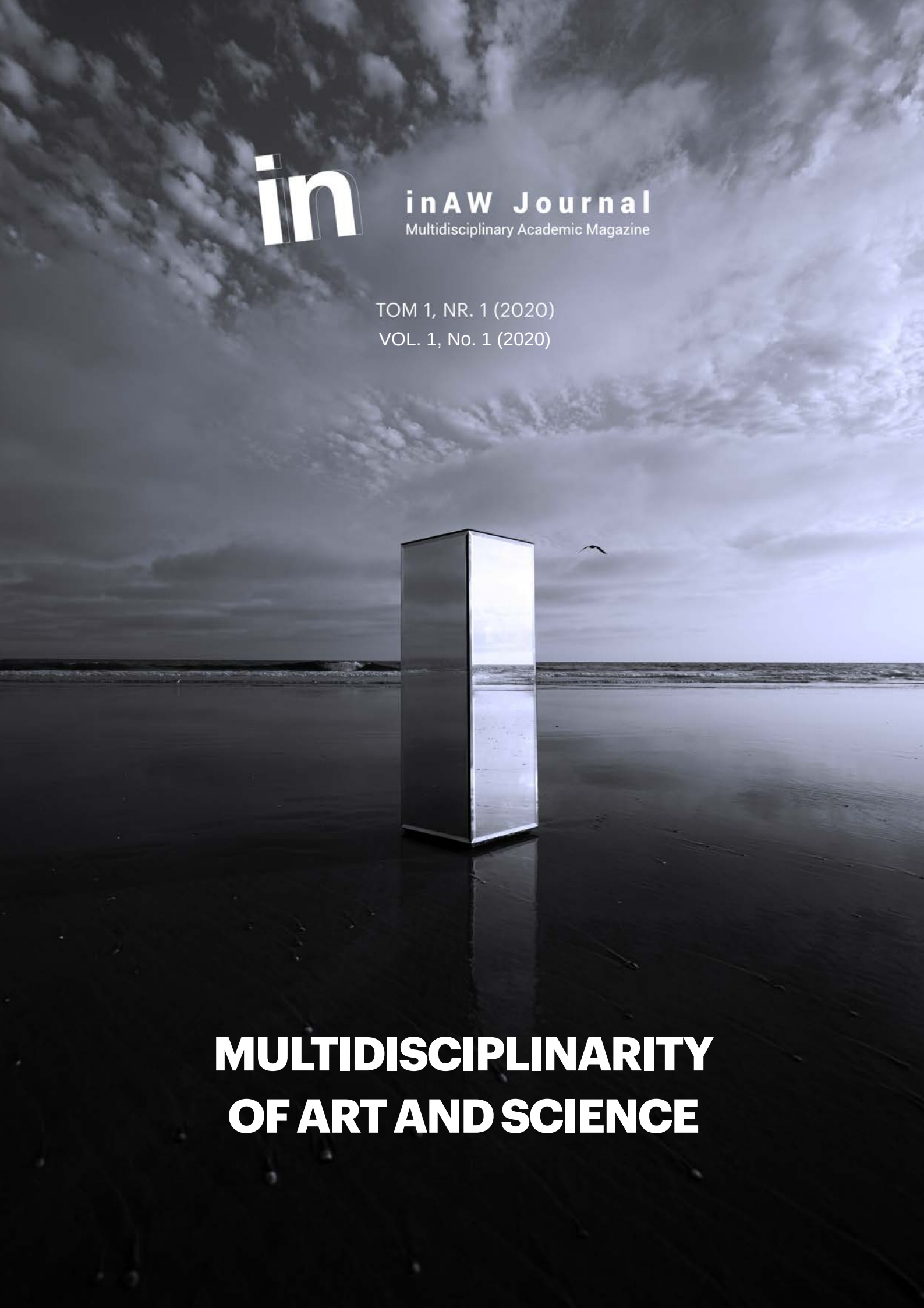

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JOANNA HAŃDEREK

IN FRONT OF OUR EYES

Revolutions-realised

ABSTRACT

This article is an attempt to show how art responds to contemporary problems, to what extent it is able to make the viewer aware of the conditions in which we live and the still developing state of climate crisis. In the article I focus on bioart, presenting selected artists who show the degradation of ecosystems in their works and try to show the relationship between man and nature. Invoking the metaphor of Mother Gaia, I follow the analyses of ecoethics to point out human duties and responsibilities for the current state of affairs. In my analyses, I primarily try to show the artistic rift between art itself and activism, and the role of art in today's crisis-torn world.

KEYWORDS

bioart ; Matka Gaja ; rewolucja ; kryzys ; zmiany ; transgresje

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In front of our eyes

Non-Realised Revolution

The myth of Frankenstein and how it all began

Tissues, stem cells, plasma, blood have replaced pigments, just as the laboratory has become the workshop. Contemporary art has gone beyond the confines of the studio, just as it has gone beyond the confines of our idea of reality. In the 19th century, Mary Shelley posed the question of the limits of human creation. What frightened the romantic writer was, above all, man's scientific capabilities and the blind following of them. Shelley is convinced, which she expresses in her story about Dr Frankenstein, that science can blind us and technological possibilities can turn out to be a dangerous trap. Man assumes the role of god and begins to create without any control, which in the 19th century writer's view is dangerous. In the 20th century, man, still enthralled by scientific reality, despite his reservations and doubts, began to play with science on an unprecedented scale. Bioart is like playing with science and at the same time it is the production of a work of art in visualised artistic expression. The boundaries have been blurred. What goes on in the artist's head can be translated into the analogue and electronic world without limitations. Tissues, stem cells, plasma and blood have ceased to be merely an element of physiology or the research domain of scientists. Artists have entered laboratories.

Art has always offered perspectives of transcendence, first of all of the artist's own abilities, his capacity to perceive and describe the world, then increasingly becoming a transcendence of culture or humanity itself. This was pointed out by André Malraux, who in *Transformations of the Gods* traced the successive movements of artistic possibilities. According to Malraux, neither the anthropologist nor the philosopher is able to describe the world accurately; bound by methodology, the limits of concepts and tradition, they must follow either the classical interpretation of the world (authority), or the concepts themselves and what their research tool allows them to do. The artist for Malraux is a freed man, who in his art - not always consciously - transcends what is imposed on him in cultural narratives[1]. That is why, as Picasso writes in *Supernatural*, he understands certain issues better than an anthropologist, and his „girl with a skipping rope can meet a figurine from a Dogon village"[2]. In this way, the artistic transition also allows for the creation of new qualities, making art neither European nor African, but a new dialogue between cultural worlds.

Transformations of art: attempts to shape cultural narratives

The transcendence of art can simultaneously become transformation. The world in art projects is not so much reflected as created anew. This is why Anish Kapoor, creating *Cloud Gate* or *Sky Mirror*, works between the elements, air, earth, water, inserting new meanings into the space of culture as well as nature, another element which art becomes. The viewer can follow the artist and oppose himself, the habits instilled during socialisation, which separate man from nature in a cocoon of symbolic images. For Ernst Cassirer we will always be in symbols anyway, and through them we will build an image of seeing the world[3]. For Anish Kapoor, everything depends on what exactly we bring into reality. Symbols and images can be turned into a mirror reflecting the world, admittedly still a borrowing, but it turns our gaze in a completely different direction. The viewer of Kapoor's art can, thanks to this very thing, completely lose his or her pre-conceived notions of categories and reality. What was sky is water, and what was earth is air.

The reconfigurations made by male and female artists signify a shift from what 'seems' to be to what is 'impossible'. This is why art can be provocation and revolution. Group's naked bodies Femmen bear witness to this best. Nudity contrasting with a police uniform, a woman armed with

[1] André Malraux, *Antypamiętniki*, transl. J. Guze, Warszawa 1993.

[2] André Malraux, *Przemiany Bogów*, v. 3: *Ponadczasowe*, transl. J. Lisowski, Warszawa 1985.

[3] Ernst Cassirer, *Esej o człowieku. Wprowadzenie do filozofii kultury*, transl. A. Staniewska, Warszawa 1971.

her powerlessness, handcuffed, led out of the space which she had just occupied in a performance. After Femmen's actions, there is usually red paint on the pavement and amazement that one can once again try to oppose what is indestructible from the perspective of tradition: regimes, religious dictatorships or the male-centric structure of our world. Femmen constitute an unfulfilled revolt because they constantly have to repeat the gesture of opposition locked in the servile imperative of masculinity. Just like the nomadic subjects described by Rosi Braidotti, who, analysing contemporary culture, discovered what is most painful in it: eternal unfulfillment. Since 1968, we have lived in a world of countercultural struggles, where the revolution cannot end. Femmen, even though pornographic art has found its way into the salons, will therefore still shock with nudity aimed at the order of the deconstructed world.

Art can reach where our conscience is silent. Preoccupied with a consumer lifestyle, following the demands of the free market reality, we do not count the carbon footprint we leave behind. We simply follow the reality so well characterised by Baudrillard, Bauman and other masters of postmodernity. Human beings need to go on holiday, eat well, own and continually evolve. Scilla Elsworthy-style activists can only appeal for moderation and dialogue, they can only ask us to negotiate, but we overeat the world anyway, heedless of the climate crisis and the great extinction. Only Willy Verginer's chemical-drenched deer inspire (temporary?) horror. Bright, as if bleached, with hooves dipped in black and green liquid. Verginer gives us a picture of the world in *Between Ideal and Reality*. In principle, he does nothing out of the ordinary. He shows the consequences of our selfish work in naturalistic terms and proportions. Here are animals crossing our path, like a guilty conscience, drowning in our toxic waste.

Classical art, the beauty of the landscape, the still life of the Flemish masters accustomed us to death. In a world governed by the Cartesian division between machine-animal and human-consciousness, violence against the non-human world was natural. The outstretched body of a dead rabbit among flowers, apples, grapes, a whole array of vegetables and fruit spilled on the table - no one is surprised. Neither does a dead hen lying next to it. The beauty of Adriaen van Utrecht's work classified as a still life by the Flemish masters tames the sight of the death of an invisible animal. The rabbit, just like the hen, is treated as an object of everyday use, reduced to kitchen simplicity and aesthetic value. The death of an animal makes no impression on anyone, because it is the death of a machine which is supposed to serve us anyway.

Eco-revolutions

In the 20th century, however, something surprising happens. Aldo Leopold, Baird Callicott, Thomas Regan, Peter Singer, Holmes Rolston III, Henryk Skolimowski, Paul Taylor start writing and convincing society that the animal is not a thing. Carol Adams argues that meat is not the food of everyday life, but of violence, in a phallocentric world where male domination begins with the ritual eating of the body: the slaughtered animal, the hunted game, the domesticated creature, and ends with the consumption of the woman reduced to a body-object. *The painting devouring the landscape* by Bartosz Kokosiński encloses a dead, hunted deer in the canvas. It is like an indictment of all tradition, chauvinistic madness, speciesist stigmatisation and domination. The still life is literally wrapped in canvas so that no one can enjoy the aesthetic image of violence anymore. The deer is thus buried in a canvas shroud, no longer an artefact, a Cartesian machine, but a human victim. Wickedness is laid bare and perhaps this is the greatest revolution of art.

Perhaps Albert Camus was right when he claimed that rebellion in search of values, in the name of the other, in opposition to injustice, can only take place in art. In every other field it becomes the terror of a bloody revolution. The scorched earth, the destroyed ecosystems, the great extinction constantly escapes our eyes. As long as we can buy and own, as long as we have the commandment of cultural self-fulfilment, we will follow the commandment of anthropocentric egoism. No IPCC report, no philosophical or ecological analysis will make us suddenly give up our habits and prosperity. For contemporary man, an observer of how the earth burns, the spire of Notre Dame Cathedral is still more important than scorched stretches of jungle, lost tundra, Amazonian forests or burnt Australian bush. The burnt koalas will still move us, but the battered land will no longer be the object of our horror. When the roof of Notre Dame Cathedral burned, people around the world could not sleep, praying and weeping for the loss of cultural heritage. When the lungs of the world are burning, butchered by our selfishness, we sleep peacefully. The dream of the unjust.

The art revolution reveals what we don't want to see, complaining about a loss that seems extraordinary to us. Fabian Knecht's works are a silent remorse, a scorched earth depicted, mourned by no one. The Isolation series shows precisely what is most important: although we inhabit the earth in such large numbers, it still dies in solitude. Mother Gaia, as Lynn wanted Margulis and James Lovelock, is our strength and our commitment[4]. Thanks to Mother Gaia, affectionately called 'the blue planet' by a spoilt child, we can live and enjoy well-being. But we have forgotten the child's duty to one’s ageing mother, we have put her in a shelter, we do not see her death, busy with our

[4] James Lovelock, *Gaia. A New Look at Life on Earth*, Oxford University Press, 2016.

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Elżbieta Bińczak-Hańderek, „Wieja” - oil, board, 2020

Source: author's archives

own lives. We do not see that she will die with us. According to Jem Bendell, this knowledge is too traumatic for contemporary man, so we prefer to deny it and pretend that we still have time to improve the climate[5].

Fabian Knecht, Vibha Galhotra or Nilbar Güreş in their works expose the loneliness of Mother Gaia, her agony in the midst of people busy with the development of their great coal civilisation. Camus, writing about the rebellion of art, sees in the artist's work the possibility of truly speaking about the world, of giving it categories that allow for a deeper view of reality. Without the artist's intuition, sunflowers simply grow, they are, they are an element of the world so natural that it is invisible to our sensation-seeking eyes. Only the mad van Gogh, when painting his *Sunflowers*, actually gives them to us, reveals their essence to us, giving us their values on canvas[6]. Without van Gogh, the sunflowers would only continue to grow. After van Gogh they already begin to exist, to have value in themselves. Just like the flowers-human-organs in Javier Pérez's *Inner Garden*, where man-flower, body-plant acquire meaning, begin to exist as one, realising Rosi Braidotti's postulate about breaking through anthropocentric thinking, crossing the nature-culture divide. Braidotti, writing about the contemporary human condition, points to the possibility of a new sensibility, in which man can finally become-at-earth[7].

The artist does not always win, his art will not always fulfil his intentions. As is the case with Alba, Eduardo Kac's rabbit. The rabbit with jellyfish cells and fluorescent, bright green fur did not surprise anyone, but outraged ecologists, becoming a figure of enslaving an animal for the sake of empty entertainment and man's egoistic need. And so the artist lost, fortunately, irritating people enough for ethics to once again speak out in defence of animals. It is simply that artistic rebellion sometimes takes place outside the artist's intentions, not where he planned it, and at some point it is the viewer who adds and paints the punch line or develops the revolution.

