

The Strzemiński Academy of Fine Arts in Lodz

Auditive images

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Introduction

It is hard to say how and why my interest in painting has also expanded to include the spectrum of sounds. However, sound has been present in my artwork for a long time and is one of its most significant aspects. Certainly, my constant curiosity about the world and the desire to seek and expand the means of expression are "to blame" for it.

Looking back, I can say that an important moment that turned my sensitivity towards the field of sound and that was a turning point in my work was a pilgrimage to Santiago de Compostella in Spain, made right after my diploma. Those 900 km along the coast, which I walked with a friend, became for me a kind of initiation journey, both in the spiritual and artistic sense. The journey was a purifying experience, lasting 33 days. Since we were also passing through Bilbao, we stopped at the Guggenheim Museum. The exhibition presented then by the Chinese artist Cai Guo-Qiangs entitled "I Want to Believe" made a huge impression on me. Large format paintings made with the use of dynamite, as well as sculptures made of unfired clay, depicting human figures disintegrating under the influence of time – and there I was: sore, bitten by badbugs, wearing worn out socks and leaky shoes, aware as never before of my fragility and transience.

I had a sketchbook and markers in my backpack, but I felt an inner reluctance to reach for them. On the road, I was tormented by the vision of all the images that man had painted over twenty millennia, gathered in one place as if it were a huge landfill full of precious objects. Is there any point in contributing to this? What is really important to me? What gives me joy? What do I long for? I also realized for the first time that it would be ideal for me to find a means of expressing myself and telling what I feel and see without having to carry paints and canvases.

Another important moment for me was a trip together with students of the Academy of Fine Arts in Lodz for a two-week open air event in Drohobych in Ukraine in 2006. There I got to know traditional singing. Two women singing Ukrainian songs in the streets of Lviv made a huge impression on me. The experience was so strong that with time I started to participate in numerous workshops of the so called "white singing" and in the International Summer Schools of Traditional Music. These

experiences coincided with my co-founding a singing group in Lodz called Miejskie Darcie Pierza (Urban Feather Plucking)¹, as well as with my participation in performances with the choir of the Choreia Theater and with attempts to combine all these experiences into a coherent whole. These explorations resulted in the incorporation of voice into the realm of visual art during a solo exhibition at Manhattan Gallery entitled "Experiment with Sowing and Voice"(2013).

Traditional singing touches areas of pure emotions, primordiality and naturalness. For me, it has become not only an additional skill and means of expression. It is associated with certain values and sensitivity brought into the field of art: austere expression, authenticity, searching for the inner truth of man, reaching for archetypal patterns of social behavior. It is in these areas that I seek my own path of spiritual development, at the same time looking for a form that would be able to sensibly show what I see and feel while observing the reality of the contemporary world. In this somewhat veiled way I discovered the art of performance. In many of my performances I sing, basing to a large extent on the technique of traditional singing. I co-created with my voice, among others: Joanna Rajkowska's performance "Song from the Workhouse" (2013), and I also create the musical project Mutant Goat together with Andrew Dixon and Suavas Lewy. Hence, among other things, the idea to establish the Strzeminski Choir at my alma mater in 2015, consisting of female students and lecturers (only women applied in the open call) and to create an audio-visual composition entitled "Taking up the Work of Predecessors"². A year later, also with the participation of the choir, the composition "rzeczniepospolita" (non-commonwealth) was created³, prepared for the exhibition "Rzeczy" (Things) at the Archaeological and Ethnographic Museum in Lodz.

¹ Existing from 2011 till 2017 in Lodz.

² The audio-visual composition "*Taking up the Work of Predecessors*" inspired by and based on texts by Władysław Strzemiński was created on the occasion of the 70th anniversary of the Strzemiński Academy of Fine Arts in Lodz. It has been performed twice. Under the link you can see the trailer <https://www.youtube.com/watch?v=i090xDUV2-8> [access: 07.08.2020]

³ The whole composition "*rzeczniepospolita*" can be heard and seen under the link <https://www.youtube.com/watch?v=LOuH307h7NM&t=3s>. [access: 07.08.2020] We repeated the composition once again, with a smaller line-up at the opening of the exhibition "*We Successors? Katarzyna Kobro, her influence on the development of fine and design arts in the theory and artistic practice of the Academy of Fine Arts in Lodz*" in 2016.

Perhaps these, important to me and also to the audience⁴, artistic events could successfully have been included in my work on the doctorate, which I had already started. However, I didn't think about it while I was working on them, I just wanted to satisfy the need to realize the ideas that I had on my mind and that were growing inside me.

In retrospect, I think that my creative passion, spanning many disciplines with a common denominator such as art, and turning at times into hyperactivity is fascinating, but sometimes disastrous, was also the main reason why this work has stretched so much in time. Additionally, there was the period of pregnancy and the beginning of motherhood. This difficult, but at the same time beautiful time, stopped and prevented me from continuing the thought I had started a few years ago. After the birth of my daughter it took me a year to be able to finish the practical and written parts of my dissertation with great support from my husband, who at that time was the main carer of the child.

I am happy to finally be able to share what has been created.

⁴ Srebrna Armatka Kultury (Silver Cannon of Culture) for the most funky event in the Lodz culture in 2015.

I. The intertwining of visual and musical arts – a historical outline.

Building visual-sound relations is common practice in contemporary art. For many artists, sound is simply one of the means of artistic expression. Syncretic art in its broadest sense, whose traditions date back to antiquity, developed especially in the 20th century, becoming an inspiration for contemporary artists.

The music of ancient Greece was combined with poetry and dance into one whole. At the same time it was perceived as a reflection of the laws governing the universe. Similar thinking was also present in the Middle Ages and in the Renaissance, that is why it was treated as unique, chosen from all the arts, the purest, closest to religion, the sphere of the sacred, affecting the soul.

Painters envied music's independence from the need for mimetic representation. At the same time, they were fascinated by its existence in time, as opposed to a visual work of art, which can only exist in space. Only in the score – the musical notation, one could find strong connections between music and the visual arts.

Since Romanticism, there has been increasing references to defining musical tones with colorful shapes. Claude Debussy (1862-1918) was inspired by the Impressionist painting by Claude Monet (1840-1926), and Igor Stravinsky (1882-1971) by Cubism. Henri Matisse (1869-1954) practiced playing the violin for years, which he immortalized in his self-portrait *Fiddler at the Window* (1917).

Nikolai Konstantin Čiurlionis (1875-1911), like Vassily Kandinsky (1866-1944), composed his paintings in a musical manner. Čiurlionis, who also had a musical education, used signs and symbols to create representational images of magical nature for his compositions. Kandinsky, later called the father of abstractionism, no longer wishing to express himself through symbols and anecdotes, used colors like keys.

As he wrote: *Color is the keyboard. The eye is the hammer, while the soul is the piano of many strings.*⁵ For this painter, every color had its counterpart in the sounds of music.

*Yellow, for example, has the peculiar ability to "ascend" higher and higher until it reaches the pitch unbearable for hearing and spirit: the sound of the trumpet, higher and higher, sharper and sharper causes pain to both hearing and spirit. Blue, on the other hand, with its opposite property of "descending" into infinite depths, is associated with the sound of the flute (if the blue is light) or the cello (if it becomes darker, "goes lower"), and with the wonderful, deep sound of the double bass, and finally: in the deepest sound of the organ you can see the depth of the blue. The well-balanced green corresponds to the medium and broad tones of the violin. A properly placed red (cinnabar) can give the impression of strong drum beats and so on. The vibration of air (sound) and light (color) are the basis of this physical affinity.*⁶

Kandinsky was not interested, as it might seem, in imitating music, but above all in getting rid of the burden of naturalism and the desire to express the inner world through abstract syntheses, which until then had only been possible in music – *the least (...) material of all the arts.*⁷

However, Kandinsky's real revolution in thinking about art was triggered by the compositional work of Arnold Schönberg (1874-1951), who boldly introduced dissonances into musical works and experimented with atonality.

"On 2nd January 1911 Wassily Kandinsky was a spectator and listener at a concert by Schönberg in Munich, during which two string quartets and three works for piano, Opus 11, were performed. The Russian painter had admired his music before."⁸ Moved by this event, he painted *Impression III*, where the dissonances he had heard were translated into an arrangement of color spots on the canvas. This painting is said to be crucial in the process of breaking subjectivity in painting. The revolution started.

⁵ W. Kandyński, *O duchowości w sztuce*, 1991, p. 62

⁶ From the article *Sztuka konkretna*, cit. after: W. Kandyński [1991], *Eseje o sztuce i artystach*, p. 137.

⁷ W. Kandyński, *O duchowości w sztuce*, 1991, p. 53.

⁸ From the article "Problematyczny" splot muzyki, malarstwa i biografii. Eksperyment Arnolda Schönberga, A. Piekoś, *Quart* Nr 4(42)/2016, https://quart.uni.wroc.pl/pdf/42/q42_003009_Pienkos.pdf [access: 22.07.2021]

*Just as Schönberg freed composers from the system of tempered tonality, painters continued the process of rejecting the mimetic system and uniform spatial perspective.*⁹ Artistic manifestos began to include such terms as: rhythm, speed, dynamism, and even terms previously attributed only to music: sound, counterpoint, polyphony.

Over the following years, artists systematically explored the relationship between sound and color. Alexander Scriabin's (1871-1915) synesthetic blending of color and sound was to be realized in a monumental and multimedia work that united dance, music, word, and painting, and affected sight, smell, hearing, and touch. A preparation for this misterium was Symphony No. 5: *Prometheus: A Poem of Fire* (1909-10) for orchestra with piano, choir, and light piano (with sounds corresponding to colors). To complete the multimedia nature of the whole, the audience for the New York premiere of the work in 1915 was to be dressed in white. At nearly the same time, Russian futurist painter Vladimir Baranoff-Rossiné (1888-1944) constructed the optophonic piano, an electronic optical instrument. When played, the piano generated sounds while projecting light on the walls or ceiling filtered through painted and rotating glass plates whose colors, shapes, and rhythms complemented the music.

There are many similar examples of synesthetic instruments, such as Raul Haussman and his optophone, or Alexander László in collaboration with Oskar Fischinger and their projections from the series *Raumlichkunst*, which were immortalized in a painting by Matthias Holl.¹⁰

Just as in the 19th and into the mid-20th century music was glorified as the most ephemeral and transcendent of the arts (*...all the arts constantly aspire to achieve the status of music*), British aesthete Walter Pater wrote in 1888¹¹), so from the 1950s onwards people thought quite the opposite. Music began to be imagined as striving to achieve the status of painting.

⁹ K. von Maur, *The Sound of Painting. Music in Modern Art*, Munich, London, New York, 1999, p. 41.

¹⁰ *Raumlichkunst* was reconstructed in 2012 as a 3-channel video projection, digitizing hand-painted films from the 1920s on 35mm film. Since there are no musical recordings of A. Laszlo, the projection uses music by John Cage and Lou Harrison, with whom O. Fischinger had collaborated since the 1940s.

¹¹ Ch. Cox, *Wizualne dźwięki: o partyturach graficznych*, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 240.

As Morton Feldman put it: *Music is not painting, but it can [learn much] from it – from this more thorough temperament of waiting and observing the proper mystery of its material. It is distinctly different from the composer's acquired interest in their craft [...]. The painter owns the mystery, allowing all that he makes to be itself. To some extent he must withdraw himself in order to be in control. The composer is just learning to do this. He has only begun to learn that control can manifest itself in acceptance of his practices.*¹²

Avant-garde composers such as Morton Feldman, as well as John Cage, Cornelius Cardew, and Anthony Braxton saw writing a score as an end in itself. The departure from traditional musical notation in favor of graphic elements consisting of letters, lines, and drawings meant that there was much room for improvisation. Musicians were given the freedom to interpret visual symbols, but this required a synesthetic understanding of how images could be translated into sound. The freedom also meant that two performances of the same composition would probably not sound the same. *Nevertheless, they will be spacious and intriguing, full of peculiar sounds floating around, like the brush strokes of actionist painters or the lines and marks of master calligraphers*¹³ – as Christoph Cox put it.

The creators were also concerned with loosening the hierarchy and boundaries between the composer and performers. Ensembles, consisting of musicians and even non-musicians, acted democratically. Over time, the performer became the "author" of the score or composition, not just someone who could express it.

Since then, we can speak of an increase in interest in the subject of the score in contemporary art. Both in the field of music and in the field of visual arts, where it has become a separate artifact, the effect of merging both traditional fields.

It is impossible not to mention here the unistic compositions of Zygmunt Krauze and the composer's interest in the works of Władysław Strzemiński. Strzemiński's unistic concepts had a great influence on the young Krauze, then still a student of a musical secondary school. He was so enchanted by them that he

¹² M. Feldman, *The Anxiety of Art*, in: *Give My Regards to Eight Street...*, p. 26, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 211.

¹³ Ch. Cox, *Wizualne dźwięki: o partyturach graficznych*, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 242.

even planned to steal one of the paintings, which of course did not happen. The unusual experience and understanding of the painter's works was a stroke of genius and a signpost for the musician, and in time led to the creation of five pieces which were a tribute to Strzemiński. The compositions for symphony orchestra were intended, like the paintings, to be based on lack of contrasts. Although this idea, as the composer himself stressed, was utopian, the pursuit of it was a purifying experience. The way these compositions were exposed was also very interesting, because, as Krauze claimed, the place to listen to them could not be a concert hall. Then the compositions would begin and end, while they were meant to last, to be timeless, just like Strzemiński's paintings. An architect invited to cooperate¹⁴ created a kind of sound labyrinth consisting of "cabins" through which one could pass. In each "cabin" one could listen to a different unistic layer, and the visitor could stay in a given place as long as they wanted. Thus, the essence was access to the work not only at a given hour, as is the case with a concert, but all the time, analogous to Strzemiński's paintings hanging in the museum, which can be seen at any time.

Today we can hear the effects of Krauze's fascination with Strzemiński in the album Hommage à Strzemiński, released by the Bôlt publishing house in 2015. It features works written between 1968 and 1982, including the now iconic Polychromy in two performances: Warsztat Muzyczny (Music Workshop) and the American group gnarwhallaby.¹⁵

Krauze described his creative path, influenced by Strzemiński's work, during a speech delivered at a session at the Academy of Fine Arts in Lodz (then the State Higher School of Fine Arts in Lodz), organized by the Museum of Art in Lodz on November 26-27, 1993:

I would like to present the experiences that a composer has in relation to Strzemiński's theory and work. I am going to talk about my music, but I would like you to understand that I am actually talking all the time about the source of this music, that is, about Strzemiński's theory and oeuvre, because my music has been

¹⁴ Teresa Kelm – at Współczesna Gallery in Warsaw (1968, 1970), Wiesław Nowak and Jan Muniak – in Metz (1987) and at the Museum of Art in Lodz (1988), in Eggenberg Castle in Graz (1974) and the Rohan Palace in Strasbourg.

¹⁵ <https://culture.pl/pl/artykul/powidoki-mysli-strzeminskiego-w-muzyce> [access: 26.03. 2019]

closely related to it from the very beginning, and in fact Strzemiński's oeuvre was its source. In 1956, as a student of the Secondary Music School, I attended Strzeminski's posthumous exhibition and that moment had an impact on my future, that is, I understood then, firstly, that I was going to be a composer, and secondly, I understood how I was going to make my music. He gave me direction and showed me how to compose music. Not Stravinsky, not Bach, not many other composers, but actually Strzemiński. What is it about?

