.

³⁹ Emmerson, S. (1986), *The Language of Electroacoustic Music*, Palgrave Macmillan, p.19.

⁴⁰ *The Wire* magazine (1998), no.176, p.38.

- shortening the resonance of the percussive element. The cut between the two fragments of the composite figure emphasises percussion over resonance:



- percussion + artificial resonance: The attack of a percussion-resonance, isolated beforehand, is passed into the reverb chamber which adds an artificial coloured resonance suddenly situating the element in a space:



By combining these different basic techniques, Parmegiani has produced a wide variety of more complex figures; for example:

- multiple attack plus reverb



- attack substitution and tightening
etc.⁴¹



The same paper of the analysis discusses further that after this microscopic montage aiming to provide isolated elements, the rest of the assembly work is a broader picture: construction and organisation of the tracks, temporal distribution of the elements for which again, the montage technique is used.⁴²

⁴¹ Thomas, J.-C., Mion Ph., Nattiez, J.-J. (1982), *L'envers d'une oeuvre: De natura sonorum de Bernard Parmegiani*, Buchet-Chastel, p.42—43.

⁴² Ibid., p.43.

Chapter 3

Musical space

The idea of sound being a spatial event occurred to me only after encountering composing with electronic sounds. I find two ways of thinking of space in sound: space as a metaphor and literal uses of space meaning the physical reality of acoustical aspects, and the aural perception of sound or music in space.

3.1. The Metaphor of Musical and Sonic Space

Throughout the history of musicology, space was used to metaphorically describe various aspects of music. According to F. Joseph Smith, the use of visual metaphors in the language describing music is coming from the overall western tendency to explain experiences with vocabulary that describes visual senses. These metaphors can be found in the writings of the philosophers back in Greek times. Smith points out:

“The history of philosophy since Aristotle seems largely bound to sight and light. How a thing looked or appeared concretely to the sight, be that of the eye or of the mind, was the most important approach to what a thing was [...]. From Plato to Aristotle through phenomenology in its traditional forms we are dealing almost exclusively with the phenomenon of actual and metaphorical sight, literally dominating what a thing is by how it looks.”⁴³

Inevitably, the significance of visual sense in the language influenced the language that we use to describe and think about music, that is heavily dependent on visual metaphors. Moreover, taking into account that Western music theorists developed a visual musical notation, it gives a better understanding why musical language is metaphorical:

“The fact that Western music is grasped or written down in musical notation sets it off as an art peculiarly influenced by visual symbol and metaphor. For the audial experience is literally transferred over to an intellectual grid that originated in things seen, whether by the physical eye or by the mind’s eye. And thus in a larger sense Western music history has been the history of a veritable Augen-music [...] the reason for this can again be traced in the rise of music theory, as it took its terms from philosophy.”⁴⁴

Current musical terminology contains numerous spatial concepts such as “material”, “form”, “structure” to describe an experience which, in the end, is a temporal one. The use of the concepts of “high” and “low” to refer to the dimension of pitch, amplitude or “short” and “long” to refer to the lengths of the sounds are other examples of spatial metaphors used for describing music.

⁴³ Smith, F. Joseph (1979), *The Experiencing of Musical Sound: Prelude to a Phenomenology of Music*, Gordon and Breach., p. 28–29.

⁴⁴ Ibid., p. 153.

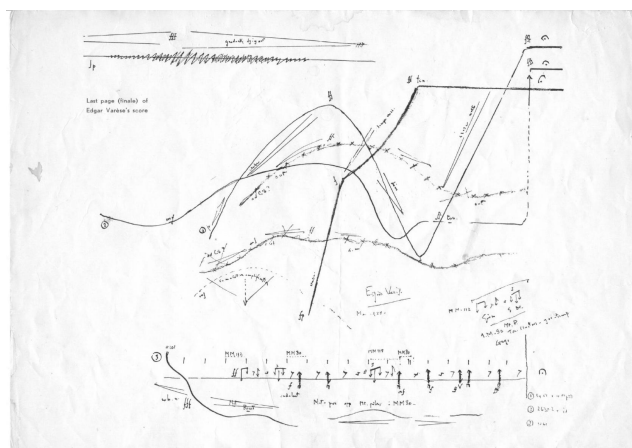
Frederico Macedo in his article about metaphors in music,⁴⁵ nicely conveys Thomas Cliton's attempt in 1983 to build a system of metaphors that would illustrate musical texture in geometric terms:

*“MUSICAL-TEXTURE-AS-GEOMETRIC-SPACE mapping:
Perceived melody is line
Texture is surface
Perceived distance is distance
Surfaces can be penetrated by silence
The short-memory of a sound can be penetrated by another sound
Surfaces can be penetrated by sounds
A surface can emerge from other surface
Surfaces can overlap one another
Sudden modulation is change of perspective”*⁴⁶

In order to expand the concept of music, Trevor Wishart in his book *On Sonic Art* (1998), proposes the idea of the sonic space. Using spatial terminology he creates ways to talk about a completely new musical concept: sonic art. He suggests this new term to describe music that would include not only electroacoustic or instrumental music but music that involves any kind of sound organisation. Wishart says, that the “Sonic Art” “includes music and electro-acoustic music [...] it will cross over into areas which have been categorised distinctly as text-sound and as sound-effects. [...] For me, all these areas fall within the category I call ‘music’”⁴⁷

3.3. Sound in Space

After magnetic tape became accessible to more creators after the Second World War, it brought a possibility to compose "spatial music" since from then, time could be counted by the length of the tape. There have been quite some practitioners who were incorporating spatial ideas as part of their music composing approach. Forerunners Edgard Varèse and Iannis Xenakis occupy a significant place in the spatial music field and music of the 20th century in general. The Realisation of the Philips Pavilion (1958) at the World's Fair in Brussels, commissioned to Le Corbusier together with Xenakis, and the incorporation of Varèse's musical piece was a striking phenomenon in spatial music history.



Working diagram of Edgard Varèse's *Le Poème électronique*

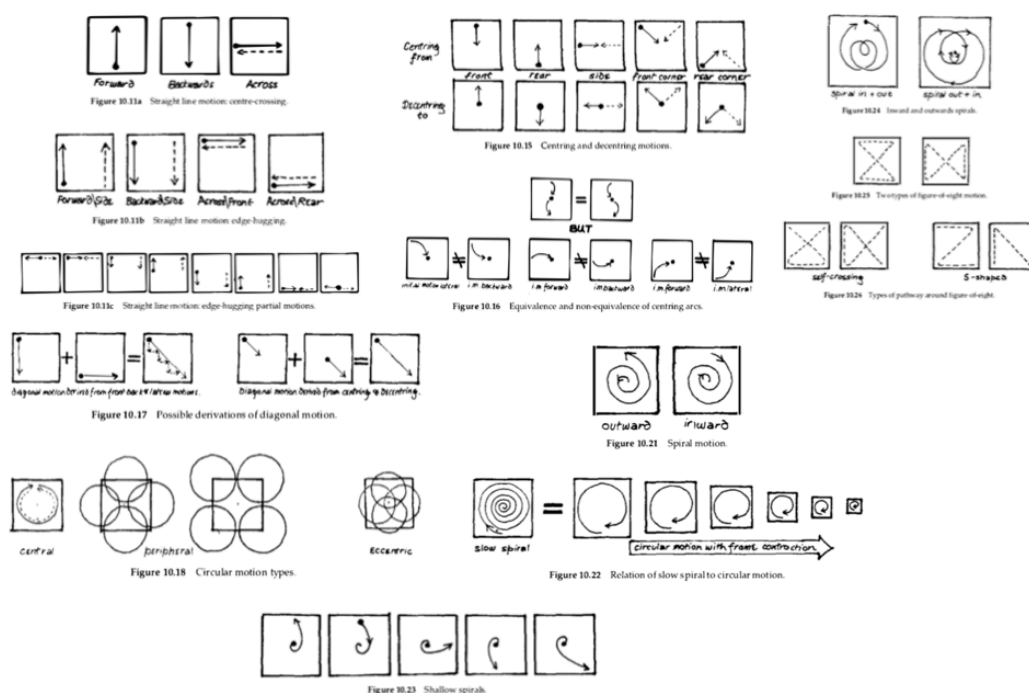
⁴⁵ Macedo, F. (2015), “Space as Metaphor: The Use of Spatial Metaphors in Music and Music Writing”, *Signata*, no.6, p. 215–230.