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[5] https://jembendell.com/2019/05/15/deep-adaptation-versions/.

[6] Albert Camus, *Człowiek zbuntowany*, tłum. J. Guze, Warszawa, 1991.

[7] Rosi Braidotti, *Po człowieku*, tłum. J. Bednarek, A. Kowalczyk, Warszawa 2014.

Lost opportunities

Bioart can be reduced to a game in which the artist enters the role of Dr Frankenstein, transgressing the limits of biology, imagination or common sense, but it can also become a diagnosis. Stelarc's desire for a third hand or a third ear is a trasnhumanist dream in which man breaks away from himself and gains new possibilities. Stelarc's ear listens for others, for his audience. The unnecessary third hand carries the potential that the bionic limb of the mutilated man will begin to develop. The artist's play turned out to be a serious matter, a task for humanity, of restoring fitness and self-confidence. In his works, Stelarc becomes Donna Haraway's cyborg, becoming a machine, abolishing the binary and the opposition between the natural and the technological[8]. Bioart becomes a realisation that humanity cannot yet afford, but has long dreamed of.

The problem is, as Lauren M.E. Shows. Goodlad, that Frankenstein's monster is an eternally open project. A dream that has broken off the lab's production line, our research and existential failure. This is why contemporary culture is full of unfinished form[9]. Man is unable to finalise his work, he is afraid. In this aspect, art may be a veil hiding the scientist's lack of responsibility (Alba rabbit, like every cloned animal, was doomed to illness and a short life in the laboratory). Art can also become a dummy that, in the projects of creating a hybrid, realises only what bears the hallmarks of artistic creation, without seeking an answer to the question: "What for?". In this way, the revolutionary potential spills out into a series of tasks and realisations, without delving into structure and responsibility. In this way, Frankenstein's great unfinishedness begins to be realised.. And in this sense Goodlad is right, Frankenstein's work is not so much abandoned as unfinished, becoming a human being in an unfulfilled existential situation.

This halfway suspension, this aborted gesture of revolution, is our greatest weakness and the greatest sin we commit against Mother Gaia. The world is burning, we have 20 years left according to conservative estimates, 4 according to realistic figures. After that there will be no turning back 2020 was the hottest year in decades, we are a measly four years ahead of the point where the avalanche of world destruction caused by the greenhouse effect and our mindlessness will begin. We do not have time to be frightened or to misunderstand the problem. It is time, as Jem Bendell puts it, for deep

[8] https://sites.evergreen.edu/politicalshakespeares/wp-content/uploads/sites/226/2015/12/Haraway-Cyborg-Manifesto-2.pdf.

[9] Lauren M.E. Goodlad, *Looking for Something Forever Gone. Gothic Masculinity, Androgyny, ad Ethincs at the Turn of the Milenium*, „Cultural Critique", 2007, No. 66, pp. 104–126.

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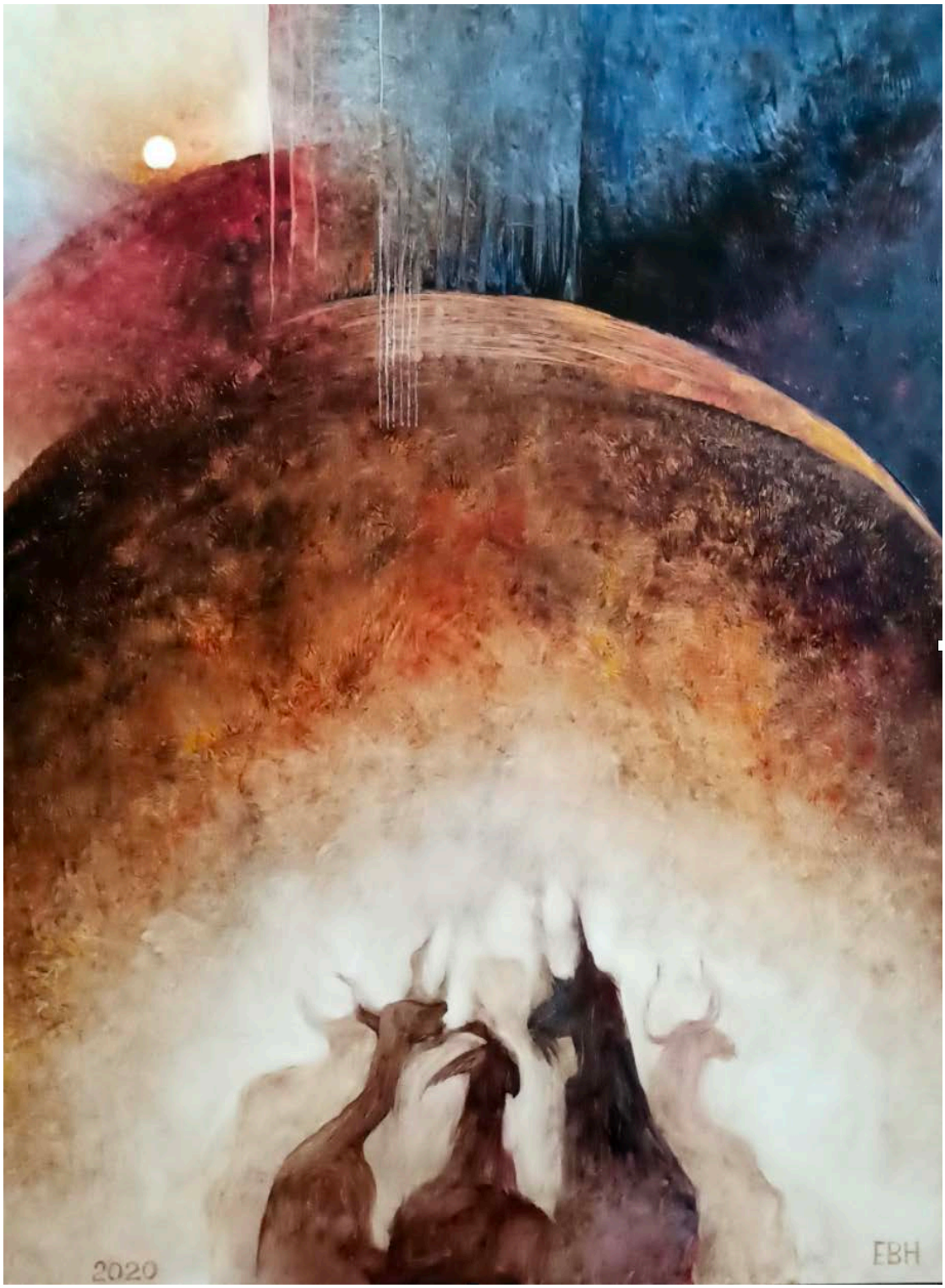
Elżbieta Bińczak-Hańderek, „Dzieje" - oil, board, 2020



Source: author's archives

adaptation, that is, learning to live in a world of crisis, in which water shortages, migrations, climate change, lack of food and basic necessities may turn out to be an everyday occurrence. Meanwhile, we leave the gallery or the cinema in shock, rub our eyes in amazement after yet another book and... do nothing. The revolution is stuck at the halfway point.

What Mary Shelley intuited has been trivialised in pop-cultural renditions of romantic drama. What is a big problem has become the plaything of artists in successive laboratory task-manifestos. A third hand, a third ear, a green rabbit, all for the bored, overeager viewer of Western culture, who, after consuming gadgets, needs to consume art, preferably the "strange" or shocking kind. Voyeurism has taken over our needs, so it is best for artists to also be blunt and massacre our emotions. The voice of those who scream that we no longer have time, engaged artists, activists, academics and researchers, is mixed with performative entertainment. Instead of understanding and deep adaptation, instead of addressing the dying Mother Gaia we prefer entertainment. In the realm of politics, it does not fare much better, as everything ends up in a parade of successive rallies of the greats of this world, parading before a column of journalists with a sense of mission and power. However, a demonstration of power has never saved anyone.

The lack of systemic solutions, the lack of individual awareness, the few who do something for the world, the trivialised youth movement and their protests (in a scornful commentary stating that when they grow up, they will deal with normal life and it will pass) - all this makes us blind. Meanwhile, the crisis has already begun, the climate bomb has already been activated. We treat the world as if it were in our imagination, as if it could be changed at will. All the time we behave as if we could turn everything around. Meanwhile, reality is all around us, increasingly tired and increasingly degraded. Mother Gaia is dying. Alone. In front of our eyes.

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KAROL SZAFRAN

FOUNDATIONS OF VISUAL CULTURE

The multitude and evolution of images

ABSTRACT

Today, in the course of constant technological, cultural and philosophical changes, the status of the image, which in digital art is transformed into a different kind of image – the "cybercultural image", is constantly evolving. And both in direct contact, in the reality overloaded with visual attractions, and in a deeper humanistic discourse. In social discussions presenting further research observations on imaging we can see the questioning of the existence of the image itself in its traditional sense. Art, which uses new technologies as tools, now gives us many suggestive examples of processes that build the world of cyberculture. The ever-changing technological world puts us now and then in a new reality. The dynamics of these changes and experiences, which we often do not notice, also change the way we create and look at works of art.

Keywords

Artifact; Photo camera; Video; Photography; Graphics; Interactive; Internet; Video camera; Visual culture; Medium; Net art; Image; Digital image; Cybercultural image; Digital revolution; Electronic revolution; Interactive revolution; Image revolution; Industrial revolution; Network revolution; Technical revolution; Network; Simulacrum; Art; Technology; Video art; Virtual reality; World Wide Web; Interactivity

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Foundations of visual culture

The multitude and evolution of images

Introduction

The constant process of shaping the modern condition of images (probably still temporary) is gradually transforming. It started about 200 years ago. And so we too must go back in history to better understand it. During this time, we have been and continue to be witnesses to, or participants of, the next revolution in imagery. Some of them occur dynamically, even overnight. Others are maturing, waiting for their right moment, not only for purely technical reasons. An analysis of these changes leads us to distinguishing between five particularly important events that happened over that time. They are related to the concept of the industrial revolution, its dynamic changes in subsequent historical editions, which relate to technology and production. In view of this term and its development, fundamental changes in the formation of the modern paradigm of imaging can be classified. Each of the following processes has contributed in its time to a profound transformation known today as the concept of “visual culture”.

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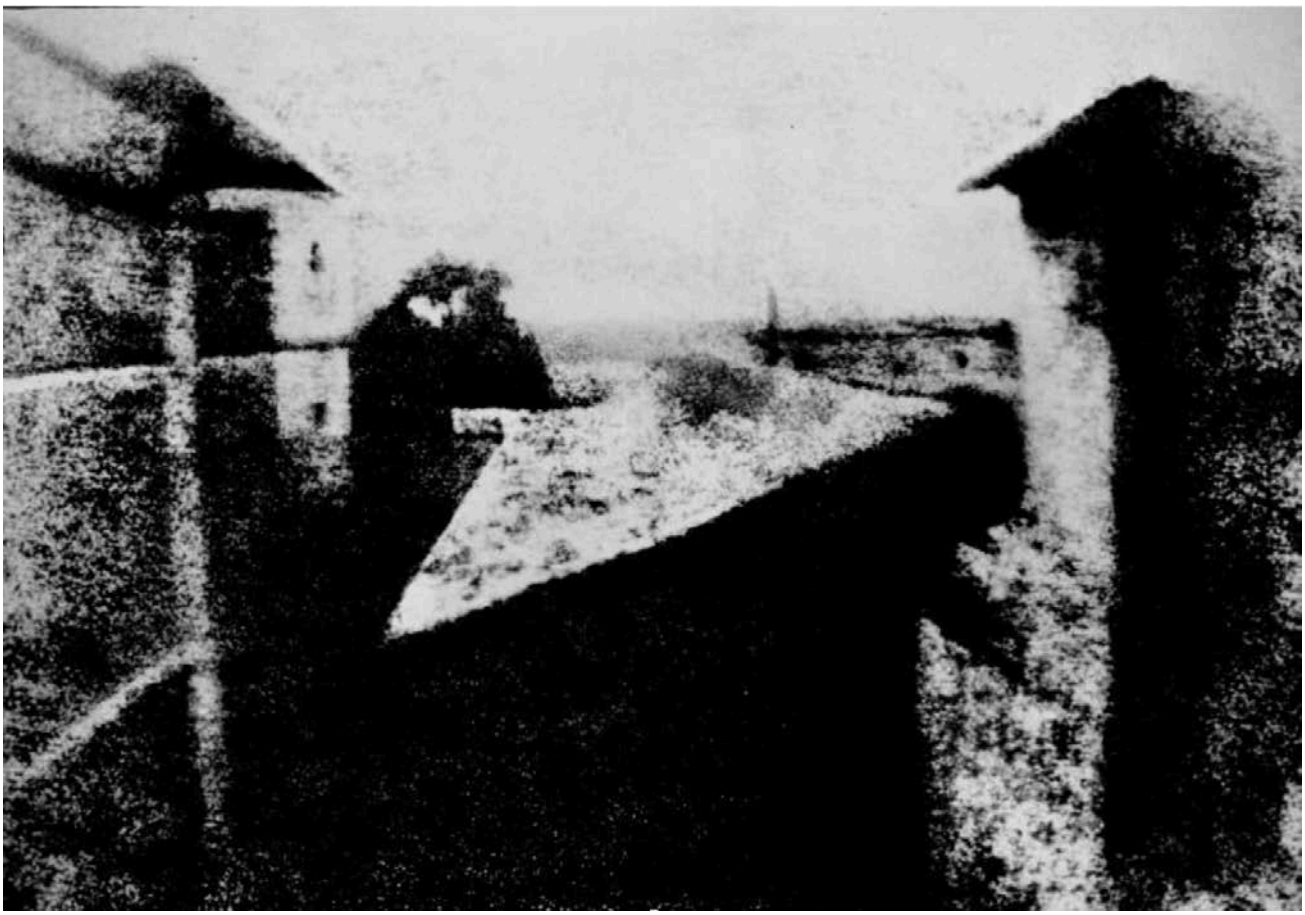
The technical revolution

The invention of a prototype photographic camera by Louis Daguerre and Nicéphore Niépce is worth taking as a starting point. Thanks to the invention itself, a new medium for the materialization of images is also created (which will later materialize another one: film). These events ushered in the first revolution that directly touches the realm of image. It will, of course, have an impact on the field of visual arts, but much later, because the mechanization of the recording of image in the

View from the window in Le Gras (1826). The first successful durable photograph taken by Nicéphore Niépce in 1826



Source: https://pl.wikipedia.org/wiki/Historia_fotografii#/media/Plik:View_from_the_Window_at_Le_Gras,_Joseph_Nic%C3%A9phore_Ni%C3%A9pce,_uncompressed_UMN_source.png

photographic camera or film camera was considered rather the function of scientific instruments or entertainment tools. They were not treated as a medium of visual arts. Unlike graphics, where mechanical techniques support the process of turning an artistic vision into an artifact, in the case of photography they combine the creation of a vision and the creation of a material image into a single process. The artist operates the machine, while the machine begins to oversee the process of creating images. However, it took a long time for this to happen. It was not so much the technical revolution that had to contribute to the change of gaze, but the change in the transformation of the art world within the formulation of ideas, concepts or notions. The mechanization, or automation, of the image production process was the main reason for the reluctant approach to photography and film as an art medium. Photography introduces technical automatic procedures into the scope of cultural experiences of creating images. Thanks to the technological revolution, machine and mechanical imaging methods are introduced into the world of art.