First of all, Strzemiński turned out to be a good teacher of musical form for a composer. Nobody at the conservatory told me anything new or interesting on the subject, but I learnt it from Strzemiński. My pieces from the 1960s, the early 1970s are, in my opinion, based on Strzemiński's principles of Unism. I understood it this way: a piece begins at a certain moment, at a certain point in time. This moment must expose the entirety of the piece, from the very beginning. This moment has to show all the elements of the piece, and later in its duration, which can be any length, nothing new will actually happen. I understood the theory of Unism in my music in such a way that the form is as homogeneous as possible, it has no contrasts. It was, after all, a period in Polish music when there was such a mainstream based on what I would call a chain of attractions, that something new was happening all the time, that the listener was constantly being attacked by new musical events, new sound events. I didn't like it and it didn't suit me, which is perhaps why I adopted so much of what Strzemiński showed in his paintings and what he wrote for myself and for my music, so much so that it actually became my own. (...)¹⁶

With time, also artists with visual arts education started to deal with the relation between the image and sound. It is worth mentioning here a pioneer in this field, Milan Grygar, whose so-called mechanical-acoustic drawings we could see at the international exhibition *Sounds of the Electric Body* at the Museum of Art in Lodz in 2012. The artist created these drawings from the mid-1960s using, for example, combs, springs or children's wind-up toys, which, after being soaked in ink or paint, he set in motion on the surface of the paper. What was important were

¹⁶ [Speech given at a session at the Academy of Fine Arts in Lodz (then the State Higher School of Fine Arts in Lodz), organized by the Museum of Art in Lodz on 26-27.11.1993].

the sounds that the artist's objects produced while drawing. Each process of drawing was recorded on a tape recorder, so that today, in addition to seeing the final work, we can listen to the accompanying soundtrack, imagining the entire course of creation.

At the end of the 20th century, interest in the idea of combining the visual and musical arts grew even more. New technologies brought new possibilities for the development of multimedia art. On the Polish visual arts scene the best known artists working with sound space are Wojciech Bąkowski, Piotr Bosacki, Katarzyna Krakowiak, Konrad Smoleński, Anna Zaradny, Zorka Wollny and the late Leszek Knaflewski, professor at the University of Arts in Poznań and founder of its Audiosphere Studio.¹⁷

The work most associated with the artist is his one-stringed instrument, *Electric Coffin*, which he played during his performances, for the first time in 1999, when he used dried roots as a score.

It is a very interesting phenomenon that Polish sound art is to a large extent the domain of artists originating more often from the milieu of academies of fine arts than music academies.

I talked about this phenomenon with a neo-avant-garde composer and lecturer at the Music Academy in Lodz, Artur Zagajewski, who for several years ran the Audiosphere Studio at the Faculty of Visual Arts at the Academy of Fine Arts in Lodz. The lack of knowledge about sound, composing, having all these skills that students with musical education are equipped with, does not necessarily have to be an obstacle. It is precisely these deficiencies of visual arts students that open up other, very interesting paths to solving musical problems in the form of objects,

¹⁷ Wojciech Bąkowski, Piotr Bosacki and Konrad Smoleński are students of Leszek Knaflewski. In 2015, the Centre for Contemporary Art Ujazdowski Castle hosted the exhibition *Przestrzajanie* (Tuning), which recalled Leszek Knaflewski's oeuvre, unfortunately already posthumously. However, it was not a classic retrospective, but as the text accompanying the exhibition described: "a symbolic meeting of Leszek Knaflewski with the artists who had a chance to collaborate with him during their studies at the Audiosphere Studio run by him. Knaflewski was not only a charismatic personality, but also an educator who initiated an experimental program of work with the matter of sound in the visual arts and developed an original, intuition-based method of cooperation with male and female students. He treated them as equal partners in artistic activity, interacting with them but also entering friendly competition. In his view, in order to become an artistic subject, it is necessary to master not only the technique of creating a work of art, but above all the technique of forming oneself."

installations or sound performances. Zagajewski stressed that when creating pure intuition, unconscious improvisation, or simply unfettered, non-calculating imagination are beneficial. Sound art naturally goes in the direction of combining different media, taking sound out of the purely musical areas.

It is obviously not the case that all kinds of "hybrids" are created only by the visual environment. Marek Chołoniewski, head of the Electroacoustic Music Studio at the Academy of Music in Krakow and the Audiosphere Studio of the Intermedia Faculty at the Academy of Fine Arts in Krakow, is one of the first Polish artists to combine the art of sound with digital technologies and programming. Since 1993 he has been the creator and organizer of the AudioArt festival, the program of the 25th edition of which entitled: *Music Without Borders* was filled with, among others, exhibitions with installations at the Bunkier Sztuki in Krakow, concerts with the use of EEG and motion interface, audiovisual performances and even dance performances.

Chołoniewski's work shows that sound does not belong only to concert or exhibition spaces. This idea was widely developed by the artist in the syllabus of the course *The Art of Sound: The advanced interconnection of contemporary technologies allows for dynamic artistic activities on a macro scale, both literally and symbolically, with the latter aspect referring primarily to cybernetic space – the virtual space of the Internet network in its various configurations. Real open macro space exists in an unlimited form both through the transition to higher atmospheric zones and further – to outer space and the universe. Its counterpart is virtual cybernetic space. Going beyond the closed space of the concert hall and the gallery is a transfer of the stage to the areas of public spaces and the replacement of the traditional artistic message by a dynamic, extended in time and space process of performing the work in a maximally varied form both in terms of time and space, real and virtual.*¹⁸

Before Marek Chołoniewski, the art of sound had been dealt with in Poland by such multimedia artists as Andrzej Łobodziński, a Lodz-based artist who ran the

¹⁸ Marek Chołoniewski, syllabus of the course *The Art of Sound – intermedia mediation*, available at [www.: <http://www.medialarts.pl/download/kadra/skrypty/interakcje/sztuka-dzwieku.pdf>](http://www.medialarts.pl/download/kadra/skrypty/interakcje/sztuka-dzwieku.pdf), [access: 25.03.2019]

Composition Basics Studio at his alma mater from 1972 to 2001. In the 1960s and 1970s Łobodziński combined musical and plastic ideas in sculptural objects.

As Grzegorz Musiał and Janusz Głowacki wrote about it: "In 1965, together with Ireneusz Pierzgalski, they built a kind of jukebox *Klantata* – and provocatively sent it to a painting and sculpture competition. In 1967, together with Krystyn Zieliński, they produced *Audycja I* at the studio, the next one was made at the Foksal Gallery in Warsaw in 1968, and the third one at the Museum of Art in Lodz in 1972. Earlier, in 1970, a sculptural-musical work entitled *HRA 1970* was created, now owned by The Museum of Contemporary Art in Los Angeles."¹⁹

Another artist worth mentioning is Krzysztof Zarębski, a pioneer of performance art in Poland who often used a tape with recorded music and vinyl records in his work. The artist did not, however, make sound from these tapes in the traditional manner through a tape recorder, but fused them into a lump of ice (*Freezing the Sound*) or set them in motion through ventilators (*Dialogue*, both works from 1974). Zarębski's fascination with sound can also be seen in his later projects, sculptural – non-musical objects, because they were not intended for playing (*Guitar* from 1988, *Instrument* from 1992, *Messages 2* from 1995),²⁰ or through collaboration with composer Krzysztof Knittel and other musicians in group activities.

It is also worth mentioning Wojciech Bruszewski, creator of video films about the relation between the image and sound (*24 Beats of a Spoon on the Window Sill* (1974), *Box of Matches* (1975), who used microphones, TV sets in his works²¹, as well as Krzysztof Wodiczko, creator of, among others, *Personal Instrument* (1969) – an electroacoustic device that makes it possible to control, by opening or closing the hand, the intensity of the signal flowing into the headphones.

It is appropriate to briefly introduce artists who created experimental films in which sound was also important, such as: Franciszka and Stefan Themerson and, for example, their film *Oko i Ucho (Eye and Ear)*(1944/45), which was an

¹⁹ 100% ABSTRAKCJI – Nowocześni w Łodzi 1955 – 1965 (100% ABSTRACTION – The Modern in Lodz 1955 - 1965), Łódź, March – April 2004, publishers: Galeria 86, Amcor Rentch. Curators of the exhibition: Janusz K. Głowacki, Grzegorz Musiał quotation after: <http://www.artysci-lodzkie.pl/pl/artysta//andrzej-lobodzinski/> [access: 25.03.20119]

²⁰ <https://zacheta.art.pl/pl/kolekcja/artysci/krzysztof-zarebski> [data dostępu: 25.03.2019]

²¹ I write more extensively about this later in the paper.

*experiment drawing attention to the visualization of sound*²² with the so-called "optic music"²³, as well as Jan Lenica (creator of experimental animations) or Józef Robakowski, who cooperated not only with professional musicians, such as Krzysztof Knittel or Eugeniusz Rudnik (from the Experimental Studio of the Polish Radio), but also with underground bands (such as the punk group Moskwa, whose concerts he filmed).

The above list of artists I've selected is just a general chronicle of intermingling and influencing of the visual arts and music. As the old proverb says "the more you get into it, the more complicated it becomes", the more examples of fascinating artworks. We could also describe examples of kinetic art, when sound filled gallery spaces thanks to mechanical sculptures; we could also refer to cubist painting, which tried to expand the painting with time, and to cubist-futurist experiments with the famous "Nude Descending a Staircase" (1912) by Marcel Duchamp, or his "Bicycle Wheel" (1913) – most likely the first sculpture with a moving element. We could also mention sound art – the term reserved for various artistic practices where sound is the substance and subject matter of the work of art, and the hearing, along with the sight, is an important sense for its reception. Much can also be written about interactive installations and experiments combining image and sound, in which sound is created with the participation of the viewer in real time, making together with objects in space a kind of multisensory hybrid, even more strongly affecting the recipient.

The above historical outline is intended to illustrate how wide the field of sound art is. "Art is infinite," as Władysław Strzemiński wrote. Contemporary art removes barriers between media, giving artists unlimited possibilities to realize multimedia ideas. It would seem that with time, this understanding of art will dominate. However, we live in an era in which the exploitation of sight prevails. It is enough to drive through the streets of cities. Billboards and advertisements of all sorts of companies offering their services almost "call" us. Social media that are so

²² The films of Franciszka and Stefan Themerson, *Filmy Franciszki i Stefana Temesonów*, broszura, 2007 <https://pl.scribd.com/doc/17893037/The-Films-of-Franciszka-and-Stefan-Themerson-DVD-booklet-2007>, [access: 25.03.2019]

²³ Abstract cinema involving the play of melodies, lights, colors.

common today are also the domain of the visual sphere. Nevertheless, this does not mean that it is natural. *The natural activity of the body is a polysensory activity.*²⁴ While the level of mass culture leaves much to be desired, audiovisual art is developing rapidly and new technologies are a great source of inspiration. On the one hand, technology and the perspectives it opens up are fascinating, providing artists with many creative possibilities; on the other hand, it threatens with falling into the trap of superficiality, jumping from one idea to another. Jerzy Ludwiński developed this thought brilliantly in one of his essays: *We could build whole factories, whole huge factories to show nothing in art.*²⁵

Technology, therefore, is not the only determinant of the development of art. Nevertheless, it enables the realization of ideas that were already present in it earlier (e.g. overcoming technical barriers of realizing color projection in Scriabin's Prometheus) and facilitates combining previously separated arts into a single, multimedia proposal.

²⁴ J. Młodkowski, *Aktywność wizualna człowieka*, 1998, p. 81.

²⁵ J. Ludwiński, *Sztuka w epoce postartystycznej i inne teksty*, p. 48.

II. Phonograph – the first machine for recording and reproducing sound.

Before 1870, sound could only be recorded and preserved for posterity by writing it down through another means of expression such as a score.

"The first sound registration preserved to this day is the sound recording of the French song *Au clair de la lune* made 156 years ago (April 9, 1860)."²⁶

This was possible thanks to the phonoautograph invented by Édouard-Léon Scott de Martinville in 1857. This device was the first to mimic the structure and function of the human ear, responding to sound waves similarly to how the eardrum works. The phonoautograph recorded the voice as a trace, but could not reproduce it because that did not interest its inventor, who was fascinated by the very patterns of sound waves produced on paper. So the phonoautograph represented sound as wavy lines – drawn through a coating of soot on glass or paper with a stylus, set in motion by a flexible membrane.

Just as the name of the invention suggests, the device only left an autograph of what it heard. (Fig. 3) We know about this oldest (preserved) sound recording because after more than 100 years, in 2008, thanks to modern technology, scientists at the Lawrence Laboratory in Berkeley, California, after receiving images from an institute in Paris, reconstructed the preserved linear transcription. The recording of this French song – presumably performed by the inventor himself – is available today and can be listened to on the You-Tube channel: <https://www.youtube.com/watch?v=q7Gi6j4w3DY>

It was thus possible to obtain a recording of sound waves. The aspiration to communicate more quickly led to the invention of the telegraph (1833) and the telephone (1876). Sound was becoming more and more tangible.

On December 6, 1877, the first device capable of recording and reproducing sounds was created in a laboratory in Menlo Park, New Jersey. Those first recorded sounds were lines from the children's poem 'Mary had a little lamb,' and

²⁶ <https://www.spidersweb.pl/2016/04/pierwszy-zapis-dzwieku.html>. [access: 24.02.2019]

*they were recited by the inventor of the phonograph, Thomas Alva Edison*²⁷
M. Kominek wrote about this oldest recording. It was replayed quite recently, in 2012.²⁸

Edison's machine consisted of a metal cylinder wrapped in a thin tin foil, two "mouthpieces" with membranes inside and styluses placed on them. (Fig. 4)

The idea of operation was based on membranes. Sound, or in other words the movement of air caused the membrane to vibrate and the stylus attached to it recorded a track on the tin foil of the cylinder. The stylus on the other side of the device, moving along the recorded track, "read" the sound, but it was audible only when the ear was placed against the "mouthpiece". At the beginning, only a one-minute recording was possible on a single foil on the cylinder. Additionally, the recording could only be played back a few times due to the fragility of the foil. The sound quality was also not very good. However, it was that instrument that "materialized" the previously elusive acoustic phenomena taking place in time, turning them into spatial forms of sound groove. The revolution had begun.

In 1878 Edison (Fig. 5) abandoned his work on perfecting the phonograph in favor of electric lighting, and his work on this device would probably have ended had it not been for the arrival of the gramophone, a new invention of Alexander Graham Bell. In 1887, this inventor of the telephone introduced the world to a machine that differed from Edison's phonograph in that the tin foil on the surface of the cylinder was replaced with wax, and the rigid stylus with a loosely mounted stylus that more easily "cut" the soundtrack. The drive mechanism also changed – the hand crank was replaced by an electric motor. All these improvements to the graphophone made the sound clearer, less disturbed by the so-called hum, and Edison himself returned to his device. In this way, the competition between the two inventors contributed to the development of phonography. In time, by thickening the grooves, it was already possible to record 4-minute recordings on cylinders and, thanks to metal tubes, to listen to music from a distance. The phonograph itself began to make a career in the entertainment industry. The period of jukeboxes began. However, the cylinder recording could not evolve any further.