⁴⁶ Ibid., p.223. This style of writing is based on George Lakof's suggested mnemonic system to analyse a metaphorical language.

⁴⁷ Wishart, T. (1998), *On Sonic Art*, Harwood Academic Publishers, p. 4.

In the book *From Harmony to Chaos*, Kees Tazelaar and Jan de Heer mention that the realisation of the pavilion was some of Varèse's musical utopias come true. The building contained 325 loudspeakers accompanied by sub-woofers, which is an impressive spatial setup even when looking at it from a six-decades-after view.⁴⁸ Further, the authors of the book point out that Varèse's thinking towards sound and space was very multidimensional in the sense that the concept of spatiality for him wasn't only referring to the sound source's localisation, whether it would be loudspeakers or musicians. He would also view the distance between low and high pitch as space. Furthermore, spatialised music for him was related to musical freedom.⁴⁹ Varèse often spoke of freeing Western music from its traditions as tonal systems and its static realisation. He was dreaming of adding a fourth dimension, sound projection to already existing three in music: horizontal, vertical, and movements of sound.⁵⁰ By playing the *Poème électronique* through the loudspeaker array in the Phillips Pavilion, Varèse was able to achieve the sound projection in space. Although Varèse's music was only one element of a large multimedia work in the Phillips Pavilion, in the music scene it was one of the first spatial musical works that has been presented in public.

In the book mentioned in the previous chapter, Trevor Wishart traces a way to deal with sound in space. He argues that our minds cannot separate the sounds from their coming source and the perception of them will be very much dependent on how we experience the world in general. For example, sounds coming from the back might suggest danger as in the past it was an essential skill of survival to detect sound coming from the predator. Also, humans would always turn their faces towards something or someone they are confronted with. There will always be a significant distinction in how we hear sounds coming from "in front" and from the "behind" both in the "natural" world and in a "virtual acoustic condition" (what Wishart calls a loudspeaker setup). He adds that spatialised sound in a concert situation is something that is more similar to a "real world". Further, Wishart analyses and provides sketches of sound motions in a quadraphonic loudspeakers setup



⁴⁸ Tazelaar, K. de Heer, J. (2017), *From Harmony to Chaos: Le Corbusier, Varèse, Xenakis and Le Poème électronique*, Duizend & Een, p.39.

⁴⁹ Ibid., p.41.

⁵⁰ Varèse, E. (1936), "The liberation of sound", in Cox, Christopher and Warner, Daniel (eds.) (2004), *Audio Culture: Readings in Modern Music*, Continuum, p. 66.

3.3. Aural Architecture and Acoustic Space

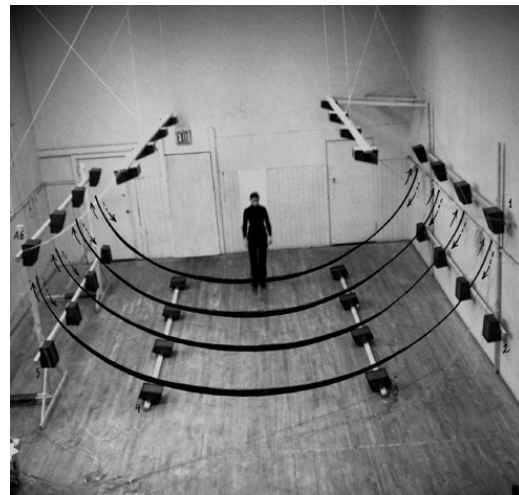
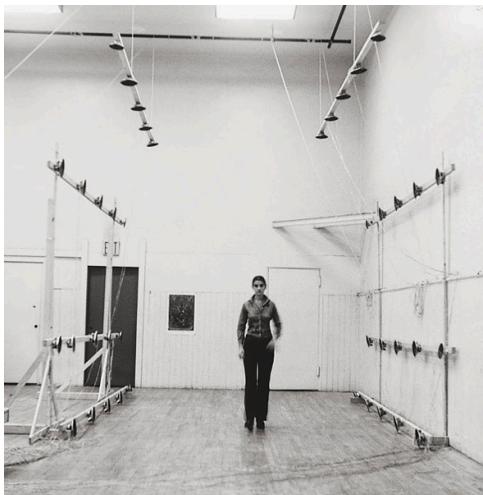
I like to think of music as an invisible landscape or architecture, that is not necessarily dependent on visual stimuli. One of the ways to think of aural architecture is by comparing it with visual architecture or the landscape, although, as Barry Blesser and Linda-Ruth Salter discuss in their article “Aural Architecture: The Invisible Experience of Space”, while vision allows us to experience static architecture or spaces without people and any kind of events, hearing very much depends on events made by human nature, that can be both intentional and unintentional.⁵¹ Therefore, sonic imaginary space is built with the interaction of movement and gestures through time in space and so the physical arrangement of the loudspeakers becomes a sort of a body creating a form of mediation between the sound and their actual movements.