The electronic revolution

The next revolution in technology and in ways of imaging does not abandon what has been developed so far – on the contrary. Its achievements will make use of technical media and get clarified on their basis. It will be about 100 years before the second of the revolutions reaches its climax. Although already in 1884 Paul Nipkow patented the first electromechanical television system, it was not until 1927 that Philo Farnsworth invented an electronic image scanning system.[1] (Also persons involved in the television broadcast should be mentioned, such as: A.A. Campbell-Swinton – the prototype of an electronic camera, John Baird – the inventor of the first working television system, and Wladimir Zworykin – the developer of the TV tube.) Of course, the TV picture is then constantly transformed and refined but it retains its basic principles and logic of operation. Ultimately, television, like film and photography, aspires to being an art medium more because of the field of video art. [2]. Television transmits images and sounds in real time and builds relationships between the places associated one with another by the transmission.

[1] Sep. 7, 1927 – the first successful TV broadcast

[2] In 1963, Nam June Paik and, a little later, Wolf Vostell presented exhibitions in which they both pioneered the use of TV sets. This event was considered the beginning of the history of video art. It is worth noting, however, that the work of *Variations Luminodymamiques 1* by Nicolas Schöffer dates back to 1961 and it is this work which begins the history of the art of video.

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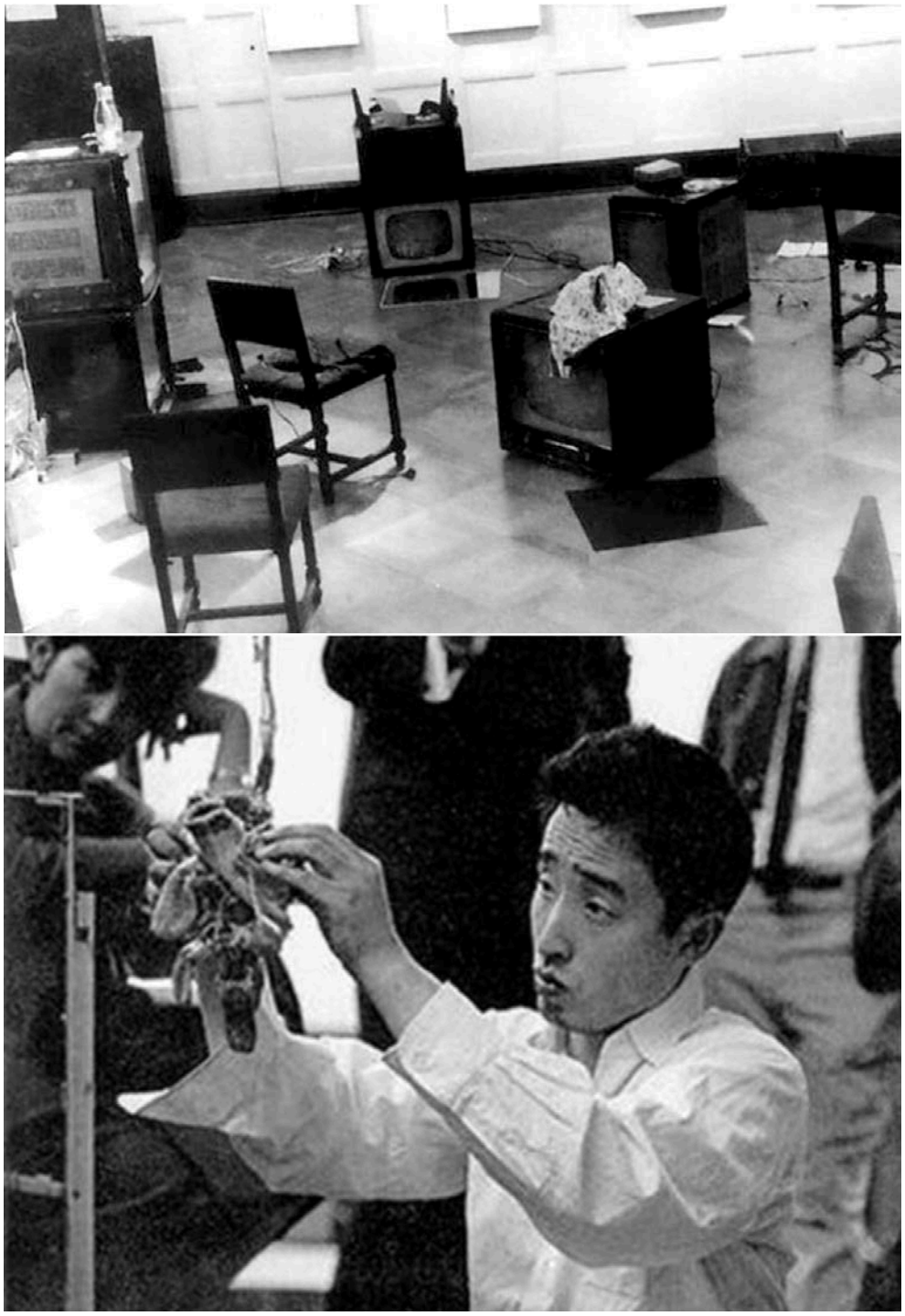
Nam June Paik, Exposition of Music – Electronic Television, 1963, Parnass Gallery, Germany



Source: http://www.mediaartnet.org/works/exposition-of-music/images/4/

Materiality combines only photographic or film images, the characteristic feature is durability and invariability over time (accidental changes are treated as faults or damage). Electronic images, on the other hand, tend to have the status of events. They happen live. They do not create anything permanent but they pass away as they are presented.[3]. It can therefore be concluded that the second revolution in imaging strips material existence off images. Instead of functioning as real artifacts, images become events.

The digital revolution

The first digital image from Russell Kirsch's scan is considered the breakthrough moment in the third revolution in the field of imaging. He performed a scan of the head of his three-month-old. The image composed of only white and black pixels (without grayscale) has become a symbol and, at the same time, the beginning of digital imaging. A moment complicated in its process, closely related to the development of computer technologies.

Digital images, like electronic ones, are characterized by non-existence, eventuality and disappearance from the realm of material artifacts. However, regardless of the visualization technology used, the core of digital imaging is constant. During the digital revolution, the process of dematerialization of the image continues to deepen.

Digital media are characterized by the possibility of different performances of the same digital image. Lev Manovich lists five basic hallmarks: numerical representation, modularity, automation, variability and cultural transcoding[4]. Each object of the new media is therefore a number subjected to algorithmic processing; it is characterized by modularity, variability: the digital image should not be regarded as a single existence but as a multiplicity of potential implementations. Another property is generativity: the image ceases to refer to reality, which means replacing the performance with a presentation. The picture then takes on a form described by Jean Baudrillard as a simulacrum[5].

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[3] "Electronic images (…) are the result of collisions, collisions between electrons and the surface of the screen, so they should be called a 'technological disaster of images'. Digital images, on the other hand, would be assigned the status of performance images. I would say that they have some kind of durability, and not ephemerality". R.W. Kluszczyński: "Obrazy nomadyczne i postobrazy. Transformacja, transgresja i hybrydyczność w sztuce nowych mediów.", Łódź 2015, p. 29

[4] See L. Manovich: "Języki nowych mediów", translated by P. Cypryański, Warsaw, 2006, p. 91-118.

[5] See J. Baudrillard: "Symulakry i symulacja", translated by S. Królak, Warsaw, 2005.

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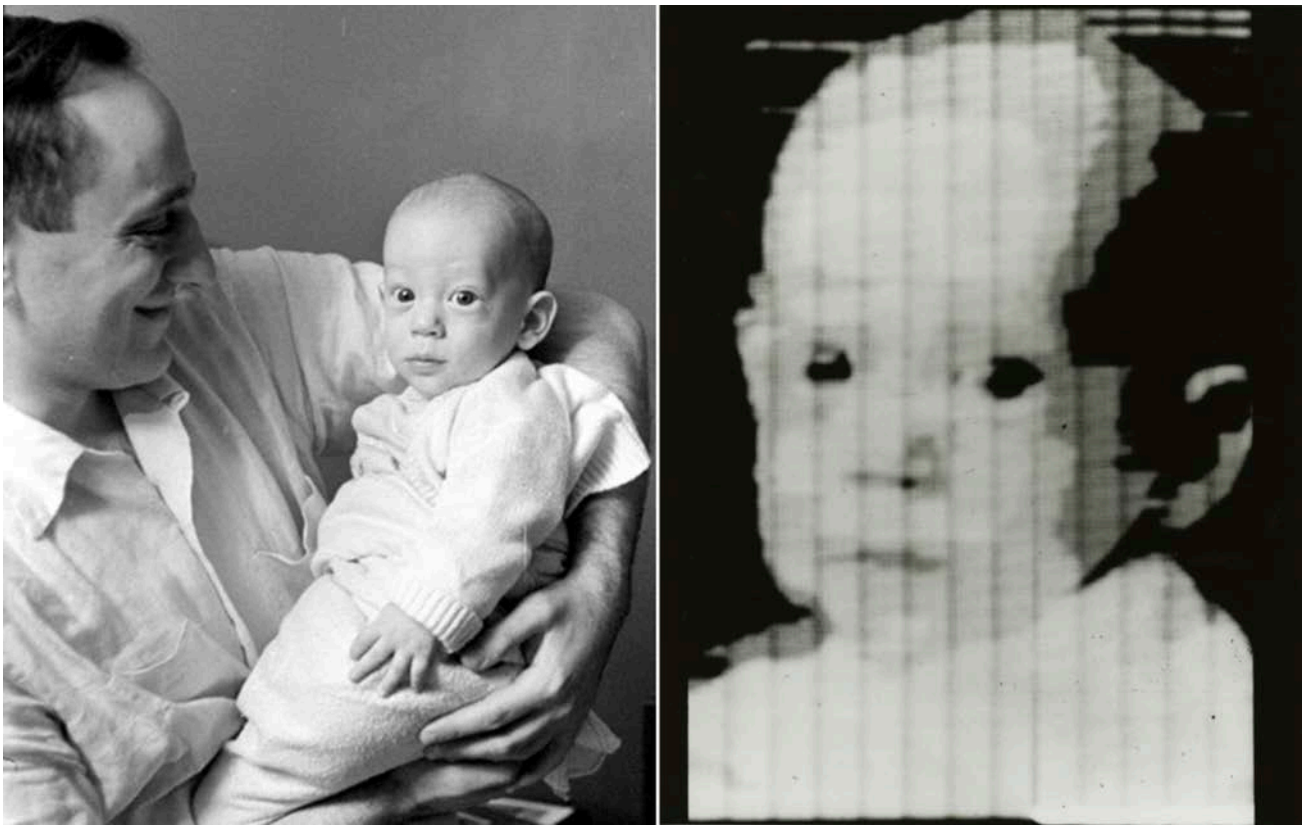
Source photograph (left) for Russell Kirsch's scan (right)



Source: https://enter21st.com/the-inventor-of-the-pixel-passes-away-on-the-age-of-91/

The interactive revolution

The fourth revolution concerns interactive artistic imaging forms. Interactive media is definitely dominated by digital media. They appear already in the 1950s[6] and are of course improved in later decades with the rapid development of, and fascination with, new technologies. Virtual interactive environments treat traditional imaging differently from the ones described above. In addition to the appearing on the screen right in front of the audience (as has been the case so far), they surround the viewers from many sides, engaging additional senses. In this way they allow you to experience virtual reality almost physically. Not only these images do not present anything but themselves; they are also manipulated by the audience / viewers / users. They pass through smoothly, connecting with

[6] The work of Nicolas Schöffer is an example.

the reality of the addressee. Interactive media can appear on a flat-screen monitor and they might as well be in an interactively managed virtual environment.

We can also see many examples in which the above-mentioned types of imaging combine one with another. Virtual objects in hybridization processes intertwine with material objects to create autonomous environments. So, instead of images-events we get images-tasks[7].

The network revolution

Individual visual revolutions should be regarded as consecutive phenomena arising one from another. These are consequences in a logical rather than a temporal sense because it is difficult here to fit this complex process into a strict chronology. To a large extent, these are stages of the complex course of the transformation of the image world, maturing in its sophistication. Technical images turned into electronic ones, these turned into digital ones, and the next ones became interactive to end in the network. Importantly, subsequent forms of imaging retain the properties of the previous ones.

> The automation of images transforming into their automization, characteristic of the technical revolution, was supplemented by the eventuality of non-existent electronic images, and then also by the executive mode of digital images. The interactivity, which preserves numerical durability of digital images, has put them all into the process of endless transformations initiated by users. Together, they all have created the paradigm of the new iconosphere, which we are now referring to in the processes of creating, interpreting, and using images. What has been added to this paradigm as a result of the network revolution? Images have been linked one to another in the network, but they themselves have turned into networks[8].

When thinking about a network at this point, it should not be narrowed down to the Internet. In addition, you can mention Ethernet, telephone or geolocation networks that use wired or wireless connectivity. On the other hand, other levels of networks can be created within them. This allows artists to create works in a virtual space that is accessible to the viewer / recipient only through a

[7] Authors including R.W. Kluszczyński use terms such as “image-task”, “image-event”, “image-environment”, “image-object” or “image-post-image” in the current discourse about imaging.

[8] R.W. Kluszczyński: “Obrazy nomadyczne i postobrazy. Transformacja, transgresja i hybrydyczność w sztuce nowych mediów.”, Łódź, 2015, p. 33

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Widok wystawy Les Immatériaux, Centre Georges Pompidou, Paryż, 1985

Źródło: https://www.e-flux.com/architecture/superhumanity/66879/spatial-thought/

network connection, through connectivity to other servers[9]. Another way of receiving their work is impossible. Breaking down certain technological barriers and the emergence of the World Wide Web becomes the basis of the new digital image.