²⁷ M. Kominek, *Zacząło się od fonografu...*, 1986, p. 35.

²⁸ <https://www.youtube.com/watch?v=xBvHbRJznXM>

On May 4, 1887, Emile Berliner (Fig. 6), a German emigrant from Hanover, received a patent for a gramophone, a device that recorded sound on a record, in New York City. The first record was heavy and made of glass, covered with soot, on which the stylus, moved by the membrane vibrated by sound waves, left its mark. However, such a delicately marked trace could not be reproduced. The lacquered plate was transferred onto a metal plate using a photo-etch method. The duplication process was simpler than with cylinders, but not perfect enough. It took Berliner a few more years to develop a faster way of copying. Ebonite (vulcanized caoutchouc) proved to be the ideal material – lightweight and durable at the same time. From that moment on it was possible to think about mass production. The first gramophones were mechanical devices, manually driven by a crank. It was not until November 2, 1925 that electric solutions were introduced.

Phonographs in one form or another continued to exist until 1929, when cylinder recording became completely obsolete. What is important is that the phonograph was, until the end of its existence, an entirely acoustic device, based only on a sensitive membrane. There was never any experimentation with electric or microphone recording.²⁹

²⁹ https://gadzetomania.pl/5412,poczatki-fonografii-fonograf-czyli-martwa-droga-ewolucji-cz-1?fbclid=IwAR2xDwyNxiVTngzGf12j4k66zK85iNPwJx_Wmresy74RowrXUUTnaJcYTvc[access: 11.04.2019]

III. The concept of time in linear terms.

Listening to the first sound recordings, I traveled with my imagination to the 19th century, to the time and place when they were made. I imagined the room where the recording took place, the clothes Martinville and Edison were wearing. In a sense, I was "moving back" to the past. However, our perception of reality has not always taken into account such a concept as the past.

The understanding of time is culturally conditioned, shaping on an unconscious level the attitude of a given society towards reality. We become aware of the existence of this cultural stereotype only when we meet a member of a society that is unfamiliar to us (e.g. with a social system, culinary tastes, or temperament that differs from ours). And we do not have to think about other continents. It is enough to leave the city and move to the country to experience the divergence in the approach to time. As Ryszard Kapuściński wrote: "(...) if we go to a village where a meeting was to be held in the afternoon, and there is no one at the meeting place, there is no point in asking: 'When will the meeting take place?' Because the answer is known in advance: 'When the people gather.'³⁰

In ancient Greece, there were two concepts of time perception. Time understood as a straight line, having its beginning and end, just as human life has them, and time taking the form of a circle, understood as cyclical "movements of the world", repeating phenomena (e.g. seasons of the year, day and night, phases of the moon). The latter, derived from nature, the concept of time as a circle prevailed for a long time and was present even in the idea of reincarnation, yet Christianity, in which death is the end of earthly life, contributed to its suppression. With the new approach to reality the distinction between past, present, and future appeared.

When it came to art, only music was thought to contain the element of time. Even film was attributed to the visual arts, even though like music it is a time and linear medium. Earlier, time was considered inaccessible to the visual arts. However, already Kandinsky saw that time in painting had much in common with

³⁰ R. Kapuściński, *Heban*, Czytelnik, Warszawa 2000, p. 21.

time in music: *The time element is generally more visible in a line than in a point – the length stretches out in time. Furthermore, tracing a course of a straight line differs in time from that of a curved line, even when both lines are equally long; the more mobile the curved line, the longer it extends in time. The temporal capabilities of the line are therefore different. The measure of time embodied in the horizontal and vertical lines is, even when their lengths are equal, inherently tinged in a different way. Perhaps in fact it is even about different lengths (...). In linear compositions, therefore, we must not disregard the element of time, and in the teaching of composition it must be subjected to careful study.*³¹

He also wrote elsewhere: *One could even argue that in music the line has the greatest possibilities of expression. It develops there both temporally and spatially, just as in painting [...]. The gradation of dynamics from pianissimo to fortissimo can find its expression in the increasing or decreasing sharpness of the line or in the degree of its brightness. The pressure of the hand on the violin bow corresponds exactly to the pressure of the hand on the pencil. It is particularly interesting and significant that the graphical image of sounds in use today, the musical notation, is nothing but a diverse combination of points and lines. The time value of sounds is read there solely on the basis of the color of the points (white and black) and the number of flags (lines) at the top of the note. Similarly, the pitch of notes is measured in lines, taking five horizontal lines as the basis.*³²

With the development of technology and art, artists began to discover new possibilities to create and freely approach the element of time. Today, music no longer has to mean a linear composition subject to rules. Like other fields of art, it has liberated itself from the old rules and divisions.

³¹ W. Kandyński, *Punkt i linia a płaszczyzna*, PIW, Warszawa 1986, p. 104.

³² Ibidem, p. 106.

IV. The motif of line on the example of selected works by Paul Klee, Waclaw Szpakowski, Edward Krasiński.

A geometric line is invisible. It is the trace of a moving point, the effect of its movement. It arises from motion by destroying the point's state of inertia, its absolute resting state, and thus by shifting from the state of static to dynamics. The line is thus the opposite of the greatest praelement of painting – the point.³³ – wrote Kandinsky in a chapter dedicated to the line.

The force that pushes the point forward shapes the line. Thus, a line is a movement potentially contained in a work of art. Through tensions and directions it takes different forms and affects the viewer in different ways. Due to the fact that the motif of a line is my "leitmotiv", I wanted to look at it a little more deeply, on the example of selected works by Paul Klee, Waclaw Szpakowski and Edward Krasiński.

A straight line is *the most sublime form of the possibility of movement to infinity³⁴*, and its expression is lyrical. In contrast, broken lines, arches are "hotter" because of tensions and thus perceived as dramatic.

For the painter Paul Klee (1879-1940), a line was a trace of a moving point, containing movement and capable of expressing its different variations, introducing rich narrative content into a painting. In *Schöpferische Konfession*, from 1920, the artist gives a concrete example of this. A continuous line suggests setting off. *After a short time stop, breath (an interrupted or at several stops, a dashed line). A look back at how far we have already come (backward movement). We consider a path here and there (lines interlacing). The river gets in the way, we use a boat (wavy movement). Further upstream there would be a bridge (a series of curves). On the other side we meet a companion who has a similar goal and is also pursuing deeper cognition. At first there is a joyful agreement (convergence of lines),*

³³ Wasyl Kandynski, *Punkt i linia a płaszczyzna*, translated by Stanisław Fijałkowski, Warszawa: PIW, 1986, p. 55.

³⁴ *Ibidem*, p. 56.

*gradually divergences appear (independent guidance of two lines). Some excitement on both sides (expression, dynamics and psyche of the line).*³⁵

According to the painter, lines can express movement, suggest people he meets, objects and can be the equivalent of mental states. For this to happen, however, the viewer should adopt an open attitude and substitute viewing the painting with a single glance with reading it as a written text.

Also for Waław Szpakowski (1883-1973), a pioneer of geometric abstraction, who should be mentioned in the context of line, an overall viewing of works of art would be reduced to a search for aesthetic sensations only, and thus to a superficial perception of the work and missing its inner content out. His flagship project "Rhythmic Lines" was created as a result of the combination of abstract art, music and mathematics. It shows the relationships and closeness of these seemingly distant fields. The minimalist and very pure compositions by Szpakowski might seem to have been made in complete detachment from reality but when we take a closer look at the process of their creation, from sketches to drawings, enriched with records of impressions and theoretical reflection, we can realize that the path towards simplified abstraction was a way of exploring the surrounding reality, observing it, noting shapes present in architecture, nature or human faces. As Elżbieta Łubowicz noted: *Szpakowski's drawings, built from a continuous line with an intermitted beginning and end, had the character of modules with the possibility of continuing them by reproducing them over and over again. They were then an ornament: a traditional form of applied art, known to human civilization since the most ancient times.*³⁶

Elsewhere, Łubowicz put it this way: *Waław Szpakowski's linear patterns use the form of an ornament to show through it a mysterious order hidden in the depths of reality, under the surface of its apparent chaos. From the rhythmic life processes that recur in nature, from the phenomena of nature manifested in shapes and sounds (air vortexes in cyclones, vibrations of telephone wires in various conditions, the forms of fir branches, tree rings), and from the elements of culture*

³⁵ P. Klee, Wyznania twórcy, [in:] *Artyści o sztuce. Od van Gogha do Picassa*, selected and edited by E. Grabska i H. Morawska, warszawa 1963, p. 297.

³⁶ E. Łubowicz, „*Waław Szpakowskiego obrazy czasowe*”, [in:] Waław Szpakowski, *Linie rytmiczne*, katalog wystawy, Wydawca Ośrodek Kultury i Sztuki we Wrocławiu, 2016, p. 9.

*(joints of wooden beams, ornaments of houses and churches), he derived a line that, in the unpredictable turns of its course, leads to a regular, extremely precise and harmoniously beautiful structure.*³⁷

The artist also consistently observed the changing weather. His drawings and sketches even include studies of atmospheric currents or the presence of carbon dioxide in the atmosphere. In addition to information about storms and cyclones, Szpakowski also noted information about sounds. Below there are notes from January 28, on the fifteenth page of the diary for the years 1902-1907: *snow clouds, smoky sky, cirro stratus. According to my board there was a cyclone on the 26th - 27th, marking its path from the evening of the 27th to the afternoon of the 28th. (...) In the evening the stars are faintly visible through the covering layer, silence. The following day a storm (the direction of the wind is the same as I expected). After the storm was over, the next day heavy clouds (exceptionally), wires a little (...)*³⁸

Rhythmic lines can be seen as an image as well as perceived as sound. The artist himself treated his linear drawings like musical scores, but what he had in mind here was something more than a non-standard notation of a melody or a translation of one medium into another. Today, this approach is no longer questionable. Szpakowski's works have been used in this way at numerous exhibitions, to mention just the most recent ones, such as "Prototypes 02: Codex Subpartum" at the Museum of Art in Lodz in 2020³⁹, or the monographic exhibition "Wacław Szpakowski (1883-1973). Rhythmic Lines" at the Wrocław City Museum in 2016, where they were reenacted by violinist Barbara Konopka.

As an interdisciplinary artist, Szpakowski did not set any boundaries between the fields of art and science, since he was perfectly well versed in the world of architecture, in which he was involved, in the world of music, in which he was interested, as well as in the world of meteorology, which he studied. It is very

³⁷ Ibidem, p. 10-11.

³⁸ <https://www.facebook.com/muzeumsztuki/photos/a.158552324204738/3846931622033438/>
[access: 12.02.2021]

³⁹ During the exhibition *Prototypes 02: Codex Subpartum*, using a microphone tube, trombone and voice, Barbara, Kinga Majewska, Michał Libera and Konrad Smoleński sound-acted Szpakowski's work: From Series A: A1, from 1930.

interesting that Szpakowski's art is often referred to not as abstract art but as archaic art.

Getulio Alviani stated that *Szpakowski's work is completely timeless – suspended and aseptic, it could be the artwork of the Egyptians, Greeks or Mayans. It has the spirit and essentiality of ancient writing, whose texts were hidden behind austere and dahed lines.*⁴⁰ Assuming this reference to be correct, we could also identify the artist's attempt to develop a certain pre-language by means of the line.

As Jakub Gawkowski put it: *Szpakowski was interested in the invisible rhythms that hold the world together, gleams of order. They can be seen in the phenomena of nature and the ways in which life is organized. He explored these issues during his journeys. Their abstract language suggests the existence of a reality that is difficult to express in words.*⁴¹

Just as for the abstractionists of the early 20th century, the most important painterly issue was to compose a painting from non-representational forms instead of figurative ones, for Szpakowski the essence was to visualize already existing structures, but in a simplified manner. As Elżbieta Łubowicz wrote: *Therefore, the abstraction he arrived at has more to do with visualizing structures discovered by natural scientists than with solving the problems of painterly, graphic, or drawing composition.*⁴²

Another Polish artist who explored the metalanguage of the line was Edward Krasieński (1925-2004), one of the most important protagonists of the Polish neo-avant-garde of the 1960s and 1970s. The blue line became the signature feature of Krasieński's art, but most important was his creative attitude towards reality. A stance that *expressed itself through life in art*⁴³, the ability to subtly question traditional forms of art and its essence. In 1968 Krasieński began marking space by placing Scotch blue tape at a height of 130 cm. The first time he did it was at his

⁴⁰ G. Alviani, *La linea continua*, recenzja z wystawy Wacław Szpakowski (1883-1973). *Nieskończoność linii* w Wilhelm-Hack-Museum w Ludwigshafen, Niemcy, „Flash Art.”, Nr 178, październik 1993.

⁴¹ *Notes ryski. Śladem linii Wacława Szpakowskiego*, folder wystawy, Muzeum Sztuki w Łodzi, p. 1.

⁴² E. Łubowicz, *Wacława Szpakowskiego obrazy czasowe*, [in:] Wacław Szpakowski, *Linie rytmiczne*, katalog wystawy, Wydawca Ośrodek Kultury i Sztuki we Wrocławiu, 2016, p. 9

⁴³ <https://culture.pl/pl/tworca/edward-krasinski> [access. 12.02.2021]

home in Zalesie Górne, near Warsaw, where he taped several tree trunks and two girls in this way.

This blue stripe (Fig. 7), with which Krasieński later marked his "spiritual circle," later appeared in various places. It could appear on the walls of private apartments, studios, in cafes, in a butcher's shop, on furniture, it could encompass objects hanging on the walls.

Ewa Gorządek wrote: *The blue stripe "reveals" the wall – it does not build it or create it, but it reveals, exposes the reality of the "unseen" wall.*⁴⁴ The artist himself did not see philosophy in this action, but more a Dadaist joke.

*It shows up on everything and I get everywhere with it. I don't know if it's art. But it's definitely Scotch blue, 19mm wide, length unknown – he said.*⁴⁵ As can be seen in the examples cited above, the line in visual art can introduce rich narrative content into painting (Klee), serve to visualize already existing structures (Szpakowski), delineate a "spiritual circle" of people and objects, or simply be "blue scotch tape" (Krasieński).

⁴⁴ <https://culture.pl/pl/tworca/edward-krasinski> [access, 12.02.2021]

⁴⁵ <https://pl.naszwybir.pl/edward-krasinski-niebieska-linia-lucka-warszawy/> [access: 12.02.2021]

V. Analysis and description of the works called *auditive images*.

“auditive images”

list of works

paintings:

(without title) nine sketches, 2019, acrylic on chalky paper, 30 x 42 cm
photo Jerzy Grzegorski

Notation 01

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 02

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 03

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 04

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 05

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 06

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Notation 07

2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Vinyl record 01

2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski

Vinyl record 02

2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski

Vinyl record 03

2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski

Vinyl record 04

2019, oil, canvas on HDF board, Ø 30cm

Vinyl record 05

2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski

videos:

score 01, (loop), 2020

a(...)a(...)a(...), (2'52"), 2020

walking the Line, (4'08"), 2020

score 02, (4'34"), 2020

The concept for my doctoral dissertation developed through a long-term process, full of exploration, trial and error, dead ends and inspiring clues. I came across many realizations dealing with similar problems. My idea for a sound installation treating the canvas as a membrane in loudspeakers, vibrating in response to my voice, turned out to be too analogous to Katarzyna Krakowiak's installation "Powstanie i upadek powietrza" (The Rise and Fall of Air) (2013) at the Zachęta National Gallery of Art, where the canvases on the walls vibrated under the influence of appropriately high sound frequencies. Walking through the pavilions of the last edition of Documenta in Kassel, Germany, in 2017, I also discovered works close to my search, created by Alvin Lucier, in which paper resembling carbon paper is pulled over stretchers, moving under the influence of micro-mechanisms fixed under the stretcher, making delicate sounds being the result of this movement.