Architectural space had a big impact in music development throughout the years. It influenced musical forms since acoustic qualities significantly influence the presence of sounds appearing in the space through reverberation, reflection, etc. Therefore, architectural space is inevitably always a part of the music piece.

The way we experience any kind of space is very much influenced by how we listen in general. Brandon La Belle puts it in this way:

“Sound and space are inextricably connected, interlocked in a dynamic through which each performs the other, bringing aurality into spatiality and space into aural definition. This plays out in an acoustical occurrence whereby sound sets into relief the properties of a given space, its materiality and characteristics, through reverberation and reflection, and, in turn, these characteristics affect the given sound and how it is heard.”⁵²

Accordingly, any kind of sonic event has a specific relationship with space as its appearance is dependent on it. Though, Bernhard Leitner in early the 1970s started to explore the approach of “composition of space by means of sounds”⁵³ where “[...] the shape of space itself is defined by traveling sound: ‘so as to change’ the proportions and the message of an existing space.”⁵⁴ Leitner did theoretical research and sketching that he eventually realised: arrays of speakers attached to wooden planks. He experimented with different positioning of them.



⁵¹ Blesser, B., & Salter, L.-R. (2009), “Aural Architecture: The Invisible Experience of Space”, *Immersed. Sound and Architecture*, OASE, (78), p.50–56.

⁵² La Belle, B. (2007), *Background noise*, Continuum, p.123.

⁵³ Leitner, B. (1998) *Sound: Space*, Cantz Verlag, p.23.

⁵⁴ Bernhard, L. (1971, March), “Sound architecture: Space created through traveling sound”, *Artforum*.

Leitner had no intentions to produce music through those loudspeakers, his intention was rather to produce space through traveling sound. His well-known project of the sound cube, realised in 1984, comprised a setup of a 42-loudspeaker system that was placed in the form of a cube, and sounds were programmed to travel from one speaker to another. The listeners are supposed to be experiencing the space with all their body through sounds traveling at various speeds, resonations, reflections. In Leitner's terms, space can't be experienced suddenly, it rather has a beginning and an ending depending on a played sequence of sounds. Here space unwinds in time through the development of sounds.

Chapter 4

Developing Compositional Strategies

My workflow of composing music was always rather free from systems, strict planning, and much based on intuitive decisions. Explicating that, my memories take me to the time when I was studying jazz singing in both music academy and later in the conservatory for over five years. In my studying process, I was relatively more focused on improving improvisation skills with the voice (in terms of seeking complex musical phrasing in both a tonal and rhythmical sense), than on voice training to achieve the “quality” of the singing voice. There is a particular quality that I noticed myself gaining while practising improvisation, which is an ability to generate a musical idea just a moment sooner than the actual musical output.⁵⁵ The voice is a perfect “apparatus” in the way that its response to the idea can be realised immediately, without the need to adjust the positioning, setting the parameters, which would be the case with many other acoustic and electronic instruments. In the improvisation process (and here I particularly refer to the tonal and rhythmical improvisation, based on given chord progressions), the musical idea always goes before the implementation and while performing that idea, there is another one generated in the mind, that will be performed after and so on.