In 1994, Bradley University and the Peoria Art Guild organized a competition for artists who wanted to present their works on the World Wide Web, resulting in The Digital Photography Exhibit. Digital photography was then defined as a two-dimensional image created by optical devices and then "finished" on the computer.

Galleries, museums and other institutions, not only cultural, began to rapidly absorb and use the new opportunities offered by the internet – not in response to the underground activities of internet artists at the time but rather as part of a joint action – deciding to reach the audience also virtually, via Web sites. Some universities and academies turned into places of change – the Internet (used so far for military and scientific purposes) has started to be used for educational and research purposes in the field of art. Libraries had already adopted it in text-only form (gopher-sites) a few years earlier.

In 1985, one of the events leading to the emergence of net art [10] was the exhibition at the Centre Georges Pompidou in Paris, entitled Les immatériaux, curated by philosopher Jean- François Lyotard. Invited artists created works using the Minitel[11].

The attractiveness of the new medium was also due to the strong belief that it had just emerged free from censorship and all restrictions, accessible to virtually everyone, way to reach the recipient directly. Net art develops in many directions, from interactive literature to simultaneous online meetings. Over time, it has also become apparent that artistic activities taken on the Web (over time less and less anonymous) can have consequences in the real world.

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[9] Linz, Austria, 1995. The Ars Electronica festival introduces the term "net-art", which signals the coming of a new stage in the evolution of contemporary culture.

[10] The term "net-art" was born 1995 in and described a domain that used to be ignored by the most of the mainstream art world.

[11] The videotext system operating online, accessible through PSTN lines, implemented in France in 1982 by France Télécom and by La Poste

What next?

> The technical revolution introduces a machine and mechanical imaging methods into the art world, the subsequent electronic revolution makes the image, hitherto established in a material medium, take the form of a signal that requires decoding, becomes an image-event, literally: it happens on the monitor screen. The digital revolution complicates the situation further because, thanks to the numerical recording, the image acquires the character of an open score to be performed. The interactive revolution makes us think of an image-task with which our relationship – like the whole participatively hybrid reality in which it takes place – is undergoing a significant transformation. Finally, the network revolution that brings out its virtual and transmedia nature from today's image[12].

In this constant process, of course, the very aesthetics of the revolutionized images are also changing. Compared to classic images, i.e. photographic and film images, digital, interactive and Web images (although they share a common history and are still experienced as images) have completely different characteristics and different ways of functioning. As a result, the image ceases to be a representation, becomes an environment or interface of an interactive experience. The omnipresent interactive screens of mobile devices, smartphones and tablets reinforce the process. Thus, they deprive us, the audience, of reasons to call the content of screens “images”. Nevertheless, in the minds of many audiences-users, they are constantly experienced as images in the traditional sense. Probably only because of habituation, which will also weaken with increasing awareness of new generations.

[12] R.W. Kluszczyński (ed.), D. Rode: “Trajektorie obrazów. Strategie wizualne w sztuce współczesnej”, Łódź, 2015, p. 7

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P. Zawojski: “Cyberkultura jako nowy paradygmat kultury medialnej. Rozważania teoretyczne.” in

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AGNIESZKA OZGA

VISUAL AND ACOUSTIC ASSESSMENT OF ACOUSTICALLY ALTERNATIVE URBAN SPACES DETERMINED BY THE TRANQUILLITY FACTOR

ABSTRACT

A balance between what we see and what we hear is necessary in all the spaces where people live. In a city, there are a number of sounds that are perceived by most inhabitants as disturbing. It is therefore necessary to mask these sounds, and this type of intervention in the soundscape creates acoustically alternative urban spaces. The evaluation of the applied solutions changing the soundscape should be reviewed. The previously used tranquillity indices for assessing the visual and acoustic soundscapes have their limitations. They do not take into account the perception of space at night or the sound structure regardless of the time of day. This paper starts a discussion on how the tranquillity factor should evolve so that it can be used to evaluate the progressively changing urban spaces.

KEY WORDS

soundscape ; tranquillity factor; urban spaces; space; city; acoustically alternative urban spaces

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Visual and acoustic assessment of acoustically alternative urban spaces determined by the tranquillity factor

Introduction

Modern city hosts several types of areas: residential, recreational, dedicated to education or sports, as well as places where the permanent and temporary residents work. In some cases, these spaces function separately or intermingle with each other.

In the residential areas, everyone expects comfort and tranquillity, and this is clearly equated not so much with silence as with a welcoming soundscape. In the recreational areas[1], the sound of the city is masked by labyrinths, park instruments, tubes or spheres with a friendly soundscape, amphitheatres, underground museums, earphones, playing sculptures, stairs and benches.

[1] *Audiosfera miasta*, eds. R. Losiak, R. Tańczuk, Wrocław 2012.

In spaces where there are large groups of employees, buildings provide the adequate acoustic comfort. In addition, pocket parks are established, providing places to sit, eat and relax. Sometimes they include a four-level waterfall, with tables and armchairs on each level. Sometimes only fountains are put up, in which the flowing water also masks the perceived sounds, and creates zones of tranquillity.

The ways of masking of city sounds presented above represent a certain attempt at interfering with the soundscape by creating acoustically alternative urban spaces.

The contemporary functioning spaces should and will change. The interference will concern the methods of storage of energy and water as well as innovative solutions to fight smog. They will change the visual landscape and the soundscape of individual areas. Care should be taken to ensure that the changes do not interfere with the landscape in a way which makes urban spaces too difficult to perceive.

In order to evaluate the upcoming solutions, it is required to create coefficients that allow a reliable verification of the psycho-acoustic perception of a given space. The idea is to strike a balance between what we see and what we hear, and what we need and what is emerging as part of thee innovative solutions dedicated to cities.

Nowadays, one of the coefficients defining the evaluation/suitability of a site is the tranquillity rating. The rating is constructed as:

$$TS = X \pm \alpha \cdot A_1 \pm \beta \cdot A_2 \pm \ldots \pm \omega \cdot A_n \qquad (1)$$

where:

X – is a certain constant which, like the other indicators, is determined on the basis of psycho-acoustic research. Regression analysis is used to determine the straight line equation.

$A_1, A_2, \ldots, A_n$ – are the sociologically determined elements shaping the perception of tranquillity in a well-defined place.

$\alpha, \beta, \ldots, \omega$ – are the quantifiers of the impact of each of the above elements.

The tranquility factor can include a number of indicators, whereby the positive visual and auditory elements increase the tranquility index and negative ones decrease it (Photo 1, Fig. 1). Research[2] shows that all elements in a developed space that are connected to nature, such as the trees in photo 1, increase the tranquility index. Flora, fauna, geological features including stone walls and water were considered the natural features. Architectural features integrated into nature will also increase the index. Anything related to industrial infrastructure or roads in the landscape will lower the tranquillity index.

[2] R.J. Pheasant, K.V. Horoshenkov, G.R. Watts, *Tranquillity rating prediction tool (TRAPT)*, „Acoustics Bulletin", 2010, No. 35 (6), pp. 18–24.

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Photo 1. View of Nowa Huta and Wieliczka from Stok pod Baranem. Fragments of the photo marked as areas B and C are the natural elements and architecture integrated with the nature that increase the positive perception of the space. The fragment of the Tadeusz Sendzimir Steelworks infrastructure, marked as area A, negatively influences the perception of space.

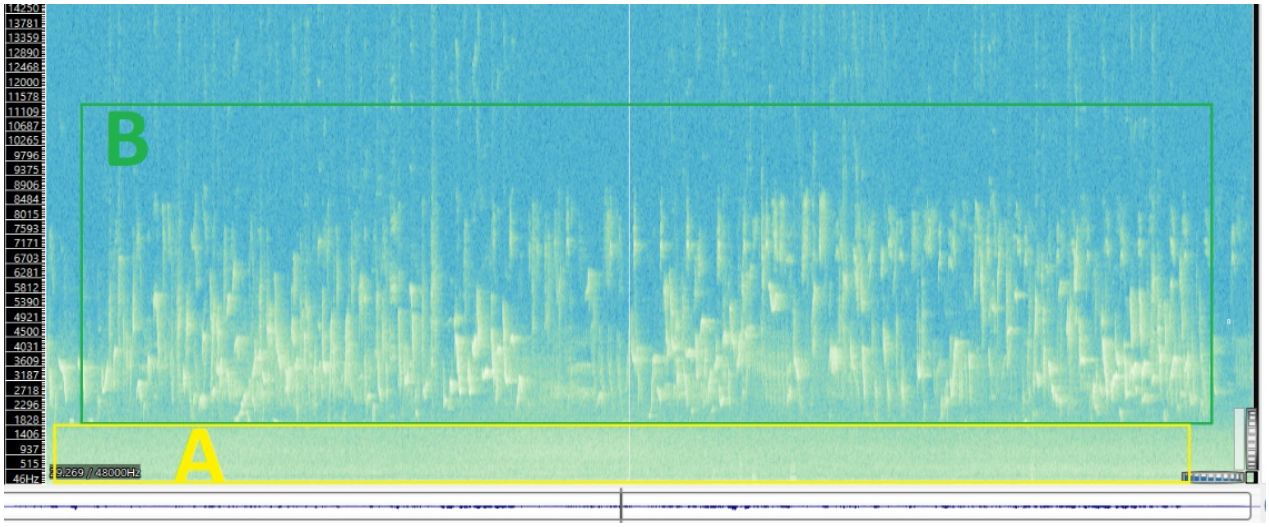

Fig. 1. Spectrogram from sounds recorded in the Niepołomice Forest in spring 2018. Noises from the motorway - negatively affecting the perception of the soundscape - were marked on the spectrogram with a rectangle labelled A. The green rectangle labelled B indicates birdsong increasing the positive perception of the soundscape. The sounds of nature do not mask sounds of transport

The model used contemporarily[3] to assess the visual and acoustic landscape takes into account the daytime equivalent sound level A (7.00 to 19.00) and the NCF percentage (0-100), which was designed to determine to what extent the space is filled by nature and by the architecture that is in harmony with nature.

$$TR = 9.68 + 0.041\ NCF - 0.146\ L_{Aeq} + MF \quad (2)$$

MF is a moderating factor allowing the addition of elements that positively or negatively influence the perception of a given space. Its influence is rated at ±1 point.

[3] R.J. Pheasant, K.V. Horoshenkov, G.R. Watts, *Tranquillity rating prediction tool (TRAPT)*, „Acoustics Bulletin", 2010, No. 35 (6), pp. 18–24.

The tranquillity factor is determined on a scale from 0 to 10 (Figure 2). The assessment of the terrain was classified as follows: below 5 - unacceptable; from 5 to 6 - acceptable; from 6 to 7 - relatively good; from 7 to 8 - good; for 8 and above – excellent.

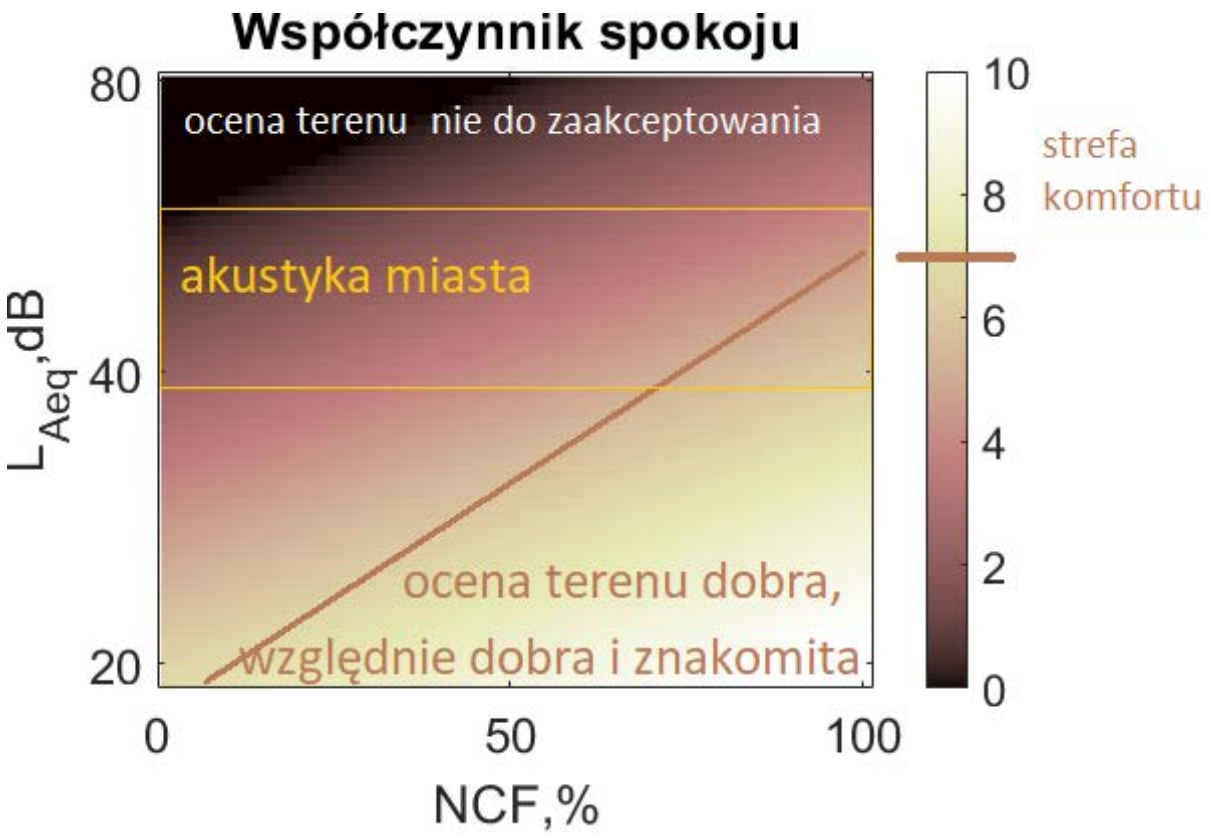

Fig. 2. Tranquillity factor as a function of the equivalent sound level LAeq and the NCF ratio, which was designed to determine to what extent the space is filled by nature and by the architecture in harmony with nature

Expression (2) characterises both urban and rural areas, and this is probably the main obstacle to using it to assess the urban space upgrading projects. With the designed model described by equation (2), there is no possibility of obtaining a better value than an acceptable one in the city (Fig. 2), which does not fully reflect the reality.