The search also led me to an experiment, which is worth mentioning at least because of the money I spent on it, buying twenty subwoofers and engaging an electronics engineer to combine them all into one "organism". I was preoccupied with cymatics⁴⁶ for a few months. At some point, however, I realized that I had "come up against a wall". The paint was indeed "jumping", but not the way I had imagined and not under the influence of my voice, but only under the influence of operating at very low frequencies. The effects were limited and seemed meaningless to me. I probably believed too much that with electronics I could quickly achieve a spectacular effect. Perhaps in the future I will use the remaining electrical system for other work.

In addition to my adventure with cymatics, I also went through a phase of experimentation with the cell phone, a phase of performances made for the camera, and a phase of construction drawings of devices that would be used in these activities. I felt, however, that I needed to base my actions on a coherent concept in order not to "drown" in an array of possibilities.

⁴⁶ Cymatics – the science relating to the shape of acoustic waves. Patterns are usually obtained by putting liquids, colloids or solids into resonance. The shapes of the patterns depend on the frequency of the sound. [Wikipedia; access: 09.08.2020]

I decided to start the whole process over again, focusing on choosing what would be the so-called root around which I could boldly create.

I am glad I made such a decision in terms of setting boundaries for myself, because otherwise I could have easily got lost in the opportunities offered by art and modern tools.

At home, my husband and I listen to music either from CDs, vinyl records, or sometimes cassettes. It is fascinating that thanks to these media, playing music has become widely available. Of all the media, I was most enchanted by the vinyl record. This black, round record, with a diameter of up to 30 cm, with analog sound recording written in a spiral groove, looks simply phenomenal under the microscope. This graphic trace of sound recording in the form of lines or grooves became the basis for my artistic experiments. Photographs found on the Internet, zooming in on the appearance of the black disc up to 1000 times, turned out to be extremely inspiring to create a series of works. I just needed the right tools to interpret them. (Fig. 8-10)

It was also the first time I had approached painting in such a conceptual way. Perhaps it was influenced by my performance practice (which I have been doing since 2013), which taught me to anticipate my actions, for example, by trying out in advance the props I plan to use during the action, checking their durability to make sure they would not break down too quickly, etc.

As a result, I have created two collections of paintings, a series of works on paper, 4 video works, and paintings-objects.

First collection

I resigned from the first collection, which was created in the summer of 2018, because it turned out that the use of a 1.5 m wide brush resulted in paintings that formally resembled those painted by James Austin Murray. In my works of 120 x 150 cm format, there were too many analogies with the paintings of the American whose work was introduced to me by my supervisor, Professor Piotr Stachlewski. I really regret this because I liked those abstractions built with planes meeting together, sometimes crossing each other sharply, sometimes blending into each other, swelling from the painting gesture and the energy accumulated in them.



One of the paintings from the rejected collection, oil on board, 1.20 x 150 cm, photo Jerzy Grzegorski (the photographs illustrating this text were taken outdoors in daylight).

It seems that a limited number of effects can be achieved with thickly applied black oil paint and a long brush.

Second collection

So after a few months, another series was created: seven paintings of 86 x 110 cm format, painted in black acrylic on primed canvas. This collection of works was preceded by a series of 30 x 42 cm sketches, nine of which I also included in the doctoral collection.

The works are smaller in size, when compared to the first series, and I have also changed the technique to acrylic painting, as I was already pregnant when I created them, and painting with anything other than water-based paints in this state is simply harmful.

Many ideas were not feasible due to limitations caused by my condition and the size of the canvases lying on the floor. Another complication was the large amounts of water that at times I was pouring onto the canvases, which made me actually slide on the floor.

The final appearance of the works is the result of multiple attempts on sketches on chalky paper. I painted on white primed canvases using a 30 cm wide flat brush and a floor brush with tough artificial bristle. I also used the brush I got for the first series of works, with the oil paint already dried on it.

In these works there is an illusion of space which, apart from the directions marked out by lines, is built up by the physicality of black paint and its characteristic of attracting light. This makes the paintings look as if they were painted using not just one color, but many, oscillating between white and black, with different shades of gray. It all depends on the angle of light and the amount of paint applied. In one of the works the paint is thickly applied, in another I used the "wet in wet" technique. I scratched, marked traces with a brush on a substrate wet with water, in others I waited until the primer dried completely or just a little. Sometimes, when I was not satisfied with the final result, I had to wash it all off.

Acrylic paint dries quickly in a dry room, which additionally determined the decisions and pace of the action. A bit like in a performance – also in this creative act "here and now" was important as well as the consequences of the decision I made.

In what way do the presented works relate to the auditiveness posed in the title of the work? I absolutely had no intention of making the paintings literally "sing". In fact, I could call any video work accompanied by sound an auditive image.

Today, at every step we are "bombaraded" with images, sounds, loads of data on TV screens, monitors, phone displays, at home, at work, in public spaces. In this abundance of "everything of everything", I decided to carry out a radical reduction. I chose to abandon the so-called prostheses with which I would be able to talk about audiovisuality not so much in an easy but obvious way, and I reduced my search to the bare minimum – the line. The line seems to best reflect the most important feature of sound, namely its duration in time, continuity.

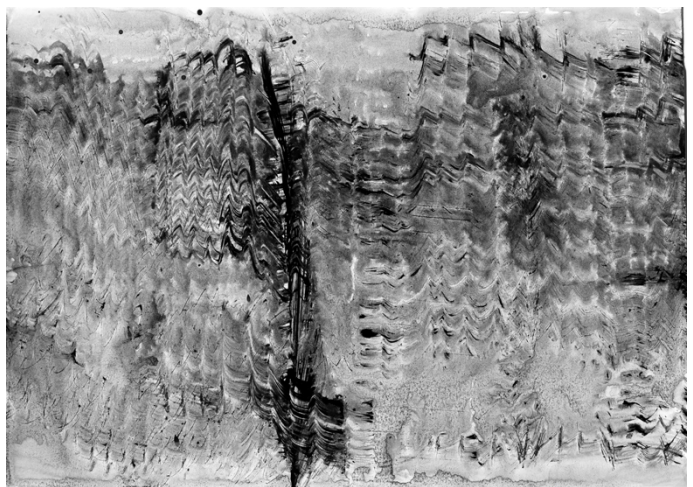
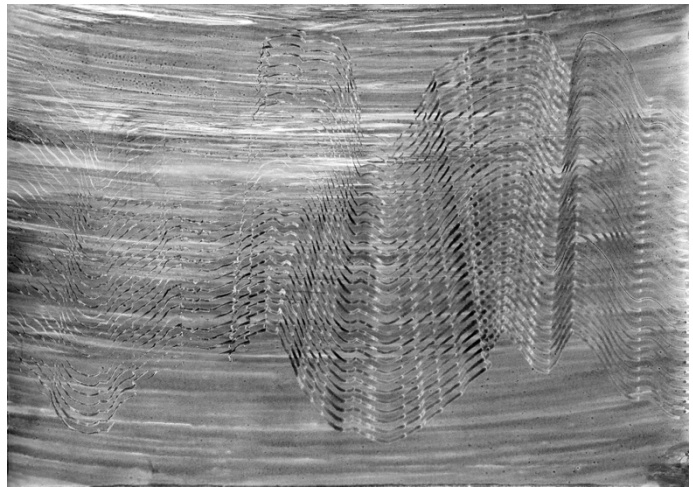
In view of these practices, has sound become the visual art?

I am not talking about the sound situation typical of sound art, where the sound comes directly out of the speakers, but about capturing the metalanguage of the line as a graphic recording of sound. This is precisely the potential for translating each type of art into every other type of art that Kandinsky wrote about:

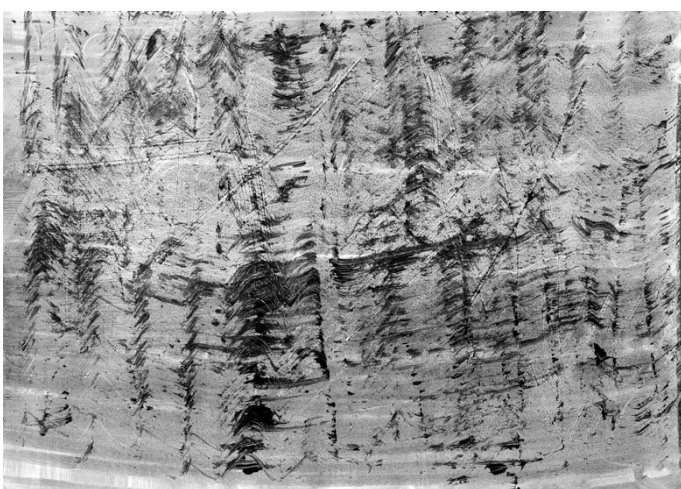
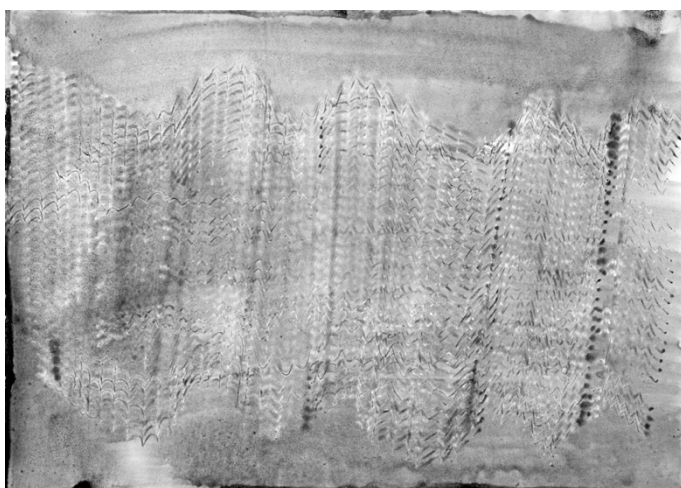
Basically, we should not doubt that every phenomenon of every world admits the possibility of such a transposition revealing its essential content regardless of their place in the hierarchy of values – whether it would be a storm or J. S. Bach, anxiety or a cosmic event, Raphael or a toothache, a 'sublime' or 'mundane' experience.⁴⁷

⁴⁷ W. Kandyński, *Punkt, linia, płaszczyzna*, 1986, p. 106, footnote 25.

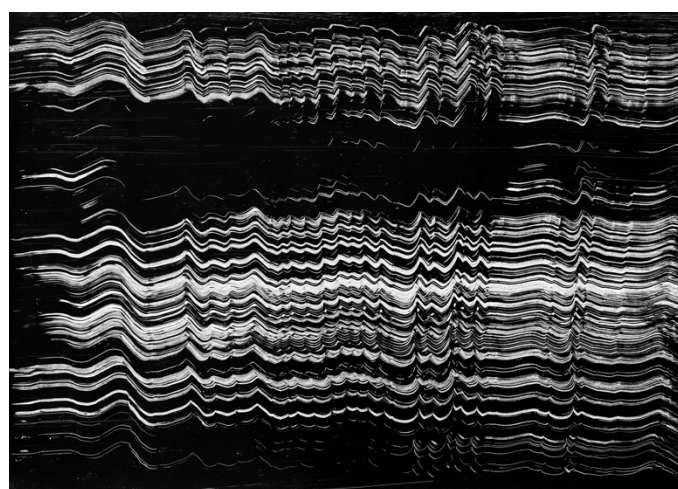
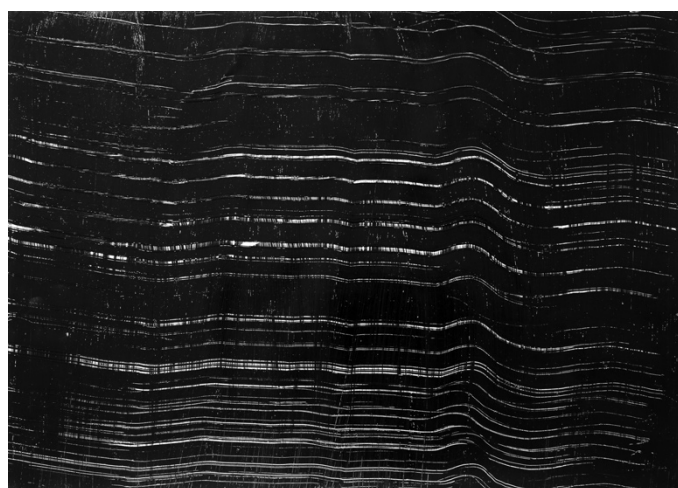
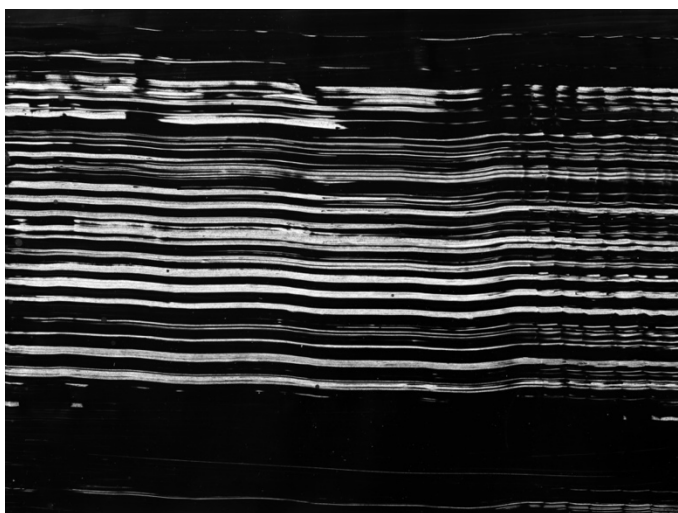
Sketches