It might seem witty, but regarding my electroacoustic composition process, I view it as a very slowed-down version of improvisation where the musical idea follows another one, and thus the chain of musical ideas ultimately dictates the structure and form of the composition. The only differences are that in this process I deal with numerous sound materials and multidimensional notions, in terms where those sounds can be placed in that musical idea. Moreover, while in jazz improvisation the musical ideas are mostly set on a particular tonality and tempo, in electroacoustic composition I find inexhaustible freedom of choices regarding pitch along with temporal and spatial organisation, whereas using the montage technique in the compositional process, I am able to precisely choose and edit the placement of the latter two.

Before going into a more detailed investigation of my musical works, I would like to distinguish three phases in my creative process:

1. Creating or collecting the sound material
2. Constructing blocks simultaneously in time and space and transforming the sounds.
3. Constructing the overall form

4.1. *Merge* (2020)

This composition is a mingle of two pieces composed throughout the academic years of 2017–2019 in Sonology, and rearranged in 2020 for an octophonic sound diffusion system. I completely broke those two pieces apart and was left with the immense amount of sound material that came from various sources:

- Violin (recorded by Ugnė Vyliadaitė)
- BEA 5 analogue studio
- Prophet-8 synthesizer
- SuperCollider
- Recorded objects

⁵⁵ By musical idea I mean the narrative structure determining the temporal relations between musical elements (pitch, amplitude, timbre, etc.) and non-elements (silence).

The piece has a duration of almost eleven minutes and is built from nine musical blocks (or sections) that are composed with different combinations of the sounds from the sources mentioned above:

1. 00:00–01:25 Sine waves and grains (SuperCollider) and recorded bells.
2. 01:25–02:30 Material from BEA 5 – transitioning to another section from 02:10 with granular sounds (SuperCollider).
3. 02:30–3:03 Sine waves combined with textured noise (SuperCollider) – transitioning to the next section from 02:52. with the high-pass filtered violin.
4. 03:03–03:50 Violin.
5. 03:50–04:18 Material from BEA 5 and the Prophet-8 synthesizer.
6. 04:18–05:23 Low-frequency sine waves combined with noise (SuperCollider) and violin.
7. 05:23–06:58 Motifs from the Prophet-8 synthesizer, one motif from the violin, noises and granular sounds from the Prophet-8 and SuperCollider – transitioning to the next section with high-pass filtered violin.
8. 06:58–09:54 Prophet-8 and Violin.
9. 09:54–10:45 Noises from the Prophet-8 synthesizer and SuperCollider and high-pass filtered violin in the end.

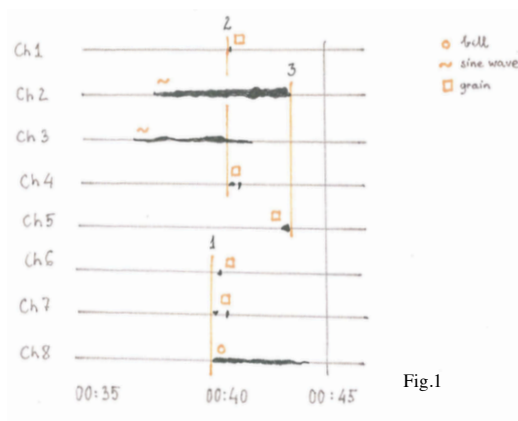


Fig.1

There are new musical gestures made combining two or more sounds from different sources by using montage. The chain of those gestures makes up a bigger musical block and continues until the next block with different sound material. The fundamental principle of the montage in this piece is causality. **Causality** refers to the idea that an event, or in this case, a sound event, will result in the occurrence of another following event, or in some cases it causes cutting the sound off or its interruption (intercutting) with another sound. Here is a visual representation of the small passage from the first section of the

piece where sine waves, bells, and grain sounds causally interweave with each other (Fig.1). The horizontal axis represents time, the vertical axis represents the eight channels that are assigned to eight speakers (space). In this picture, we can see that three causal events are happening between 0:35 and 0:45. In the first one, the sine wave occurs on the eighth channel because the grains come into view at the same time on channels six and seven.