If the human comfort zone should have a TR above 7, then according to model (2), the sound level should be reduced to 32 dB at 50% NCF. At 100% NCF the sound level must not exceed 40 dB. Values of 30-40 dB are difficult to achieve in a city. A conversation in a café is at 60 dB, which even at 100% NCF gives TR=5.02 + 1p for MF. Therefore, a model change seems necessary.

Discussion on the need to modify the tranquillity factor

The MF factor was to serve the purpose of making the perception of urban space more realistic. However, the direction in which the researchers break down the MF into factors characteristic of a given place for the users of a given space does not allow generalisations to be made. It is difficult to compare the analyses conducted in Pisa with the urban space of Krakow, Wieliczka or Nowa Huta. These cities have a different character, differently organised transport, different urban parks, different infrastructure intended for tourists. Moreover, the research on the MF focuses on what is available here and now. It does not address the modernisation that will occur with technological progress and climate change in the coming decade.

First change – reception of a city at night-time vs. reception of a city during the day

A discussion should be initiated on the assessment of the night-time tranquillity factor[4]. According to a WHO report[5], one in five Europeans is regularly exposed at night to sound levels that are significantly detrimental to health[6]. Urban residential areas should be designed in a way that protects users. In this case, solutions to reduce sound levels should be worked on.

[4] R.J. Pheasant, K.V. Horoshenkov, G.R. Watts, *Tranquillity rating prediction tool (TRAPT)*, „Acoustics Bulletin", 2010, No. 35(6), pp. 18–24.

[5] B. Berglund, Birgitta, Lindvall, Thomas, Schwela, Dietrich H & World Health Organization. *Occupational and Environmental Health Team*, 1999, Guidelines for community noise. World Health Organization. https://apps.who.int/iris/handle/10665/66217

[6] A. Lipowczan, *Akustyka ciszy*, „Bezpieczeństwo Pracy. Nauka i Praktyka", 2019, nr 5 (572), s. 6-10.

Recreational areas, on the other hand, require a different definition of the NCF factor. The lighting of the space at night in the city is not negligible (Fig. 3.), and this has not yet been included in the model. The perception of the same space at night and during the day is so different that it should not be defined by the same factor.

Fig. 3. The Alsos project, which was created during the inter-university workshop New Space, carried out from 26 to 29 November 2018. Students worked on a proposal for changes that should take place in Krakow on the Mateczny-Borek Fałęcki route. The authors of the project are Karolina Motak and Paulina Habura (Academy of Fine Arts in Krakow, Faculty of Interior Design), Marta Bil and Sanara Słojewska (Krakow University of Technology, Faculty of Architecture), Julia Idczak (AGH University of Science and Technology, specialisation in acoustic engineering), Karol Piotrowski (Jagiellonian University, Institute of Sociology).

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Second change - inclusion of sound structure in the model

In addition, the soundscape can be shaped by sound sources. The difficulty of this type of research is that the same sounds perceived as negative by one group of listeners may be neutral to another group.

Since the 0.146LDAY relationship estimated by the researchers in the regression analysis does not distinguish between sounds that are perceived negatively and those that are effectively and positively masking an unfavourable acoustic climate[7], for cities (and only for cities), the following modification of the model could be considered:

$$TR = 9{,}68 - 0{,}00146\, L_{Aeq}\,(100 - SC * f(L_{Aeq})) + 0{,}041\, NCF + MF \quad (3)$$

where SC (on a scale from 0 to 100) is a coefficient containing information on what percentage of the soundscape are sounds that residents perceive as friendly.

When creating the function $f(L_{DAY})$), the following thresholds shall be taken into account[8]:

- 20 dB is the sound level that is achievable at night in a park[9] where there are no sound sources other than those found in nature; such places are difficult to find in the urban areas;
- 70 dB is the lower limit for the level which is harmful to health and has a negative impact on the working efficiency; this is also the level which occurs in a busy street;
- Above 35 dB, the negative impact of sound levels on the human body begins;
- Values 55-60 dB reflect conversation between people, 50dB is the sound level found in offices or restaurants.

[7] P. Kleczkowski, *Percepcja dźwięku*, Kraków 2013.

[8] A. Ozga, *Scientific ideas included in the concepts of bioacoustics, acoustic ecology, ecoacoustics, soundscape ecology, and vibroacoustics*, „Archives of Acoustics", 2017, vol. 42, No. 3, pp. 415–421.

[9] J. Wiciak, D. Mleczko, A. Ozga, G. Wszołek, J. Wierzbicki, J. Piechowicz, P. Małecki, *Quietness in the soundscape of the Białowieża National Park*, „Acta Physica Polonica A", 2015, vol. 128, No. 1A, pp. A-79–A-84.

For example, a linear relationship with a negative directional coefficient characterizing the fact that the higher the LAeq the lesser the influence of friendly sounds would change the distribution structure into the friendly and the unacceptable areas as shown in Figure 4.

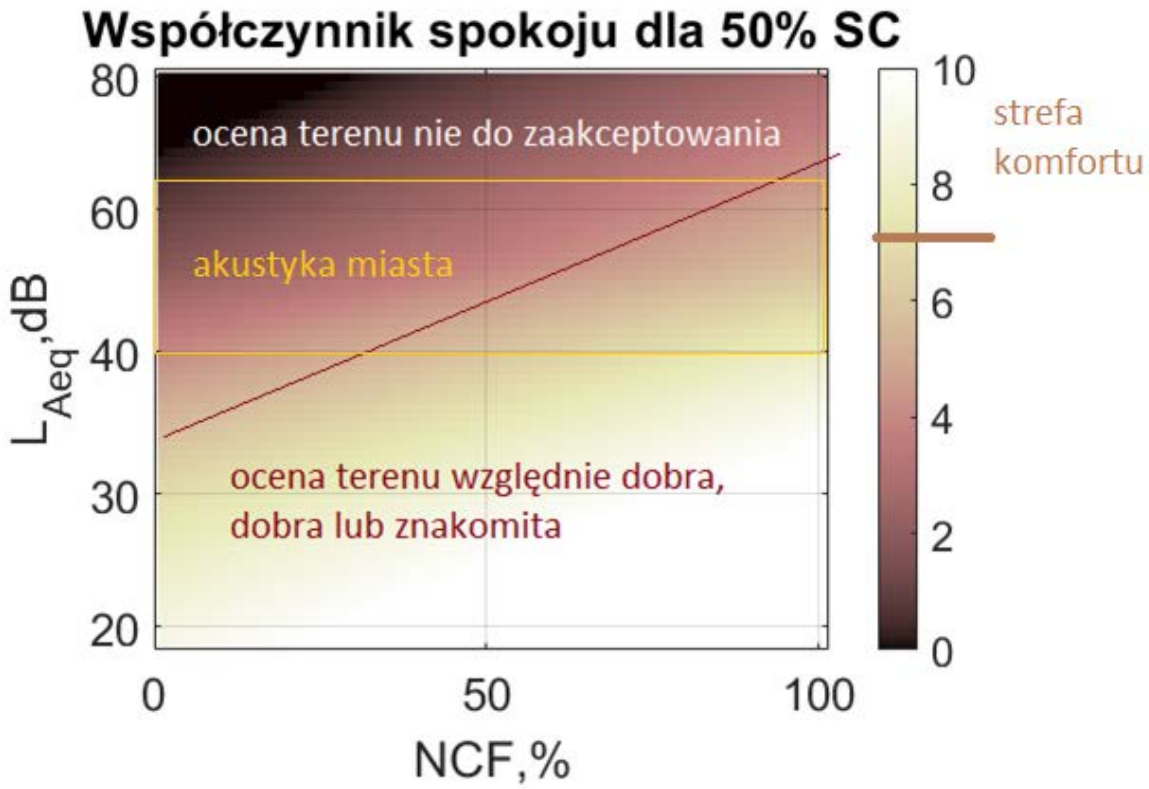

Figure 4: Modified tranquillity factor after taking into account the sound structure as a function of the equivalent sound level LAeq and the NCF factor, which was designed to determine to what extent the space is filled by nature and by the architecture harmonious with nature.

The introduction of a linear relationship to the SC sound structure has made the perception of urban space more realistic. With a soundscape containing friendly sounds in surroundings that we consider natural or in tune with nature, a TR factor of 7 and above includes areas that were

previously wrongly classified as unacceptable. The more friendly masking sounds we introduce into the space of a modern city, the milder, although still extremely important, the influence of NCF on the perception of a given space will be.

Summary

The current models used with a view to visually and acoustically assess the urban space are inadequate for how the space is perceived by its users. Urban models need to evolve[10], in line with the trend called placemaking. The concept of placemaking is the idea of shaping public spaces in such a way that they continually evolve and adapt to the needs and changes resulting from responses to air pollution problems or the development of alternative energy. With such upcoming changes it will be necessary to interfere with the soundscape by masking unfriendly sounds with sounds perceived as positive. In this way it will be possible to create acoustically alternative urban spaces.

[10] J. Wiciak, D. Mleczko, A. Ozga, G. Wszołek, J. Wierzbicki, J. Piechowicz, P. Małecki, Quietness in the soundscape of the Białowieża National Park, "Acta Physica Polonica A", 2015, vol. 128, No. 1A, pp. A-79-A-84; Alternative public spaces: Mateczny-Borek Fałęcki: the future of sound in the city, edited by B. Gibała-Kapecka, T. Kapecki, A. Ozga, K. Czajczyk, D. Milczko, J. Wierzbicki, M. Nóżka, A. Lyn, J. Idczak, K. Juros, D. Wójcik, Kraków 2019

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PAWEŁ ŻELICHOWSKI

SPACES OF INTERACTION

ABSTRACT

The use of interactive elements created by the possibilities offered by new technologies has a strong impact on the immediate human environment. This article reflects on interactive functions used in architecture and applied art. Interactive activities are often associated only with electronics, while they can manifest themselves both in human relationships and on the line of man-space-object. According to cultural experts, interactivity is the interaction between two sides, during which new meanings should be created. Such actions transform the passive attitude of their recipient, activating the person and making him or her an active participant. This type of phenomenon is described by media experts as a culture of convergence. The first chapter of the article deals with interactivity which is closely related to communication. This term means the interaction of two or more communicating entities. This type of exchange can be carried out by means of various technological media or manual actions in the human-environment relationship. A chronological account of evolution regarding interactive solutions related to applied art is presented here. The next chapter refers to architecture equipped with computational capabilities, advanced electronic, mechanical and material technology, so that it can interact with man and his immediate surroundings.

Objects created in the trend of hi-tech style were presented as pioneering examples of such solutions. Objects designed by Richard Buckminster Fuller, Cedric Price, Charles Eastman, Renzo Piano, Richard Rogers, Norman Foster, David Fisher and Zahy Hadid were described. The examples presented show that architecture equipped with interactive elements should serve man, facilitate human life and exist in harmony with the environment.

KEYWORDS

interactions; interactivity; culture of convergence; organizing; structuring; memorization; inheritance; action and reaction; participation; non-trivial activities

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Spaces of interaction

Interactivity in reference to applied art

Interactive activities are often associated only with electronics, while they can occur both in human relationships and on the line of man-space-object. According to cultural experts, interactivity is the interaction between two sides, during which new meanings should be created. Joke Brouwer and Arjen Mulder aptly quote this definition: "Interaction characterizes every existence. Bodies and objects form connections, form networks and then, through interaction, lead to organization, structuring, memorization and inheritance. Interaction is often seen as a process of action and reaction between existing bodies and objects but it is a too narrow view. Interaction prompts bodies and objects to change and create variations. Interaction is not a deformation of existing forms but rather an additional information, informing, development of forms." The wording comes from a work published on the occasion of the Dutch Electronic Art Festival in 2007, titled *Interact or Die!*[1]. The definition of a culture of convergence, which concerns active human participation in events caused by the influence of media systems, e.g. the Internet or television, is important. The concept of convergence is presented by Henry Jenkins in his book titled *The culture of convergence. A clash of old and new media*[2] where he describes it as an active participation in cultural and political events through specially designed spaces. This applies in situations where the recipient does not merely take

[1] P. Zawojski, *Dokąd zmierza sztuka nowych mediów. DEAF i Ars Electronica 2007*, „Opcje" 2007, nr 3.

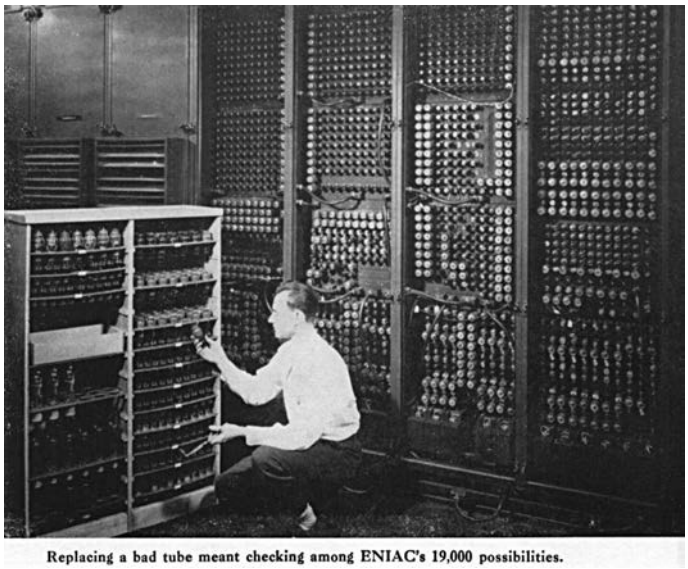
[2] H.Jenkins, *Kultura konwergencji. Zderzenie starych i nowych mediów*, tłum. M. Bernatowicz, M. Filiciak, Warszawa: Wydawnictwa Akademickie i Profesjonalne, 2007.

a passive attitude, but participates in the process prepared for him and becomes both a creator and an individual interpreter.

This article will present a historical review of the emergence of the concept of interactivity related to applied art. Advances in information and communication technology solutions enhance interaction. In addition to simple electronic solutions, devices are used the operation of which is based on a computer system. We are talking about all kinds of touch screens, virtual reality glasses, multimedia tables, motion sensors, mobile devices or multi-element multimedia sets. Users sometimes do not realize it when the real world starts connecting to the virtual world. Man begins to function in cyberspace, that is, in an illusion of the real world created through the Internet and information devices.

The first computers should be mentioned at the outset of considerations regarding the sources of media interactivity. Until 1975, ENIAC (*Electronic Numerical Integrator And Computer*)[3]. It was built by J.P. Eckert and J.W. Mauchly in 1943-1945 at the University of Pennsylvania (USA). The first unit occupied 140 square meters and was used mainly for ballistic calculations, weather forecasts, calculations related to the production of nuclear weapons or the study of cosmic radiation.