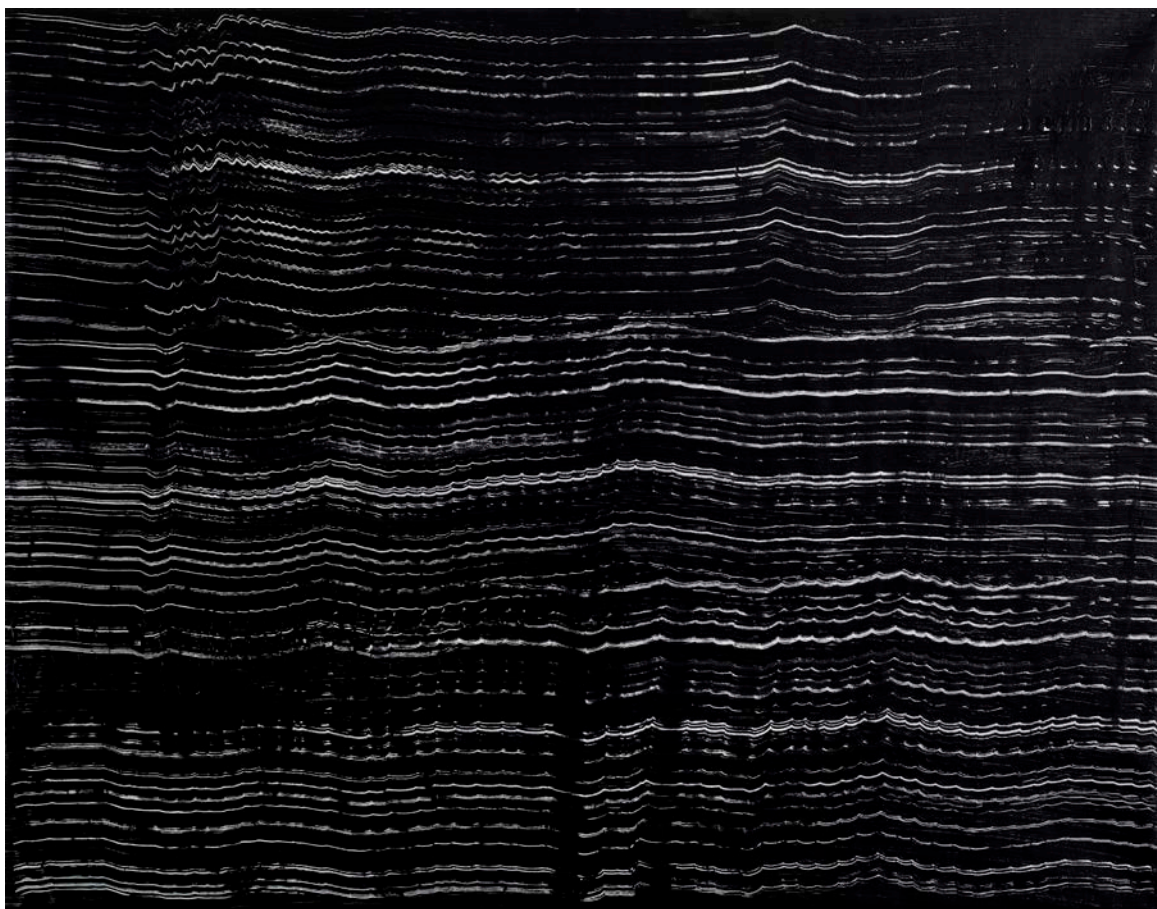
30 x 42 cm
2019, acrylic on chalky paper
photo Jerzy Grzegorski



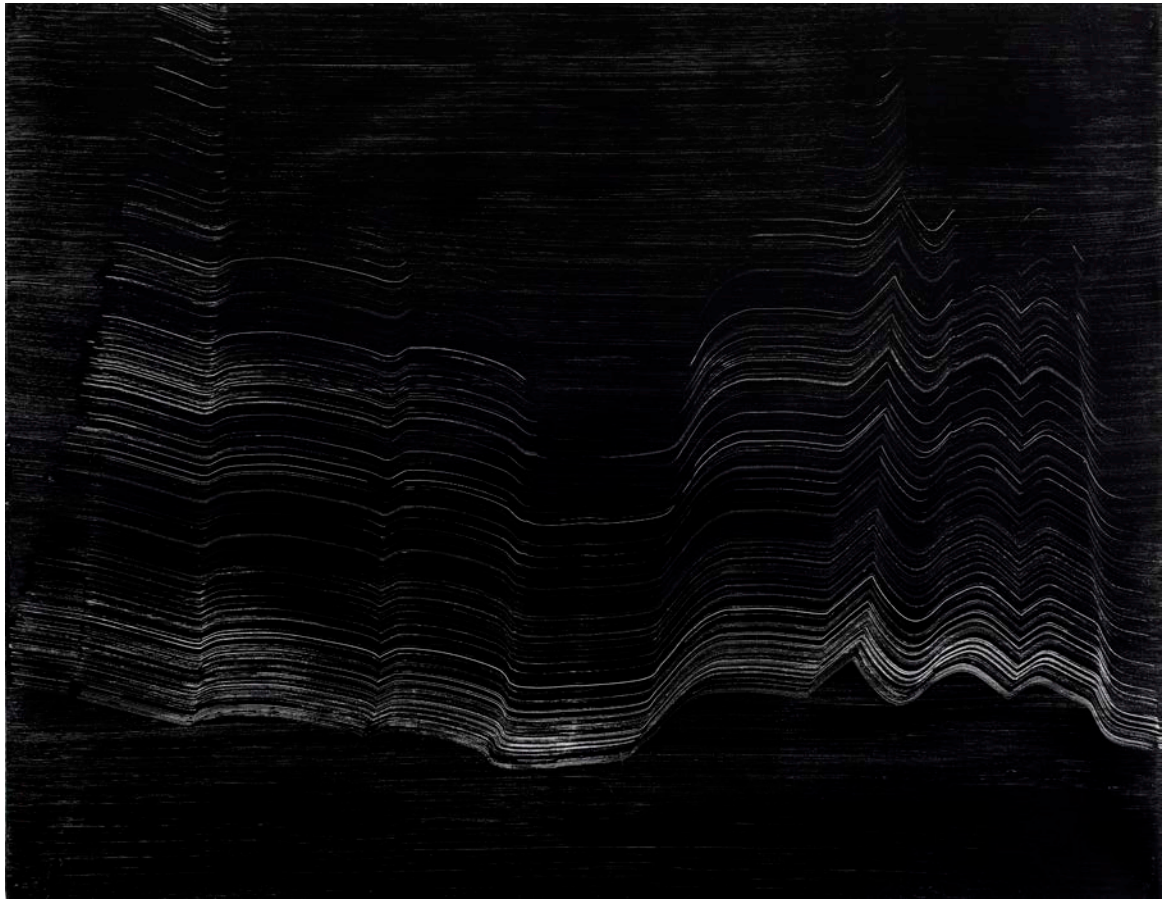
30 x 42 cm
2019, acrylic on chalky paper
photo Jerzy Grzegorski



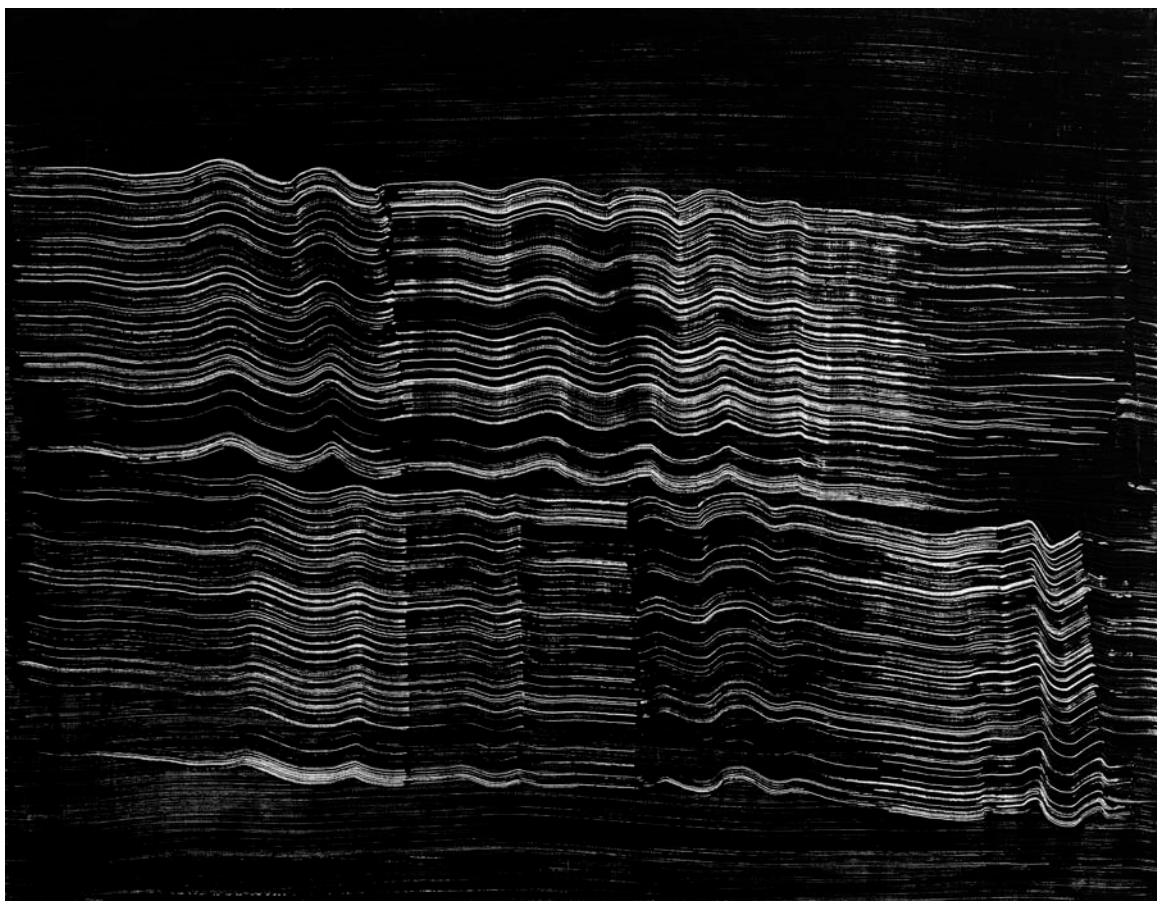
30 x 42 cm
2019, acrylic on chalky paper
photo Jerzy Grzegorski



Notation 01
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



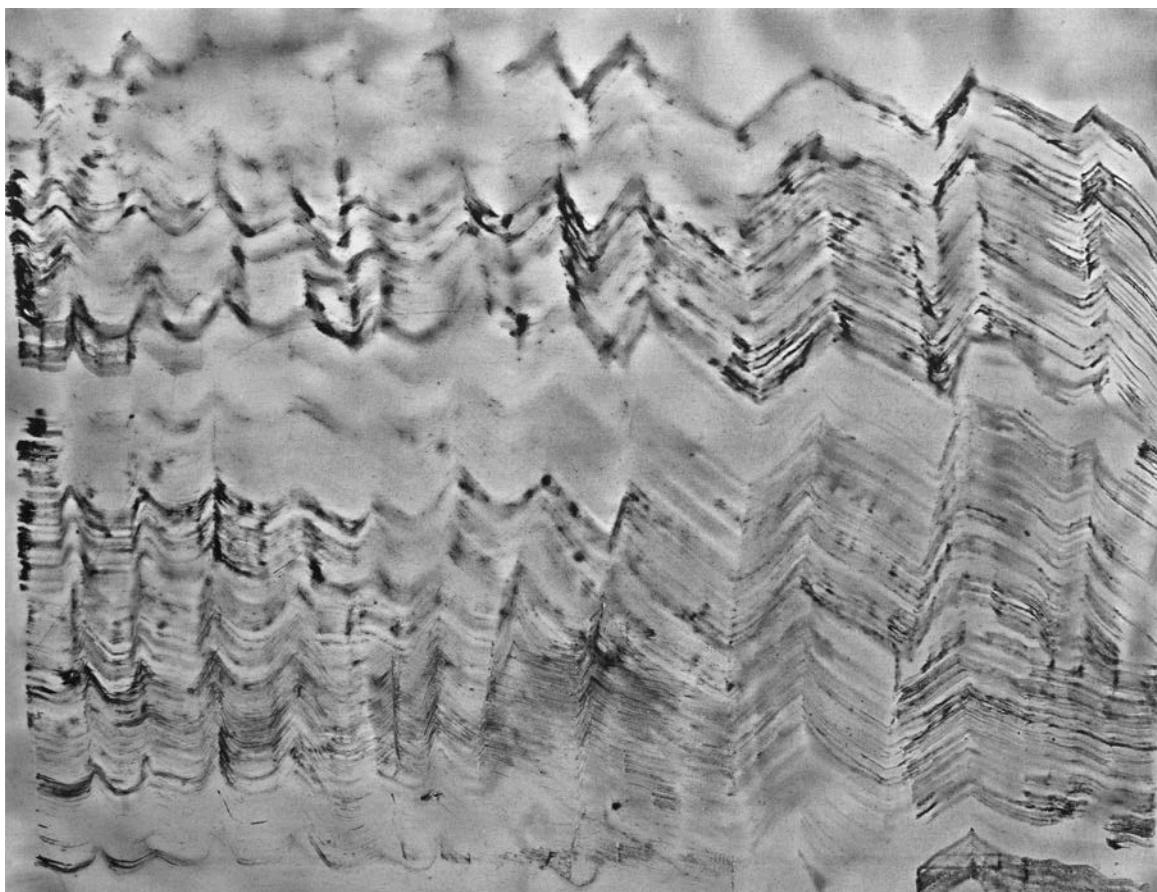
Notation 02
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



Notation 03
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



Notation 04
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



Notation 05
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



Notation 06
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski



Notation 07
2019, acrylic, canvas, 86 x 110 cm
photo Jerzy Grzegorski

Paintings – objects

Another work from the doctoral collection is a series of five vinyl records painted on 30 cm diameter panels glued with primed canvas.



Vinyl record 01
2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski



Vinyl record 02
2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski



Vinyl record 03
2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski



Vinyl record 04
2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski



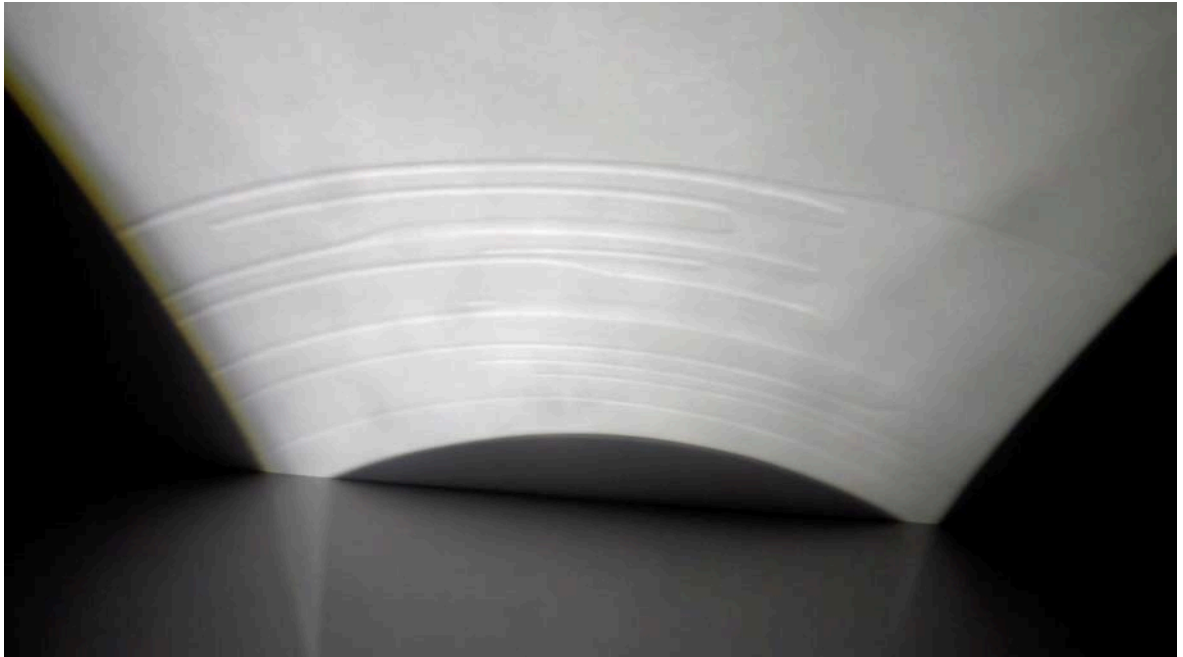
Vinyl record 05
2019, oil, canvas on HDF board, Ø 30cm
photo Jerzy Grzegorski

I decided to listen to the "record" prepared this way on a record player. I wanted to check how the image or even the brush gesture that creates the image would sound.