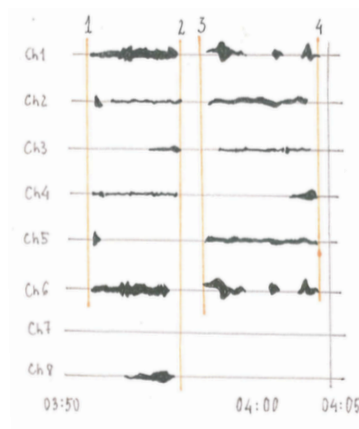


Fig.2

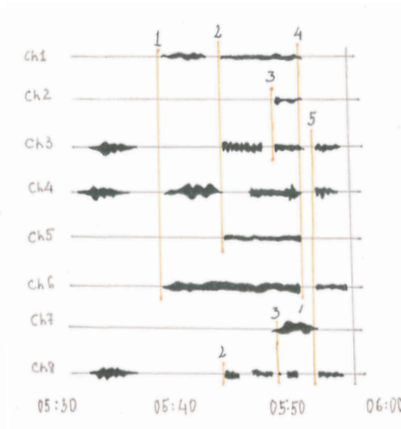


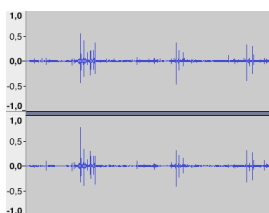
Fig.3

Subsequently, the event follows where the sine wave on the third channel fades away because of the grains occurring on channels one and four. And lastly, the sine wave on channel two ends together with the grain that pops out on the fifth channel at the same time. In another example (Fig.2), of the excerpt from the fifth section (3:50 to 4:05), we can see sound materials from BEA 5 and the Prophet-8 synthesizer. While occurring and ending at the same time, they are creating firm material blocks and steady gestures. In the last example of the short excerpt from section 7 (Fig.3), there are seemingly more complex causal relationships happening between the violin, noises, and granular sounds from SuperCollider and the synthesizer.

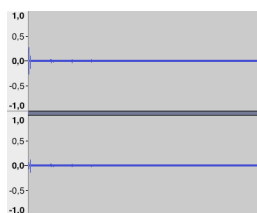
Although, this method wasn't an initial plan of composing the piece, making sound material dependent on each other's occurrence revealed as an effective strategy to create meaningful relationships between sounds and to create the whole from initially unrelated sounds coming from two different pieces.

4.2. *IIIA* (2021)

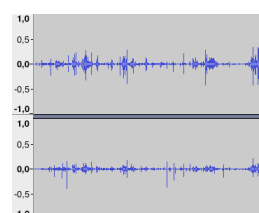
My graduation project consists of a series of compositions that are based on the recordings from three different silent places accompanied by other sound material:



Sound wave of the recording from the courtyard in The Hague (the apartment number is 111A) during the night.



Sound wave of the recording from the silent Koncon's library at



Sound wave of the recording of the silence in Utena, Lithuania while -18° Celcius.

IIIA is the first piece of the series. *IIIA* refers to the number of the house from which the courtyard was recorded during a quiet night. The highly amplified and processed recording became the main axis of the piece. The sounds of the silence interweave with a ring-modulated synthesizer and cymbal sounds. Added to the gestures already encoded in the recordings of silence and instruments, there are new ones that are constructed by using the same micro-montage technique in time and space.

Recording from the courtyard happened to have continuous crackling which (the spikes in the sound wave) became starting points for deconstructing the material in order to construct new gestures and imaginary aural places. There are a few ways in which I was achieving that:

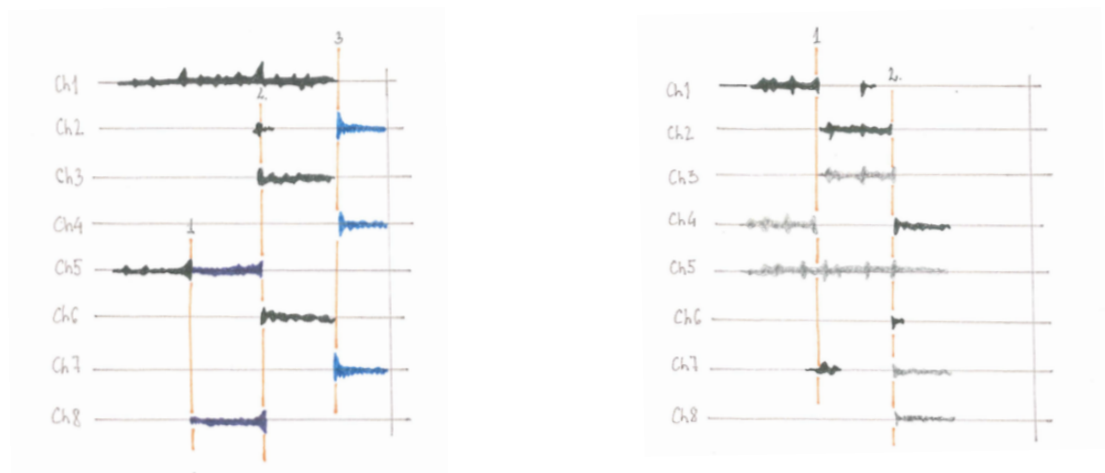
- intercutting another sound material (cymbal sounds, ring-modulated synthesizer) between two or more spikes:



intercutting different filtering of the same material (grey colour represents different filtering, for example, high-pass filtered recording):



- creating causal gestural patterns both in time and space:



- introducing newly constructed gestures made up from various combinations of given possibilities, for instance: recorded silences intercut with cymbal, a high-pass filtered cymbal with low-pass filtered silence, ring-modulated synth with band-pass filtered silence, and so on.

- creating variations of the same gestures by altering spatialisation, filtering, etc. (for example the same gesture would be repeated with the shift of the tracks by one speaker in a circular motion).

The remainder of the work is a more extensive picture: the development and organisation of these new structures are placed in a larger picture, for which again, the montage method is used.

Conclusion

In this paper, I tried to guide the reader through some concepts, ideas, and musical examples that have been influential on my process of listening, experiencing, and composing with sounds.

Getting familiar with the concept of silence, in both musical and non-musical contexts, pointed me out its importance while creating relationships between sound and non-sound. Generally speaking, in music, silence can be equally significant as sound. Furthermore, listening to the silence as the sonic condition in the real world, brought me primary immersive listening experiences followed by learning to hear separate layers in the whole mass of the landscape of sounds. This led me to be aware of a possible wide spectrum of dynamics in the compositional process and of subtle sounds and silence increasing the listening experience.

By entering the electronic music realm, I simultaneously encountered the possibility to edit sound's positioning in time and space in a digital audio workstation. The montage technique gradually became my primary tool not only for the sound organisation but also for creating new sound figures and gestures that wouldn't be possible to achieve otherwise.

Becoming aware that sound is a spatial event led me to expand my vocabulary for describing sounds in another way than in classical musical terms. Having a language for the sound that is heavily dependent on visual metaphors inevitably influenced my thinking of sounds as the aural architecture and vice versa, and the use of the multichannel speaker system added another dimension to my compositional process.

Admittedly, I introduced a chapter on my compositional process that hopefully enlightened my approach to composing so far. The writing process has been a learning experience that made me acquainted with my standpoints in terms of music composing, as well as that it inspired me to investigate these standpoints more. Throughout this process, I noticed my focus being shifted towards a more thoughtful and purposeful composing approach.