Photo 1 ENIAC. Źródło: *ENIAC*, https://pl.wikipedia.org/wiki/ENIAC (accessed on 26/04/2019)



Replacing a bad tube meant checking among ENIAC's 19,000 possibilities.

[3] *ENIAC*, https://pl.wikipedia.org/wiki/ENIAC (dostęp 26.04.2019).

It is currently being determined whether any other such solutions were previously developed, such as the ABC (Atanasoff-Berry Computer) also built in the USA, at the Iowa State University, the Colossus in the UK [4] or the German machines of Konrad Zuse[5]. I will not delve into other historical discoveries such as the first calculator from 1878 built by the Spanish inventor Ramón Verea because, going down this path, we can come to a wrong conclusion that with most of the discoveries related to electronics there is human interaction. Within the meaning of the definition of interactivity given at the beginning of the chapter, not every electronic equipment is interactive. Not always such inventions can be considered the beginnings of interactive solutions simply because they are able to respond to a message sent by man. To move away from similar comparisons, media experts use the term "non-trivial" actions, as a result of which the human-machine relationship contributes to the

Photo 2: Cyberspace. Film frame from *Mr. Robot*.

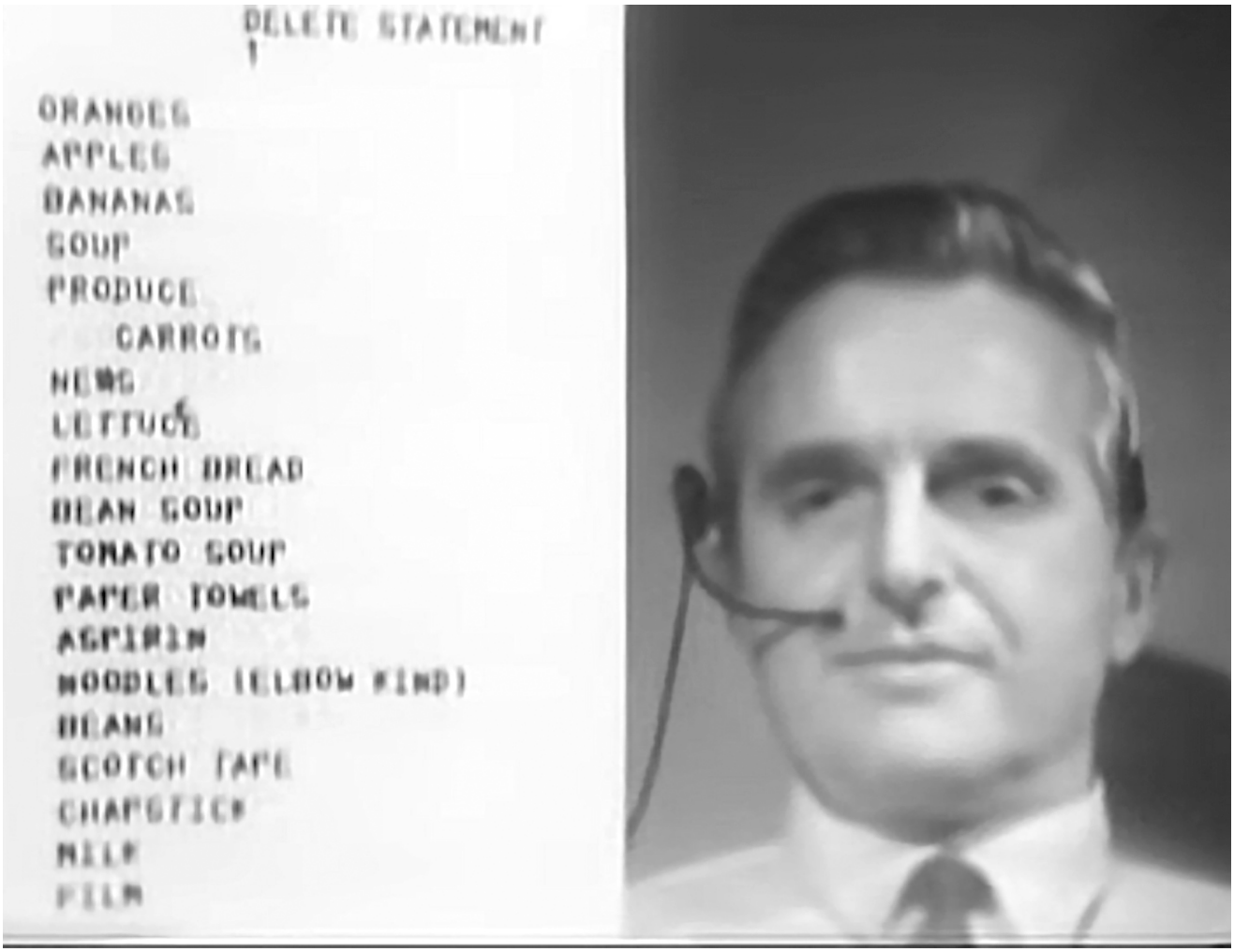
Source: https://www.filmweb.pl/serial/Mr.+Robot-2015-733795 (accessed on 26/04/2019)

[4] *Colossus*, https://pl.wikipedia.org/wiki/Colossus (dostęp 26.04.2019).

[5] *Konrad Zuse*, https://pl.wikipedia.org/wiki/Konrad_Zuse (dostęp 26.04.2019).

Photo 3: Douglas Engelbart during the conference on "The Mother of All Demos"

Source: https:// www.youtube.com/watch?v=yJDv-zdhzMY&t=652s (accessed on 26/04/2019)



emergence of new meanings[6]. The essence of interactivity is the cultural aspect that causes in a person a certain kind of surprise or participation in the discovery process. Media expert Henry Jenkins describes modern culture as participatory, bringing together many media that are involved in the process of striving for a goal other than just technological possibilities[7].

[6] M. Filiciak, A. Tarkowski, *Alfabet nowej kultury. I jak interaktywność*, https://www.dwutygodnik.com/artykul/362-alfabet-nowej-kultury-i-jak-interaktywnosc.html (dostęp 26.04.2019).

[7] H. Jenkins, *Convergence Culture. Where Old and New Media Collide*, revised edition, New York University Press, 2008.

The genesis of modern multimedia solutions goes back to the hippie 1960s. While pop culture was developing in California promoting sexual freedom and drug use, futuristic visions of a personal computer were being developed in the community of enthusiasts of new technologies. Visions of the time are already a part of everyday life. In 1968, at a conference in San Francisco, Douglas Engelbart first presented a preview of a computer operating system featuring windows, hypertexts, links and video conferencing. The conference was registered and called "The Mother of All Demos", became an inspiration for companies such as Xerox or Apple.

All of the demonstrated elements have become the foundation of the global process of creating emails, Skype-type applications, and Google-like browsers. Participants of the meeting stated that Engelbart was under the influence of drugs, especially since he handled the entire presentation with a handheld controller, which he called a "mouse". The accusations did not come out of nowhere, as at the time Engelbart defended the claim that LSD was a substance that had a beneficial effect on the human mind. Probably not without such support, the modern mouse was created and patented in 1970. Engelbart never received much benefit from this; his invention was ahead of the possibilities at the time, the patent expired in 1987, and then the Stanford Research Institute resold the license to Apple for about $ 40,000. Engelbart and his own team known as the "Augmentation Research Center" worked on the idea of a personal computer and conducted research on communication through the virtual ARPANET network, which became a precursor to the Internet. He wanted to create a computer operated using its display. This work on the graphic user interface became the basis for Apple Macintosh and Microsoft Windows operating systems only in the 1980s and 1990s.

In 2017, the Design Museum in London displayed an exhibition entitled "California: Design Freedom"[8] that answers the question: how has California gained such a strong influence on contemporary design? The exhibition shows how counterculture ideas of the 1960s have evolved into a culture of new technologies in the Silicon Valley and how Californian design has become a global phenomenon. Exhibition curator Justin McGurin comments on the exhibition in these words: "When we think of Californian design, we mean Charles and Ray Eams in terms of the mid-20th century modernism. During the exhibition we wanted to focus on what was next and show how the hippie movement, combined with the culture of hackers, developed tools for personal liberation."[9]. The

[8] *California: Design Freedom*, https://designmuseum.org/exhibitions/california-designing-freedom (dostęp 26.04.2019).

[9] *Designers on acid: the tripping Californians who paved the way to our touchscreen world*, https://www.theguardian.com/artanddesign/2017/may/11/design-museum-california-designing-freedom-tech-design (dostęp 26.04.2019).

Photo 5: Personal computer: Apple Macintosh, 1984

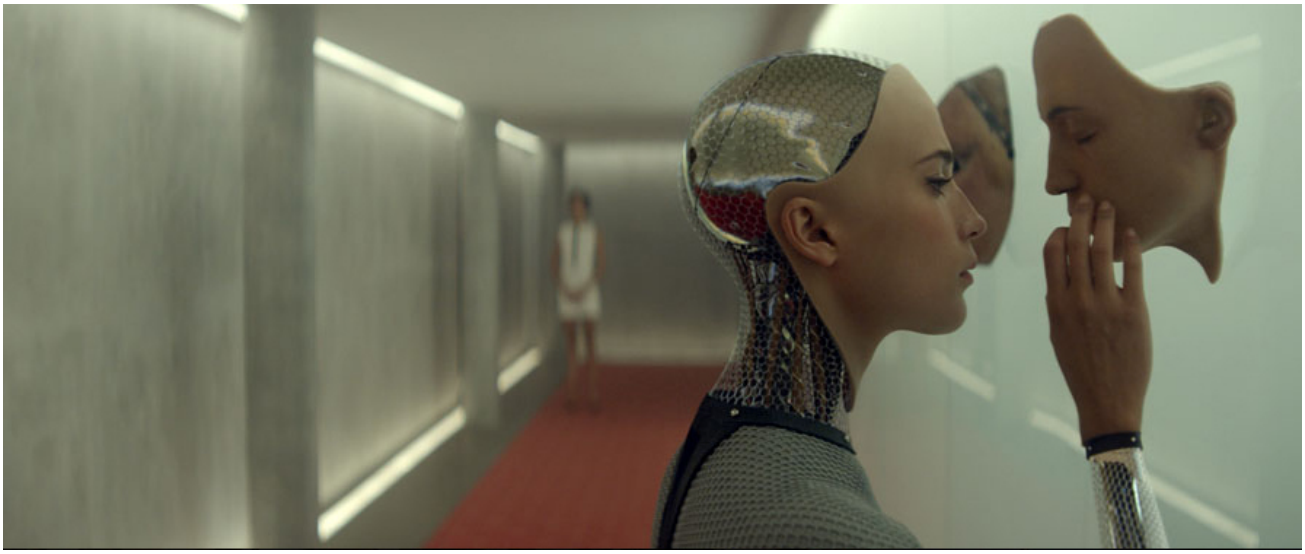
Source: https://designmuseum.org/exhibitions/california-designing-freedom/make-what-you-want (accessed on 26/04/2019)

ideas that Douglas Engelbart, Steve Jobs and Steve Wozniak worked on cemented the modern look of the personal computer interface. It is thanks to them that the operation of the device is intuitive, the appearance of documents resembles a white sheet of paper, the launch screen brings to mind the desktop, while unnecessary documents can be easily removed by dragging them to an icon that looks like a trash can. All the solutions that Silicon Valley developers and designers have been working on take us into the realm of cyberspace.

Speaking of all kinds of electronic hardware supported by the built-in chip, we use the generic word multimedia. This term means devices transmitting information in the form of interconnected audio or visual recordings. The meaning of the word comes from the Latin multum and medium. Current technological solutions allow you to freely combine the image with sound, sometimes even with smell or taste. All these connections are aimed at better providing information to the public or enriching everyday life through entertainment. Thanks to the ability of multimedia equipment to

Photo 6: Artificial intelligence. Film frame from "Ex Machina".

Source: https://www.filmweb.pl/film/Ex+Machina-2015-686419 (accessed on 26/04/2019)



connect to the Internet, they become an intermediary between the real world and cyberspace. Constantly improved devices allow for easier and more precise operation, and increasingly also replace people in everyday tasks. Devices become autonomous and are therefore referred to as equipped with artificial intelligence. The term was formulated in 1956 by John McCarthy. The term was then elaborated by Andreas Kaplan and Michael Haenlein who described AI as "the ability of a system to correctly interpret, learn from, and use external data to perform specific tasks and achieve goals through flexible adaptation."[10]

This wide range of scientific research related to computer science, philosophy, neurology and psychology leads to the realization of human dreams about machines endowed with human properties and even surpassing them. Colloquially, the term about the use of AI in electronic devices is not always used in relation to relevant interactive solutions. Often only a repeatable algorithm determines the ability of the device to respond to an impulse input by a human. The development of AI research aims to create mechanisms that can respond on an ongoing basis to events unforeseen in the system programming process.

[10] *Artificial intelligence*, https://www.sciencedirect.com/science/article/pii/S0007681318301393 (dostęp 26.04.2019).