Yes, it is possible! If the brush gesture leaves crack deep enough, it will mimic well the grooves on a vinyl record where the music is "engraved". It turned out that the records-paintings that I made "flat", with smaller amount of paint, are more sonorous, and the ones with more paint – less, and it is not always just a whizzing sound. You can hear glitches, crackles, there are even sounds that can be interpreted as human voice. The perception is obviously highly subjective. By the continuous movement of the gramophone turntable the whole generates a unique loop consisting of repetitions of the above mentioned effects.

Videos

The motif of lines, this time white on a white background, appears in the installation entitled: *score 01* (2020). The video picture, projected from a projector onto a spherical mirror, is accompanied by a soundtrack. The film is a recording of trickles of white paint dripping slowly. The picture projected on the spherical mirror is reflected on the ceiling under considerable magnification. The lines of the trickles of paint, thanks to this operation, turn from straight lines into arches, intentionally creating a fragment of a vinyl record, this time in white. The projection is accompanied by my voice. In this case, the video has also become a score. The sounds I sing intuitively are my projections of how the form appearing in time could sound. Overlaid on each other they create a minimalistic piece of music.



Film stills from the video *score 01*

Dynamics and movement appear in the video *a(...)a(...)a(...)* (2'52"), 2020.



For this recording I first had to prepare the recording room accordingly. I wanted to create the illusion of space with black lines on a white wall. I departed here from the circular linearity imposed by the vinyl record. The lines merged, met, bent sharply at different angles, indicating successive directions of the space enlarged by this procedure with new dimensions. I also transformed myself into a plane covered with lines, as if I wanted to become this image and sound. Despite the fact that I prepared two adjoining walls by painting and taping them with black and white stripes, in the final recording I used only their fragment.

Additionally, I cut the film's soundtrack into strips. By cutting a fragment of the *a(...)a(...)a(...)* track from the WAVE file every 0.25 seconds, I replaced the cut section with silence. I wanted the line motif to be included in the sound as well. This way, instead of a continuous "aaaaaaa" you hear an interrupted "a-a-a-a". A primitive rhythm was created. Studying the relation between sound, visual form and words, I intended to transfer the conventionally named "idea of strips" to the drawing of the WAVE file, which itself looks very graphic.

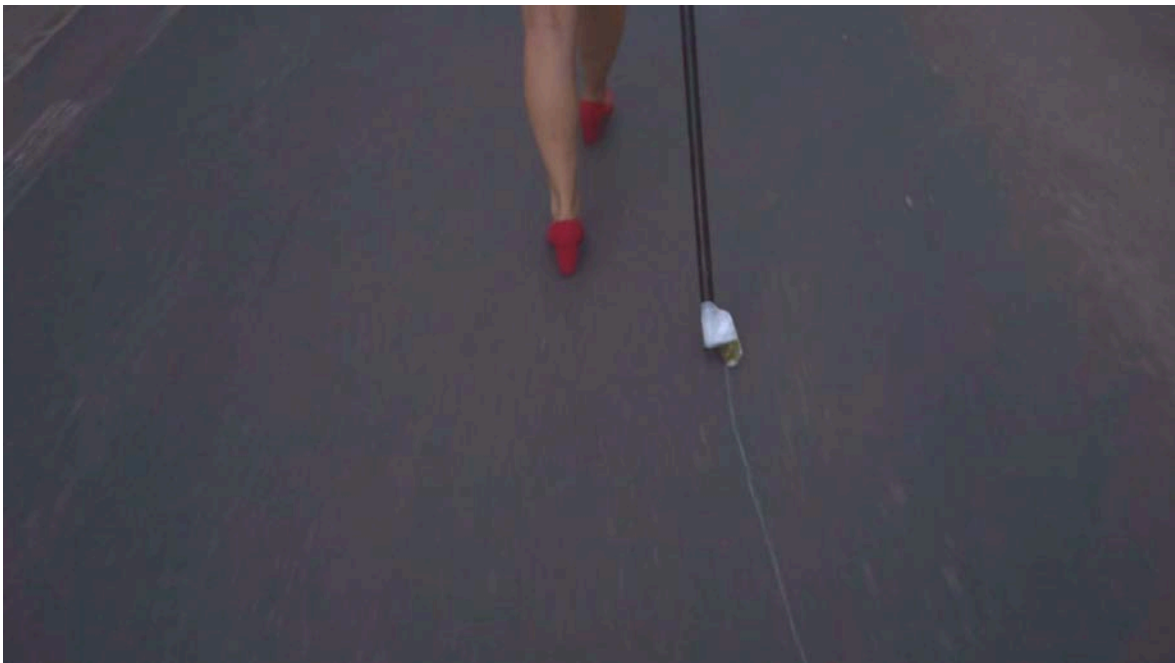


A fragment of the recording of a sound wave from the film (with pieces cut out every 0,25 second).

Watching any movie without sound makes you feel as if you were watching it much longer. This is because one of the senses is overloaded, which is disruptive, and the unpleasant moments seem to have no end. If the music sets the rhythm and pace, then depending on the soundtrack, the same film can be "watched" in the blink of an eye or drag on forever.

This is the only piece in the doctoral collection in which I used such a variety of means of expression: a painting on the wall, a painting on the body, interrupted voice.

In the video work *Walking the Line* (4':08"), 2020 I draw a line on the pavement with a chalk. The chalk is attached to a black stick, and I perform the walk with it in red high-heeled shoes. The camera lens captures only my shoes and the emerging white line on the pavement and the street. The film image is complimented by subtitles that provide information about what is going on around us, but which we cannot see or hear because this work is not accompanied by any audio track in the traditional sense. We can only imagine all the audio situations, prompted by the subtitles, which evoke our sound associations. This is somewhat reminiscent of audio description.



A still from the film *Walking the Line*

David Toop (b. 1949), musician, writer and professor at the London College of Communication, argues in his theoretical work, especially in the book "Sinister Resonance: The Mediumship of the Listener", that seeing is a kind of subjective hearing. Sound as a temporal phenomenon is able to add multidimensionality even to two-dimensional images.

For example, looking at Jan Vermeer's "The Milkmaid" and observing her motion of pouring milk from a clay jug into a bowl frozen in the painting, we will hear the very sound of pouring. Perhaps there are other people in the room, perhaps children who are about to get their milk. Can we hear them laughing or crying? Following this pattern of "hearing," we can imagine the bustle going on outside the window, perhaps the shouts of vendors from the nearby market. Or we might just hear the sound of milk pouring, echoing off the walls of the room? This image, like any other, is therefore only seemingly noiseless.

In my work "Walking the Line" I wanted to draw attention to this aspect of hearing that moves our auditory imagination when we look. Is sound that is not an acoustic wave less real?

Ludwig van Beethoven⁴⁸ (1770-1827) was deaf while composing the 9th Symphony, his most outstanding work. However, we cannot say that he knew its sound worse than the listeners.

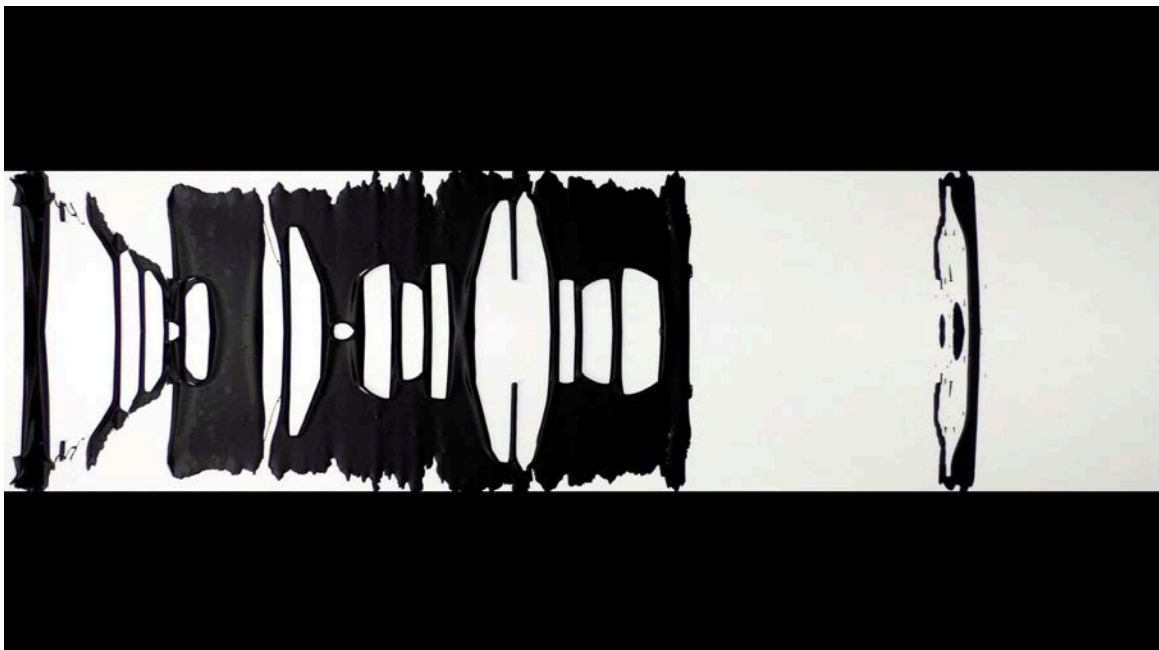
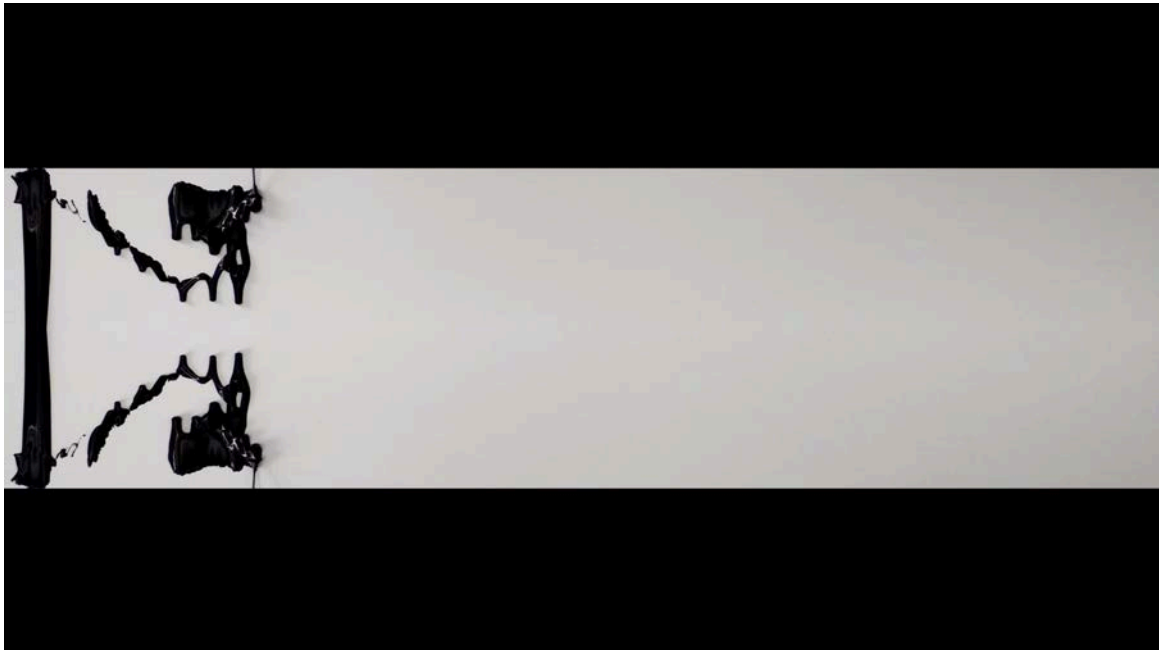
As Walter Jackson Ong wrote: *Sight isolates, sound incorporates. Whereas sight situates the observer outside what they are looking at, at a distance, sound pours into the listener [...]. At any given moment, vision reaches the human being from one direction; to look at a room or a landscape, I must move my eyes from one to the other. Yet when I listen, I receive sound signals simultaneously from all directions at once: I am at the center of my audible world, which envelops me [...].*⁴⁹

For the sake of my next video "score 02" (4'34"), 2020 I played the role of a composer, inviting three musicians. I wanted them to treat my video work as a score and record the music, "reading" it. I asked them to make two recordings: one during the first screening of the video, so as not to lose the spontaneity, and one after a short visual analysis. My initial assumption was that I would combine all the soundtracks into one, choosing only between the first recording and the second one, modulating slightly the volume of each track. I selected the second recording. The video film that was made has become a kind of a score. The picture was cropped from top and bottom to resemble a stave as much as possible in terms of the format. With time, black, dripping paint appears, which is additionally a mirror

⁴⁸ Beethoven, one of the greatest composers of all time, began losing his hearing as a 20-year-old.

⁴⁹ W.J. Ong, *Oralność i piśmienność. Słowo poddane technologii*, transl. J. Japola, Lublin 1992, p. 105.

reflection. Marcin Zabrocki is responsible for the electronic instruments layer, Ryszard Lubieniecki for the accordion, and Julianna Kamila-Siedler for the percussion instruments.



Stills from the film *score 02*

Such a collaboration with musicians has a long tradition. An excellent background of musical-visual collaborations could be seen, for example, in the exhibition

Sounds of the Electric Body. Experiments in Art and Music in Eastern Europe 1957-1984 at the Museum of Art in Lodz (2012), which examined the relationship between art and music in Eastern Europe since the second half of the 1950s. One could say that it was a "golden age" of experimentation, when artists and musicians collaborated on intermedia happenings, and the visual arts intermingled with the musical creations, filling the gallery vanues of the mainstream culture with bold, innovative productions. Since the 1960s, as a result of political events in Europe, the progressive art movement went underground – exhibitions and concerts were held in private apartments, student clubs, abandoned buildings, churches. This underground movement was brilliantly illustrated by another exhibition organized by the Museum of Art in Lodz in 2016: *Notes from the Underground. Alternative Art and Music in Eastern Europe 1968-1994*.

For me personally, this kind of disinterested cooperation, not dictated by any interest in making a career, sounds like a beautiful dream (leaving aside the political aspect, of course). The lack of obstacles, meeting, trust and mutual interaction, as well as adventure, so necessary for creative activity, is probably what has always drawn me towards making attempts at collaboration with artists from other fields.

Music is not music until you hear it, wrote American contemporary music composer John Cage. An analogy can be made that "an image is not an image until you see it."

What are my auditive images? They are some kind of return to something as primal and basic as a line in this drifting, postmodern, overloaded with information and images, extremely complex world. A collection of works created through resignation, experimentation and the need to show similar thought and artistic processes in the body of work of other artists.

This is a rather special set because I do not develop in it purely painterly issues related to composition, for example. The resulting renditions derive from the translation of the first recordings in the history of sound, recorded by specially constructed machines such as the phonoautograph and the phonograph, as well as the photographs of a vinyl record under a microscope into the visual language. The photographs themselves, being extremely graphic, imposed on me the use of

spare means of expression, eliminating all kinds of linear ornamental patterns, leading to the simplicity of means of execution.