Bibliography

- Bechtel, W. and Bollhagen, A. (2019). "Philosophy of Cell Biology", Stanford Encyclopedia of Philosophy.
- Bernhard, L. (1971, March), "Sound Architecture: Space Created Through Traveling Sound", *Artforum*.
- Blessner, B., & Salter, L.R. (2009), "Aural Architecture: The Invisible Experience of Space", *Immersed. Sound and Architecture*, OASE, (78).
- Broadhead, T.M. (2011), *Charles E. Ives Symphony No.4*, Associated Music Publishers.
- Burkholder, J.P. (1995), *All Made of Tunes: Charles Ives and the Uses of Musical Borrowing*, New Haven: Yale University Press.
- Cage, J. (1948), "A Composer's Confession", Vassar College [online].
- Cage, J. (1989), "An Autobiographical Statement", Inamori Foundation.
- Cage, J. (1961), *Silence: Lectures and writings*, Hanover, University Press of New England, foreword.
- Deleuze, G. (1983), *Cinema I: Movement-Image*, Les Éditions de Minuit.
- Demers, J. (2010) *Listening through the Noise: The Aesthetics of Experimental Electronic Music*, Oxford University Press.
- Duckworth, W., *An Interview with Cage*, Bucknell University Press.
- Eisenstein, S. (1969), *Film form: Essays on Film Theory*, Mariner Books.
- Emmerson, S. (1986), *The Language of Electroacoustic Music*, Palgrave Macmillan.
- Ives, Ch. (1978), "Central Park in the Dark", ed. John Kirkpatrick, Mobart Music Publications.
- Ives, Ch. (1953), *The Unanswered Question*, Southern Music Publishing Co., Inc.
- Kendall, T. (2009), "Speech Rate, Pause, and Linguistic Variation: An Examination Through the Sociolinguistic Archive and Analysis Project", PhD thesis, Duke University.
- Kendel, Erik. K. (2016), *Reductionism in Art and Brain Science: Bridging the Two Cultures*, Columbia University Press.

Kuleshov, L.V., Ronald, L. (1974), *Kuleshov on Film: Writings by Lev Kuleshov*, University of California Press.

Kyoto journal (1998), re-release in 2020, “Ma: a measure of infinity”.

La Belle, B., (2007), *Background noise*, Continuum.

Larson, K. (2013), *Where the Heart Beats: John Cage, Zen Buddhism, and the Inner Life of Artists*, Penguin press.

Leitner, B. (1998) *Sound: Space*, Cantz Verlag.

Lexico Dictionaries | English (2020), Reductionism | Definition of Reductionism by Oxford Dictionary.

Lundholm Fors, K. (2015), “Production and Perception of Pauses in Speech”, doctoral dissertation in linguistics, University of Gothenburg.

Macedo, F. (2015), “Space as Metaphor: The Use of Spatial Metaphors in Music and Music Writing”, *Signata*, no.6.

Nitschke, G. (1976), Essay based on a talk given at Cornell University at the Topical Seminar on Time and Space in Japanese Culture.

Programme notes of “Celebrating Canadian Composers, Hildegard Westerkamp’s Birthday”, Canadian Music Centre (April 6, 2018).

Programme notes of the radio show on LMTKS radio, premiere of the piece *Sensors & Measurements* by Audrius Šimkūnas (December 14th, 2020).

Rousseau, Jean-Jacques (1779), *A Complete Dictionary of Music*, Murray.

Schaeffer, P. (2012), *In Search of a Concrete Music*, University of California Press.

Shūhei, H. (2013), “Working Words: New Approaches to Japanese Studies”, *Review of Japanese Culture and Society* Vol. 25, University of Hawaii Press.

Smith, F. Joseph (1979), *The Experiencing of Musical Sound: Prelude to a Phenomenology of Music*, Gordon and Breach.

Takemitsu, T. (1989), “Contemporary Music in Japan”, *Perspectives of New Music*, vol. 27, no.2.

Takemitsu, T. (1994), “One sound”, trans. by Hugh de Ferranti, *Contemporary music reviews*, vol.8/2.

Tazelaar, K. de Heer, J. (2017), *From Harmony to Chaos: Le Corbusier, Varèse, Xenakis and Le Poème électronique*, Duizend & Een.

The Wire magazine (1997) no.11.

The Wire magazine (1998), no. 176.

Thomas, J-C., Mion Ph., Nattiez, J-J. (1982), L'envers d'une oeuvre : *De natura sonorum de Bernard Parmegiani*, Buchet-Chastel.

Varèse, E. (1936), "The liberation of sound", Cox, Christopher and Warner, Daniel (eds.) (2004), *Audio Culture: Readings in Modern Music*, Continuum.

Voegelin, S. (2010), *Listening to Noise and Silence: Towards a Philosophy of Sound Art*, Bloomsbury Academic.

Westercamp, H. (1974), "Soundwalking" from "Sound and environment in artistic practice", originally published in *Sound Heritage*, Volume III, no.4.

Wishart, T. (1998), *On Sonic Art*, Harwood Academic Publishers.