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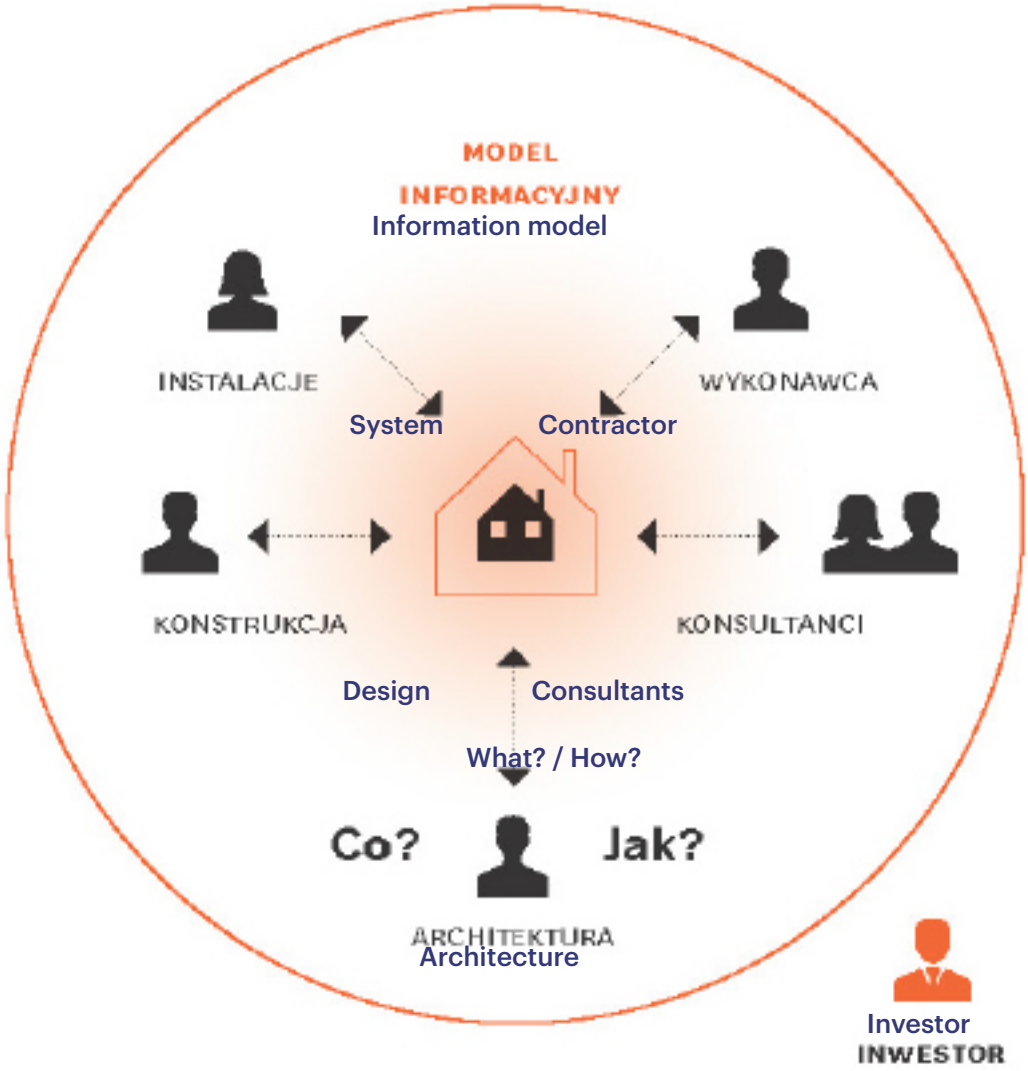
Architecture as a medium of interactions

Interactivity in architecture is strongly intertwined with the hi-tech style. This trend belongs to the group of postmodern styles. Its origins can be seen in the first half of the 20th century, when architects became interested in groundbreaking machine design solutions, space exploration or the latest telecommunications technology, mainly computer. Extensive inspiration spurred the desire to use new technological solutions when designing architecture. This development was accompanied by exploratory ways of using glass, concrete or steel, used as a building material. More electronic solutions were used, e.g. automatic blinds, air conditioning, hydraulic control systems or the first solar panels. Such elements strongly influenced the appearance of the building, both internal and

Illustration 1

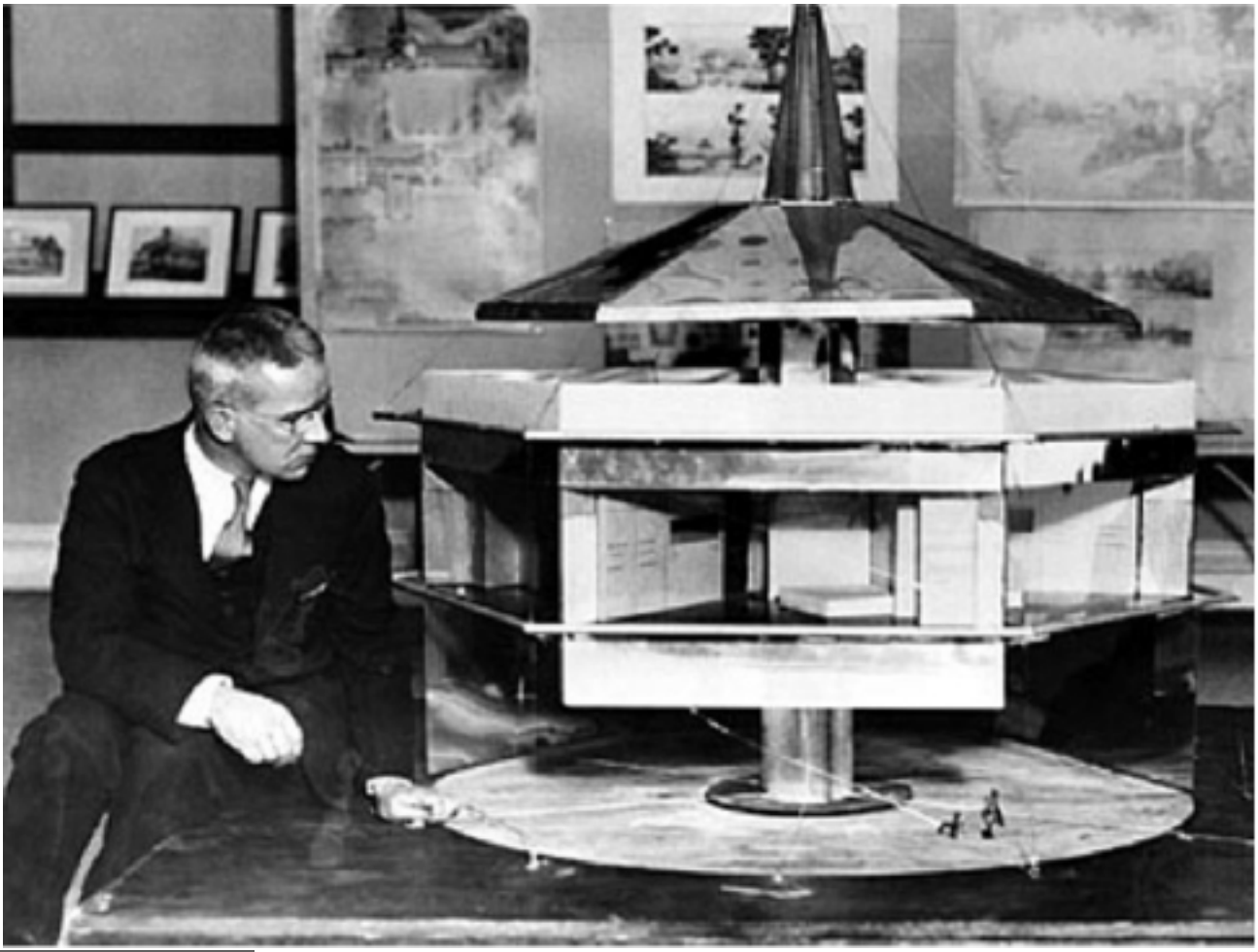


external, and its construction. Designers did not hide the latest technological solutions; on the contrary, they boasted of the steel structure, air conditioning system or other technical elements, leaving them in view, without the use of finishing linings or parges. The increasing use of escalators and elevators has improved vertical communication. The electronics integrated within a single system gave the possibility of better controlling and programming many functions. All such solutions are related to the concept of "smart building".

American engineer, inventor and philosopher Richard Buckminster Fuller is considered a pioneer of the hi-tech style[11]. His projects were called "futuristic" and were known as early as in the 1920s.

Photo 7: Richard Buckminster Fuller and his Dymaxion House of 1927

Source: https:// pl.pinterest.com/pin/112308584430763723/



[11] J. Pile, *Historia wnętrz*, Warszawa: Wydawnictwo Arkady Sp. z. o. o., 2004.

Many works were stopped at the stage of prototypes called by him “Dymaxions” (the term was created from a combination of the words “dynamic” and “maximum”). Fuller was one of the first to use electronics and mobile elements in architectural designs. His Dymaxion House ob 1927 had a centrally located duct through which electrical lines were routed. We now know that interactivity often involves mobile elements that create a user-modifiable interior. Such an example is the prefabricated bathroom designed by Fuller, which can be transported as a single unit and, thanks to the integrated hydraulics system, installed anywhere. The object seemingly far from our notions of interactivity draws attention to the technology that allows architecture to adapt to human needs.

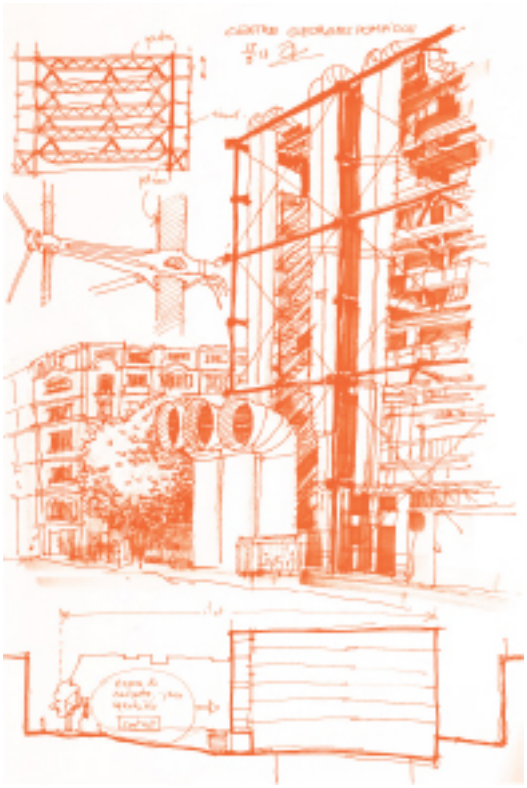
The concept of architectural interaction emerged in 1964 when Cedric Price, on the example of the Fun Palace project, described architecture as a form of service that allows configuration according to the requirements of its users. This project has never been implemented. Price argued that architecture should serve a person for as long as he or she needs it. If its function is no longer valid, the building should be demolished and another building built in its place. According to Cedric Pric’s wish, the Inter-Action Centre building was demolished after his death. Important in the discussion about the future of architecture was Warren Brodey’s *The Design of Intelligent Environments: Architecture Soft* published in 1967. Brodey described a self-organizing intelligent architecture environment that meets users’ expectations[12]. Similar research was conducted by architect Charles Eastman who, in 1972, presented an adaptive system through which architectural objects can receive information from the user and adapt themselves to the current situation. Eastman is also considered one of the first developers of the application of the BIM system for the implementation of architectural projects[13]. The development of information technology has had a strong impact on designers, resulting not only in the use of computer software that supports building functions but in how design and implementation work is carried out. In the early 1970s Eastman created a system called Building Product Models, and its modern version is the Building Information Modeling (BIM). The system consists in the digital recording of the architectural design in the form of a 3D model. This method allows you to build a building virtually and develop a range of functionalities and technologies of execution. The concept of “building information modeling” provides for the creation of a digital version before construction begins in order to eliminate any problems. The digital recording of the project in the form of a 3D model contains much more information than a flat drawing. So prepared project goes into the hands of many specialists and can

[12] W. M. Brodey, *The Design of Intelligent Environments: Architecture Soft,* „Landscape” Autumn 1967.

[13] P. Bujak, *BIM – geneza i praktyka*, http://www.iwb.com.pl/projektowanie/bim-geneza-i-praktyka.

be tested in virtual reality. This allows future interactions in the projected facility to be precisely designed and to not only respond not only to human signals but adapt, for example, to changing climatic conditions. Following this trail, interactivity will also appear between the environment and the object. Thanks to the BIM system, the prepared 3D model of the building can also be part of a mobile application or of other computer software that is used to operate the interactive object.

Illustration 2



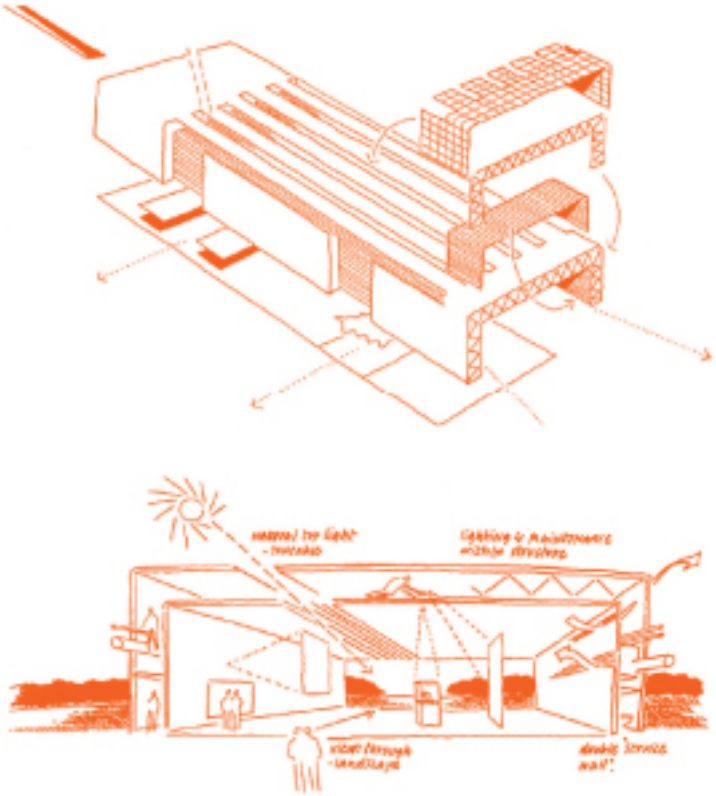
A very important point in the evolution of interactive architecture is the Centre Georges Pompidou building in Paris. This Paris' icon of the hi-tech style designed by Renzo Piano and Richard Rogers show similarities to the Fun Palace in Paris, as Cedric Price's designs inspired many creators. The architects, working on the cultural center, were guided by the idea of free creation of space and of moving its elements. In 1977 a multifunctional building was put into operation, which is designed to adapt to various functions and events organized within the cultural institution. Under one roof there is a museum of contemporary art, a source library, an industrial design centre and a centre for music and acoustic research. In addition to these basic institutions, there is also a bookstore, theater, restaurant, office space and a children's playroom[14]. The building gives the

[14] M. Irving (red.), *1001 budynków które musisz zobaczyć*, przeł. E. Balcer i in., Poznań: Publicat 2007, s. 604.

impression of being turned “inside out” through hi-tech-specific outdoor systems, located on the façade, giving the interiors more opportunities to change the arrangement. This is also facilitated by the system of moving walls and partitions. The building meets the needs of users by being able to adapt to a specific situation. Not everything is done with the help of computer software. The object is interactive because it can adapt to different situations but, for this to happen, the users need to do a lot of manual work.

Norman Foster is another architect whose work is part of the hi-tech trend. A good example is the Sainsbury Center for Visual Arts built in 1978. This is a gallery with a collection of artworks by Robert and Lisa Sainsbury. The basic structure made of prefabricated steel, covered with notched aluminum panels, creates a building founded on a rectangular plan. The main exhibition space is a large hall the span design of which is free from partitions that would confine the interior. The lighting was mounted under the vault on a steel truss, also giving the possibility of personalization. Rest and recreation rooms or offices do not interfere with the main function as they were placed between the aluminum panels and the structure of the building. In this case we are also dealing with a flexible interior giving a lot of arrangement possibilities through modification.