The process of creating this collection of works was long, but incredibly purifying.

I have deconstructed sound to build subsequent works, using only what I needed.

VI. Conclusion

Although I use my voice in almost every performance, when I was working on "Auditive Images" I wanted to explore the structure of sound even more, to reach the limits of its form. Fascinated by the sound written in a line on a vinyl record, I decided to develop my search around this very line. I discovered the incredibly interesting history of the phonoautograph and the phonograph, the first devices recording and reproducing sound (only the phonograph), I got to know many archival recordings, including recordings of Graham Bell's voice, restored quite recently with the help of modern digital technology. Undoubtedly, the idea of capturing sounds in graphic form emerged when sound became the "matter" of scientific research. The turning point here proved to be the discovery of the phonograph, which made it possible to create a visual representation of sound.

In literature, I found numerous examples of fascination: first painters' fascination with music, so that they could also start looking in an abstract way and move away from the mimetic representation of the world; then musicians' enchantment with painting, mainly as far as the score was concerned, until I finally reached the mutual interpenetration of these two fields of art.

When describing the works created as part of my doctoral project, I tried to give them additional historical background by delving into art history. It seemed necessary to me. The method I used often allowed me to understand what my subconscious had suggested to me earlier during the process of creation, since many times I acted very intuitively.

I began my work on "auditive images" taking an extremely broad perspective on the subject matter, and I ended up limiting the scope of my research and explorations, first to the line on the vinyl record, and later to the line drawn by the phonograph – the line thus understood as the recording of sound. This resulted in a coherent collection of paintings on canvases inspired by photographs of a vinyl record under a microscope, a collection of sketches, a collection of paintings-objects that can be listened to on a gramophone, and four video works (one of

which is projected on a spherical mirror reflecting the image on the ceiling) in which the sound is composed by me, by invited artists, or is imaginary.

Again, I was taken aback by the old rule: "the less, the more", i.e. the fewer means, tools I operate with, the more satisfied I am with the result.

"Auditive Images" became for me a pure touch of sound, both in a physical sense as I was exploring the structure of a vinyl record under a microscope and in a metaphysical sense, when I was searching for a metalanguage of the line. A painting on canvas was created from the image of sound.

The very structure, shape and linearity of the sound recording made me feel a great freedom and freshness in approaching the topic of my dissertation, despite the apparent limitation of the area of research and exploration. I have been so absorbed by working on the topic that I want to further explore the self-imposed "rigor of subtraction" or "rigor of sound line" in the future. I feel that this path I have taken still has much to offer, perhaps in an even more tool-limited area. I would be eager to try, among other things, to sing out the works of Waław Szpakowski. I will not reveal other ideas. I would not like to see them realized without my personal involvement.

This doctoral collection of works is quite a change in my artistic practice. Previously, aware that there are no longer any ruling stylistic conventions, that all forms, styles and modes of expression are equivalent, I shifted my attention to the question of semanticity. And this, never being constant, changed and updated with the passage of time measured by the development of my awareness and civilization changes.

Here, I chose the path of working on form.

We are living in times full of tension, when nationalist and xenophobic attitudes are on the rise all over the world, the effects of pandemic are dividing society on a class basis, and social media provide an opportunity to manipulate people and highlight contradictions instead of introducing a dialogue. In this stuffy atmosphere of modernity, the language of abstraction seems to me extremely important. It opens a kind of space of safety, creating an asylum where it is still "airy" and where one can feel free.

I can sum up these reflections with one sentence from the summary of my accomplishments, where I wrote that I want to "discover what is already there, not what does not exist". I believe that is what has just happened.

Figures

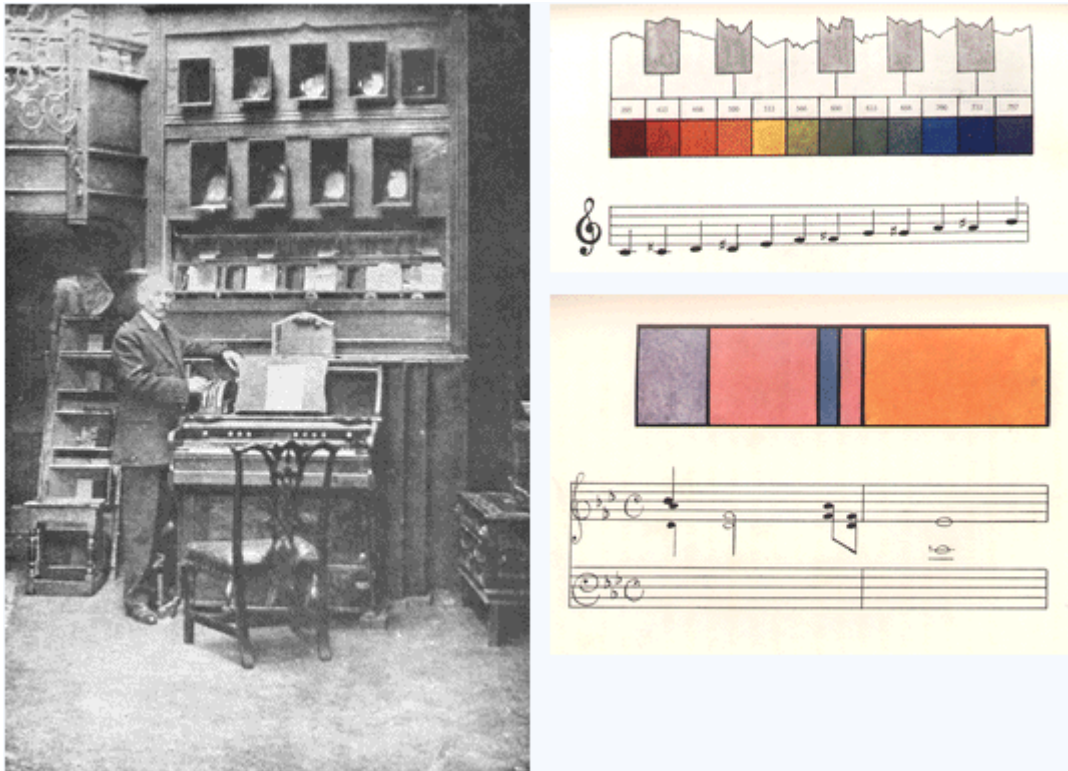


Figure 1: Alexander Scriabin at the light piano.

Source: <http://cmuems.com/2016/60210b/visual-music-synesthesia/>

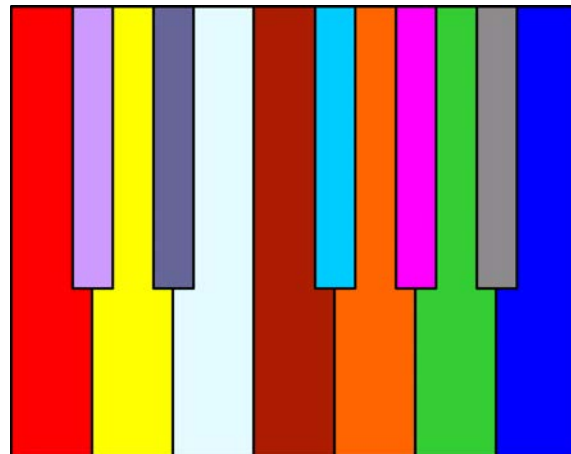


Figure 2: Color assignment of keys within an octave

in the light piano designed by Alexander Scriabin, source:

https://commons.wikimedia.org/wiki/File:Scriabin_keyboard.png

(access: 11.02.2019)

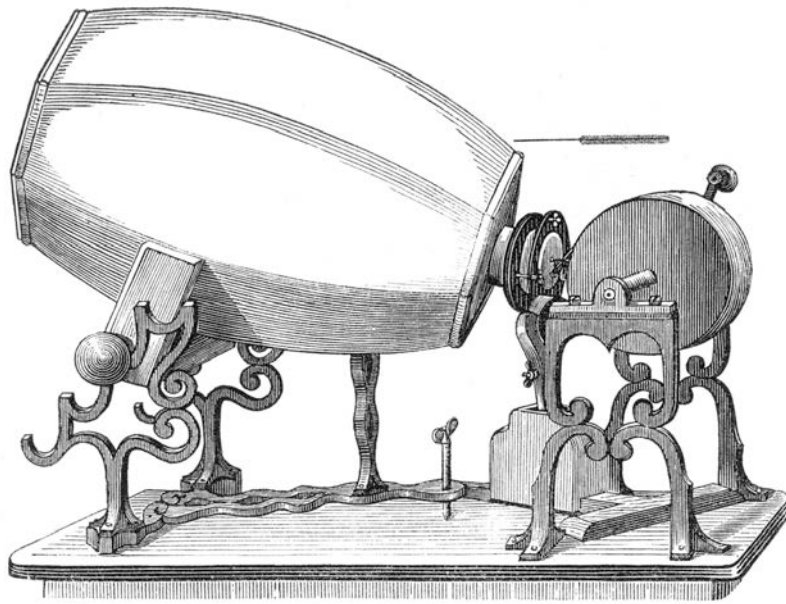


Figure 3: Phonoautograph, engraving, source: <https://rms.pl/baza-wiedzy/1051-krotka-historia-audio-fonograf-fonoautograf-telegrafon-i-gramofon> (access: 17.08.2020)

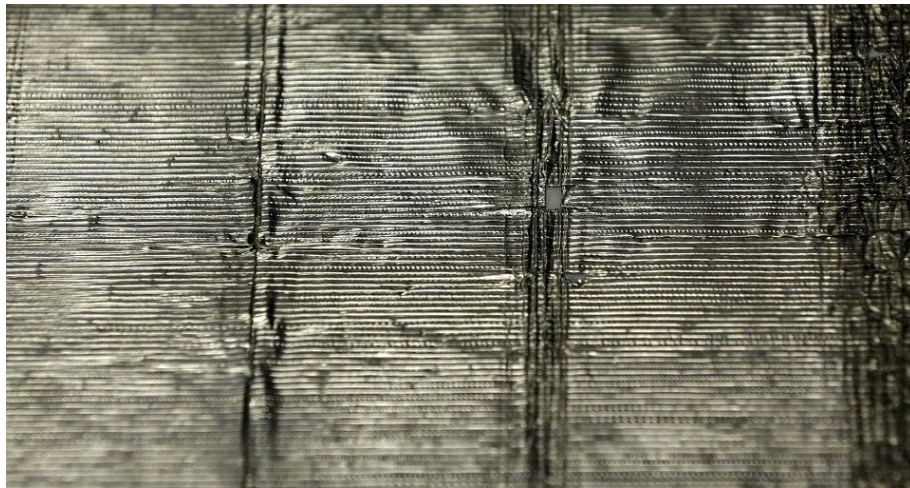


Figure 4: Sheet of tin foil with the oldest recording preserved on it, source: <https://www.tokfm.pl/Tokfm/1,103086,12748526,naukowa-sensacja-odtworzono-najstarsze-znane-nagranie-wykonane.html> (access: 17.08.2020)



Figure 5: Edison posing by his phonograph , source: <https://www.greelane.com/pl/humanistyka/historia-i-kultura/invention-of-the-phonograph-4156528/> (access: 17.08.2020)

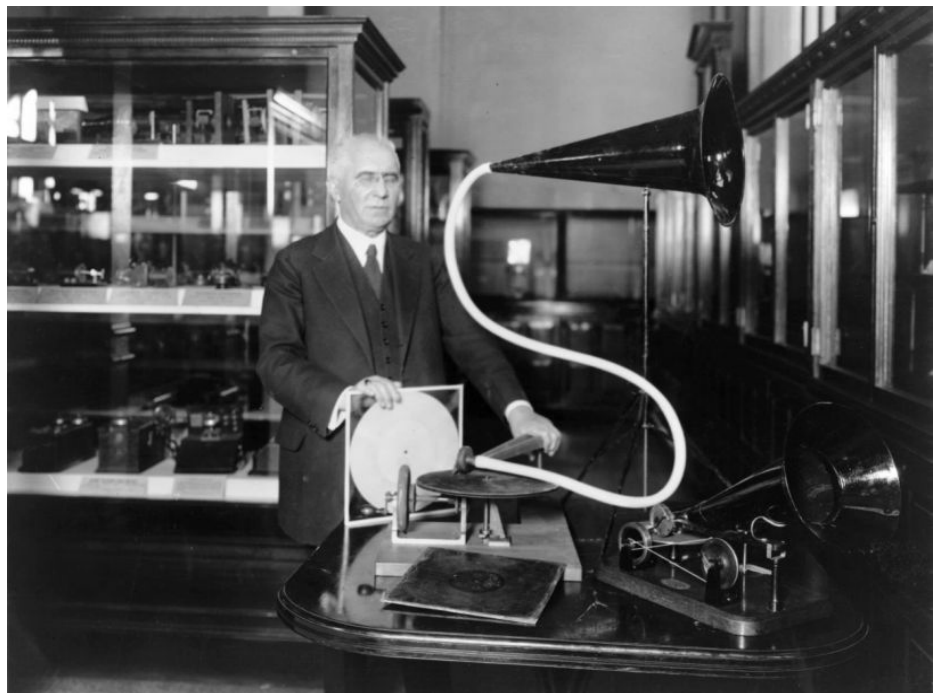


Figure 6: Emile Berliner at the gramophone, source: <http://highfidelity.pl/@main-2794&lang=> (access: 17.08.2020)



Figure 7: Intervention, Zalesie 1968 - Eustachy Kossakowski Archive - Museum of Modern Art in Warsaw, source: <https://artmuseum.pl/pl/archiwum/archiwum-eustachego-kossakowskiego/73/20253>

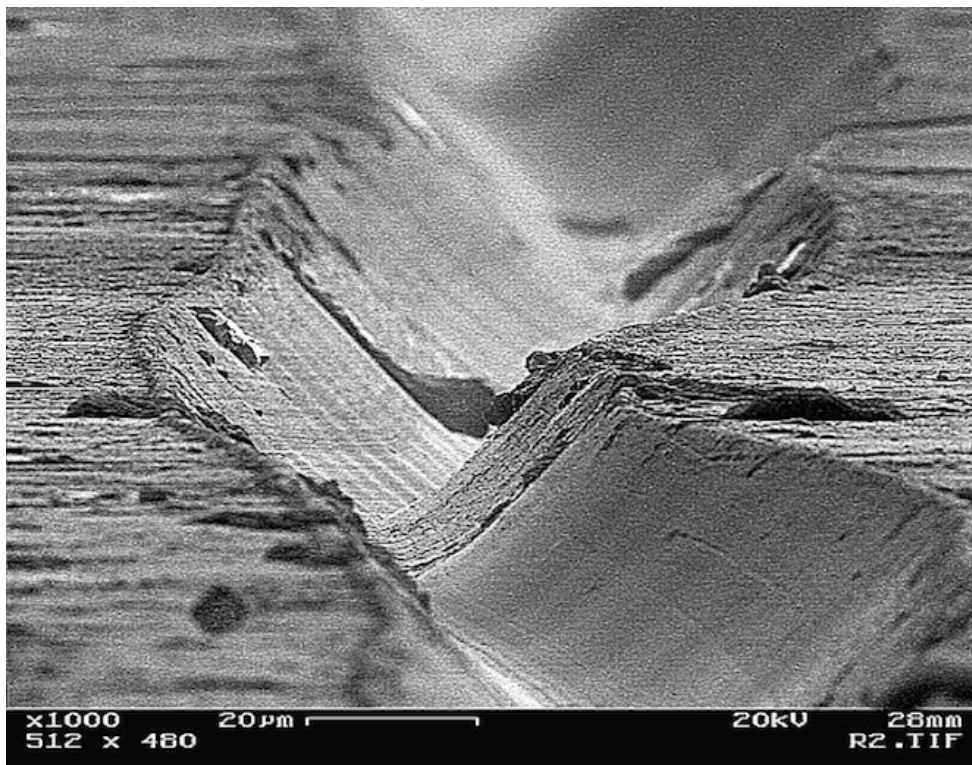


Figure 8: Vinyl under the microscope, source: <https://gadzetomania.pl/26217.obrazy-plyt-winylowych-i-cd-spod-mikroskopu-elektronowego> (access: 18.08.2020)

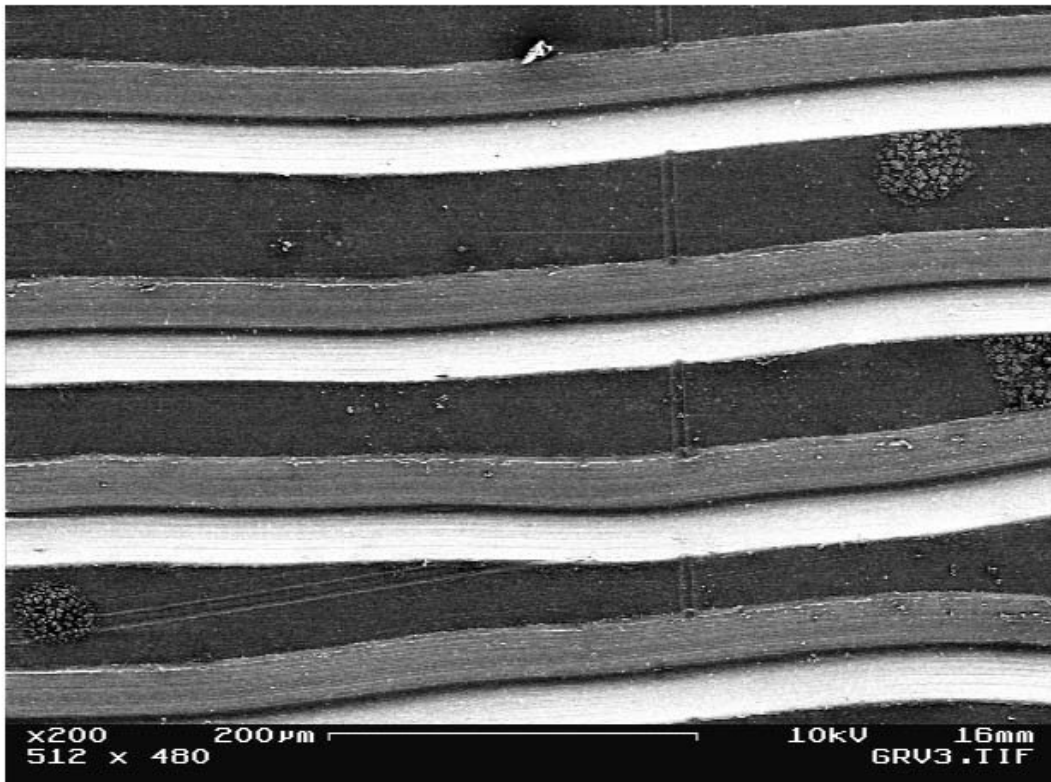


Figure 9: Vinyl under the microscope, source: <https://gadzetomania.pl/26217,obrazy-plyt-winylowych-i-cd-spod-mikroskopu-elektronowego> (access: 19.08.2020)

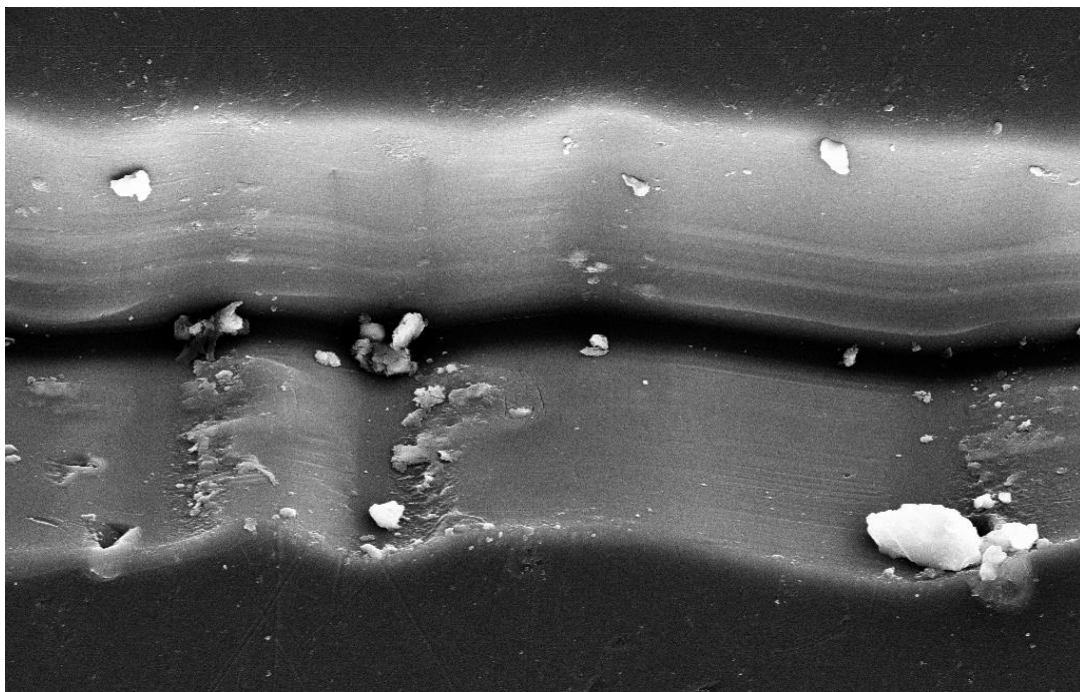


Figure 10: Vinyl under the microscope, source: <https://mrowisko.polsl.pl/blok-kulturalny/oj-zuzywaja-sie-nam-plyty-winylowe/> (access: 19.08.2020)

Footnotes

- 1 Existing from 2011 till 2017 in Lodz.
- 2 The audio-visual composition "*Taking up the Work of Predecessors*" inspired by and based on texts by Władysław Strzemiński was created on the occasion of the 70th anniversary of the Strzemiński Academy of Fine Arts in Lodz. It has been performed twice. Under the link you can see the trailer
<https://www.youtube.com/watch?v=i090xDUV2-8> [access: 07.08.2020]
- 3 The whole composition "*rzeczniepospolita*" can be heard and seen under the link
<https://www.youtube.com/watch?v=LOuH307h7NM&t=3s>. [access: 07.08.2020]
We repeated the composition once again, with a smaller line-up at the opening of the exhibition "*We Successors? Katarzyna Kobro, her influence on the development of fine and design arts in the theory and artistic practice of the Academy of Fine Arts in Lodz*" in 2016.
- 4 Srebrna Armatka Kultury (Silver Cannon of Culture) for the most funky event in the Lodz culture in 2015.
- 5 W. Kandyński, *O duchowości w sztuce*, 1991, p. 62
- 6 From the article *Sztuka konkretna*, cit. after: W. Kandyński [1991], *Eseje o sztuce i artystach*, p. 137.
- 7 W. Kandyński, *O duchowości w sztuce*, 1991, p. 53.
- 8 From the article "Problematyczny" splot muzyki, malarstwa i biografii. Eksperyment Arnolda Schönberga, A. Piekoś, *Quart* Nr 4(42)/2016,
https://quart.uni.wroc.pl/pdf/42/q42_003009_Pienkos.pdf [access: 22.07.2021]
- 9 K. von Maur, *The Sound of Painting. Music in Modern Art*, Munich, London, New York, 1999, p. 41.
- 10 *Raumlichtkunst* was reconstructed in 2012 as a 3-channel video projection, digitizing hand-painted films from the 1920s on 35mm film. Since there are no musical recordings of A. Laszlo, the projection uses music by John Cage and Lou Harrison, with whom O. Fischinger had collaborated since the 1940s.
- 11 Ch. Cox, *Wizualne dźwięki: o partyturach graficznych*, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 240.
- 12 M. Feldman, *The Anxiety of Art*, in: *Give My Regards to Eight Street...*, p. 26, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 211.
- 13 Ch. Cox, *Wizualne dźwięki: o partyturach graficznych*, in: *Kultura dźwięku. Teksty o muzyce współczesnej* [2010], p. 242.
- 14 Teresa Kelm – at Współczesna Gallery in Warsaw (1968, 1970), Wiesław Nowak and Jan Muniak – in Metz (1987) and at the Museum of Art in Lodz (1988), in Eggenberg Castle in Graz (1974) and the Rohan Palace in Strasbourg.
<https://culture.pl/pl/artykul/powidoki-mysli-strzeminskiego-w-muzyce>
- 15 [Speech given at a session at the Academy of Fine Arts in Lodz (then the State Higher School of Fine Arts in Lodz), organized by the Museum of Art in Lodz on 26-27.11.1993].
- 17 Wojciech Bąkowski, Piotr Bosacki and Konrad Smoleński are students of Leszek Knaflewski. In 2015, the Centre for Contemporary Art Ujazdowski Castle hosted the exhibition *Przestrzajanie* (Tuning), which recalled Leszek Knaflewski's oeuvre, unfortunately already posthumously. However, it was not a classic retrospective, but as the text accompanying the exhibition described: "*a symbolic meeting of Leszek Knaflewski with the artists who had a chance to collaborate with him during their studies at the Audiosphere Studio run by him. Knaflewski was not only a charismatic personality, but also an educator who initiated an experimental program of work with the matter of sound in the visual arts and developed an original, intuition-based method of cooperation with male and female students.*"

- He treated them as equal partners in artistic activity, interacting with them but also entering friendly competition. In his view, in order to become an artistic subject, it is necessary to master not only the technique of creating a work of art, but above all the technique of forming oneself.*
- 18 Marek Chołoniewski, syllabus of the course The Art of Sound – intermedia mediation, available at [www.: <http://www.medialarts.pl/download/kadra/skrypty/interakcje/sztuka-dzwieku.pdf>](http://www.medialarts.pl/download/kadra/skrypty/interakcje/sztuka-dzwieku.pdf), [access: 25.03.2019]
- 19 *100% ABSTRAKCJI – Nowocześni w Łodzi 1955 – 1965 (100% ABSTRACTION – The Modern in Lodz 1955 - 1965)*, Łódź, March – April 2004, publishers: Galeria 86, Amcor Rentch. Curators of the exhibition: Janusz K. Głowacki, Grzegorz Musiał quotation after: <http://www.artysci-lodzkie.pl/pl/artysta//andrzej-lobodzinski/> [access: 25.03.2019]
- 20 <https://zacheta.art.pl/pl/kolekcja/artysci/krzysztof-zarebski> [data dostępu: 25.03.2019]
- 21 I write more extensively about this later in the paper.
- 22 The films of Franciszka and Stefan Themerson, *Filmy Franciszki i Stefana Themersonów*, broszura, 2007 <https://pl.scribd.com/doc/17893037/The-Films-of-Franciszka-and-Stefan-Themerson-DVD-booklet-2007>, [access: 25.03.2019]
- 23 Abstract cinema involving the play of melodies, lights, colors.
- 24 J. Młodkowski, *Aktywność wizualna człowieka*, 1998, p. 81.
- 25 J. Ludwiński, *Sztuka w epoce postartystycznej i inne teksty*, p. 48.
- 26 <https://www.spidersweb.pl/2016/04/pierwszy-zapis-dzwieku.html>, [access: 24.02.2019]
- 27 M. Kominek, *Zaczęło się od fonografu...*, 1986, p. 35.
- 28 <https://www.youtube.com/watch?v=xBvHbRjznXM>
- 29 https://gadzetomania.pl/5412.poczatki-fonografii-fonograf-czyli-martwa-droga-ewolucji-cz-1?fbclid=IwAR2xDwyNxiVTngzGf12j4k66zK85iNPwJx_Wmresy74RowrXUUTnaJcYTvc[access: 11.04.2019]
- 30 R. Kapuściński, *Heban*, Czytelnik, Warszawa 2000, p. 21.
- 31 W. Kandyński, *Punkt i linia a płaszczyzna*, PIW, Warszawa 1986, p. 104.
- 32 Ibidem, p. 106.
- 33 Wasyl Kandyński, *Punkt i linia a płaszczyzna*, translated by Stanisław Fijałkowski, Warszawa: PIW, 1986, p. 55.
- 34 Ibidem, p. 56.
- 35 P. Klee, Wyznania twórcy, [in:] *Artyści o sztuce. Od van Gogha do Picassa*, selected and edited by E. Grabska i H. Morawska, warszawa 1963, p. 297.
- 36 E. Łubowicz, „*Wacław Szpakowskiego obrazy czasowe*”, [in:] *Wacław Szpakowski, Linie rytmiczne*, katalog wystawy, Wydawca Ośrodek Kultury i Sztuki we Wrocławiu, 2016, p. 9.
- 37 Ibidem, p. 10-11
- 38 <https://www.facebook.com/muzeumsztuki/photos/a.158552324204738/3846931622033438/>, [access: 12.02.2021]
- 39 During the exhibition *Prototypes 02: Codex Subpartum*, using a microphone tube, trombone and voice, Barbara, Kinga Majewska, Michał Libera and Konrad Smoleński sound-acted Szpakowski's work: From Series A: A1, from 1930.
- 40 G. Alviani, *La linea continua*, recenzja z wystawy *Wacław Szpakowski (1883-1973)*. *Nieskończoność linii* w Wilhelm-Hack-Museum w Ludwigshafen, Niemcy, „Flash Art.”, Nr 178, październik 1993.
- 41 *Notes ryski. Śladem linii Wacława Szpakowskiego*, folder wystawy, Muzeum Sztuki w Łodzi, p. 1.
- 42 E. Łubowicz, *Wacław Szpakowskiego obrazy czasowe*, [in:] *Wacław*

- Szpakowski, *Linie rytmiczne*, katalog wystawy, Wydawca Ośrodek Kultury i Sztuki we Wrocławiu, 2016, p. 9
- 43 <https://culture.pl/pl/tworca/edward-krasinski> [access, 12.02.2021]
- 44 <https://culture.pl/pl/tworca/edward-krasinski> [access, 12.02.2021]
- 45 <https://pl.naszwybir.pl/edward-krasinski-niebieska-linia-lucka-warszawy/> [access: 12.02.2021]
- 46 Cymatics – the science relating to the shape of acoustic waves. Patterns are usually obtained by putting liquids, colloids or solids into resonance. The shapes of the patterns depend on the frequency of the sound. [Wikipedia; access: 09.08.2020]
- 47 W. Kandyński, *Punkt, linia, płaszczyzna*, 1986, p. 106, footnote 25.
- 48 Beethoven, one of the greatest composers of all time, began losing his hearing as a 20-year-old.
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