Illustration 3



When thinking of architecture as a tool that should do the work, designers pay attention to fine-tuning all the functional elements. Architecture is designed to serve man, make human life easier and exist in harmony with the environment. In search of contemporary architectural icons, the discussion is not only about the visual aspects but also about those characteristics that determine the quality of the task performed. Space optimization, the use of mechanical elements, mobility, which allows the movement of entire systems, and computer systems that control the entire object create a building that is a coherent organism designed to serve people. Similar trends can be seen in David Fisher's design of the rotating skyscraper for Dubai. In his concept the building reacts to changing environmental conditions and rotates individual levels, following the sunlight and wind direction. Another example is the Institute of the Arab World in Paris, completed in 1987, by Pritzker Prize winner Jean Nouvel. The façade of the building is filled with electric shutters changing under the influence of sunlight, which let a desired amount of light into the interior. There are many examples of mobile architectural solutions but it is impossible not to mention the Chanel Contemporary Art Container, the exhibition pavilion designed by Zaha Hadid. The building traveled around the globe for two years, acting as a banquet, exhibition and promotional venue.

Every year similar examples arrive because some solutions become standards when designing public facilities. Auto-opening roofs for stadium construction, movable walls in display buildings or green solutions in passive houses are increasingly being used. Summing up this part of the article, it can be concluded that architecture equipped with computational capabilities and with advanced electronic, mechanical and material technologies can interact with people and their immediate surroundings.

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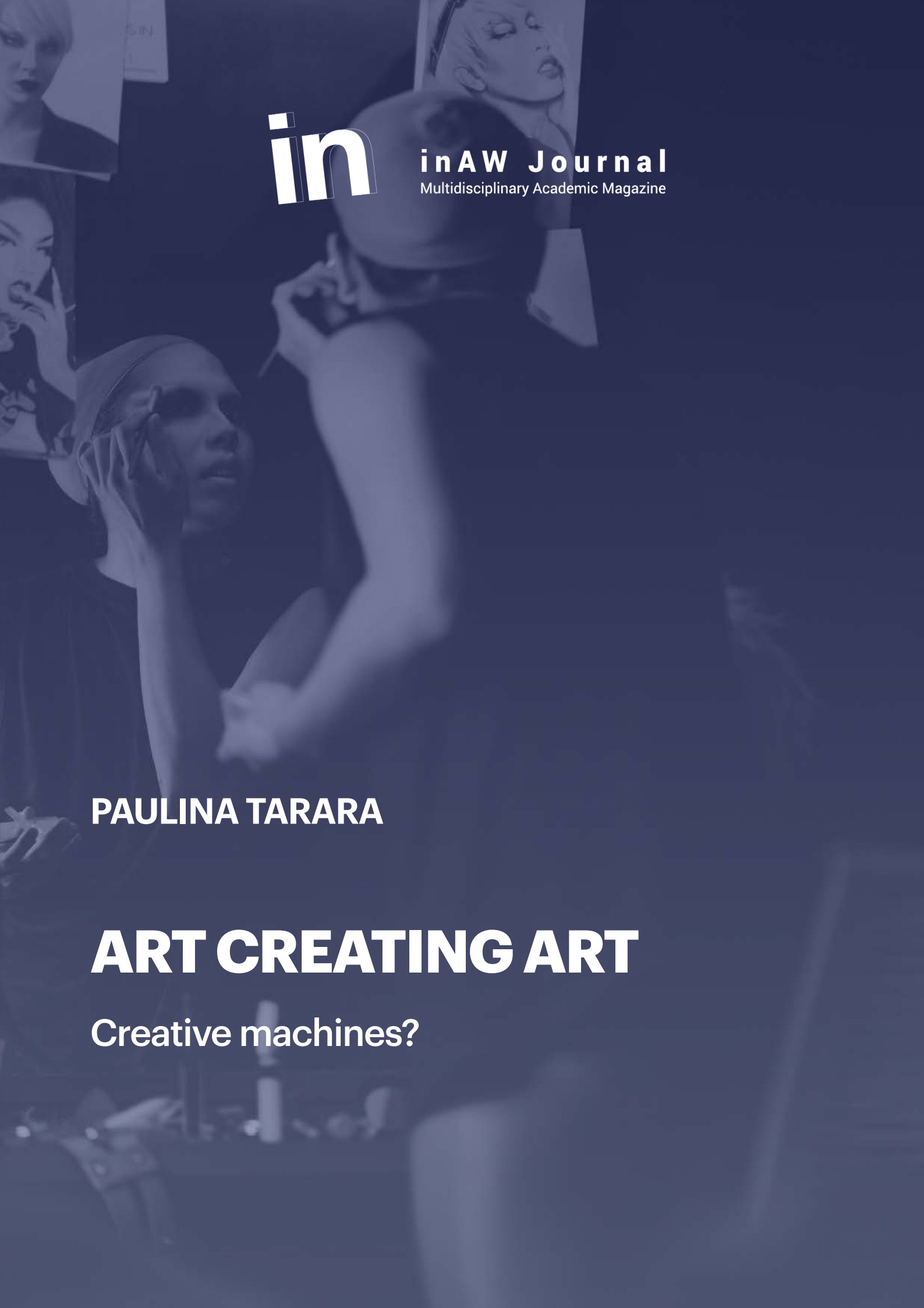

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PAULINA TARARA

ART CREATING ART

Creative machines?

ABSTRACT

In the first part of the article I am going to present the definition and the onset of generative art, based on the example of Harold Cohen's AARON and Simon Colton's The Painting Fool. In the second part, I am going to describe the contemporary trends in generative art, based on the example of the machine imitating Rembrandt and Elgammal's Adversarial Network.

KEYWORDS

Berlyne Daniel Ellis ; Cohen Harold ; Colton Simon ; Elgammal Ahmed ; algorithm ; CAN (Creative Adversarial Networks) ; CNN (Convolutional Neural Networks) ; discriminator ; GAN (Generative Adversarial Networks) ; generator ; meta-algorithm ; global approach ; local approach ; feedback system ; generative art ; machine vision ; AARON ; The Painting Fool ; The Next Rembrandt

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Art creating art

Creative machines?

Introduction

Art has been accompanying humans since the beginning of times. Creating is inseparably a part of the development of our species. Without creating, neither art, nor inventions would exist. Creativity results in the shifting of borders, gaining new areas of knowledge and using them in practice, in everyday life. It all started inconspicuously, nevertheless, over time simple rock tools transformed into contemporary supercomputers. In this article I would like to outline the new perspectives which open up before us, as creators: creating objects that are able to create. Based on the example of Harold Cohen's AARON and Simon Colton's The Painting Fool, I am going to present the first steps taken towards the creation and the development of "creative" machines. In the further part, while describing GAN and The Next Rembrandt project, I am going to point to the new tendencies in the use of algorithms inspired by biology (evolution, neural networks, adversarial systems) in the creation of art that creates art. The article presents these matters with taking into consideration various types of algorithms applied as the source of the "creativity" of machines.

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Generative art

Generative art is art which refers to artistic practice that applies a system (a set of rules). The elements which may be those rules include a natural language, a computer program, a machine or another invention that uses procedures. This system also has "some degree of autonomy contributing to or resulting in a completed work of art"[1]. An important element of generative art is the randomness in which the autonomy of its process is expressed. It may be defined in various ways: based on probability (e.g. on a generator of random numbers with constant or varying probability) or a chaotic system (which may make the impression of one that is completely unpredictable, however, there is rationale for the existence of short term cause and effect relationships, as it happens in forecasting the weather from one day to the next).

Generative art may be considered as weak or strong[2]. The first category includes the works in which the artist prevails and the role of the system is limited to being a tool - even when this tool has a high dose of freedom and inspires or supports the implementation - the final outcome mainly depends on human and his or her decisions. In the second category, it is the system that has high autonomy, and the role of human ends on writing the code, creating the device which gives birth to art.

Such a definition of generative art is independent of whether it was produced with the use of highly developed technology or not. Nevertheless, in this article, I want to concentrate on the practice which applies a computer as the environment for creative algorithms. I understand artificial intelligence, the examples of which I am going to present in the text, as programs whose output data is not the result of numerical transformations of algorithms, but of the constant correction of algorithms under the influence of feedback (the feedback system). In case of AARON and The Painting Fool, the creators of the program play the role of the active feedback system correcting the algorithm. In the other cases mentioned by me, the feedback system are other algorithms.

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[1] Definition according to: P. Galanter, What is Generative Art? Complexity Theory as a Context for Art Theory, p. 4, http:// www.philipgalanter.com/downloads/ga2003_paper.pdf [accessed on: 25 July 2020]..

[2] *Ten Questions Concerning Generative Computer Art, ed. McCormack J. et al., 2012, p. 2, http:// jonmccormack.info/wp-content/uploads/2012/10/TenQuestionsV3.pdf [accessed on: 25 July 2020].*

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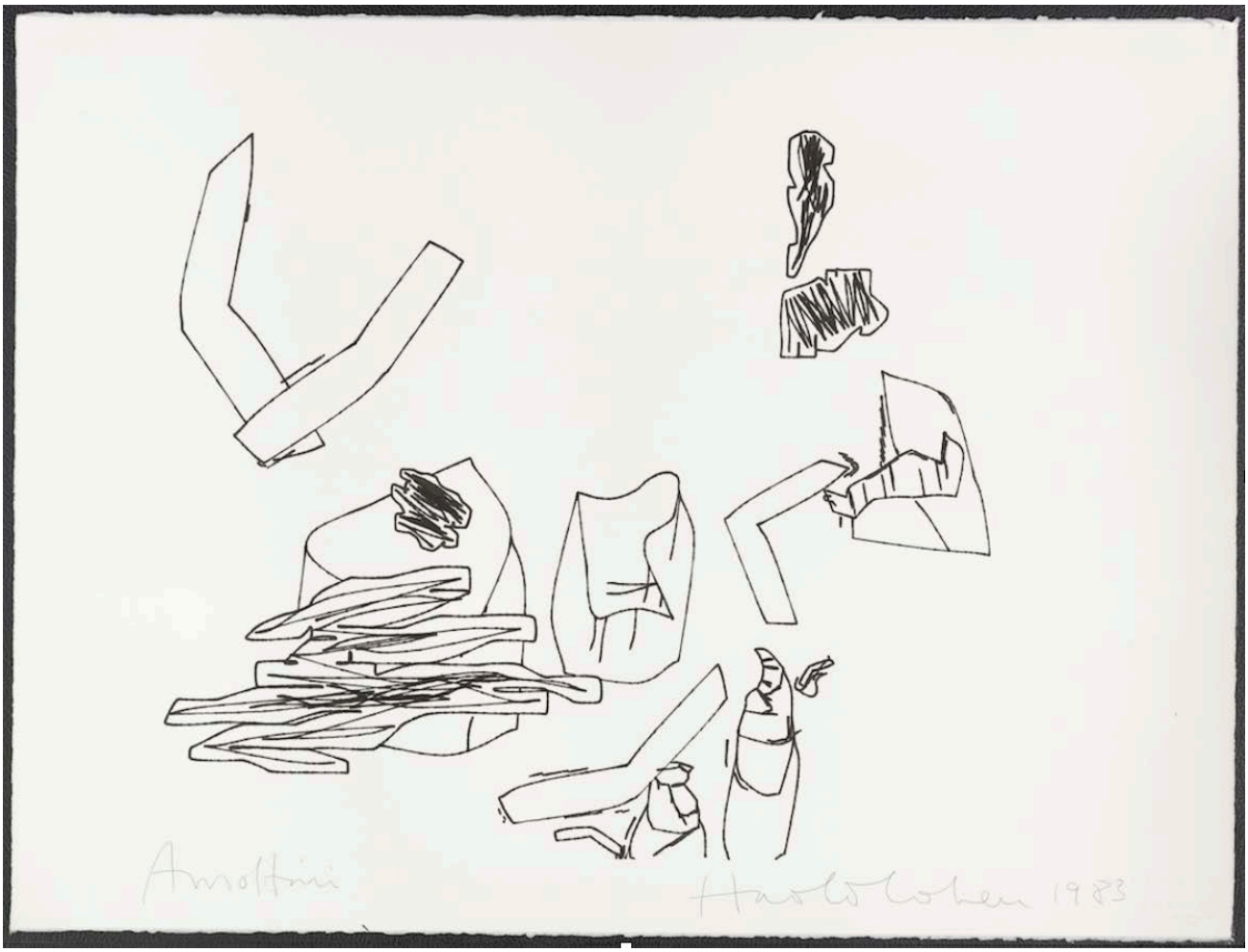
Harold Cohen, a plotter drawing, ink on paper, 57 cm × 76 cm, 1983.



Source: https://www.nytimes.com/2016/05/07/arts/design/harold-cohen-a-pioneer-of-computer-generated-art-dies-at-87.html [accessed on: 28 July 2020].

Weak generative art

AARON

Harold Cohen was the first artist to create artificial intelligence used for drawing, named AARON. AARON's works evolved over the years: from abstract images inspired by the petroglyphs of native Americans and early childhood drawings to figurative representations. The, initially, black and white drawings evolved into colourful images. AARON's code was created by Harold Cohen specially for

the needs of that project (today we have the possibility to use *open source* software, to implement it into the projects that are being created and to actively modify them). The program was being developed for the artist's whole life, for over 40 years, starting from 1972 when the machine and its art were presented at an exhibition at the Los Angeles County Museum of Art.

The data (image) entered into a computer, subjected to processing and returned as a result, was insufficient. It lacked a feedback system which the result could be subjected to, similarly as it takes place during the process of creation performed by human. Cohen understood art as the sum of decision processes that are subject to assessment and modification[3]. He tried to understand what set of signs is considered a complete image. He equipped his machine in that knowledge. It was the reflection of how Cohen understood art and the process of creation.

AARON's code is a code of a global type[4]. This means, that there is a set of instructions based on the function "if..., then...". The algorithm does not learn by itself. It is limited by the accuracy of its creator - by the number of situations that can be foreseen by the programmer that, step by step, implements the instructions according to which the algorithm lives. Every image created by AARON was different and was not based on the already existing resources. The program was only based on the set of rules that Cohen equipped it with. In order for the process of image creation to be to some degree autonomous, and in order for the images not to repeat, the author used a random number generator[5]. Initially, the program was only composed of basic rules referring to the types of lines and shapes, their proximity, permeation, composition. For years Cohen was gradually supplementing them with everyday objects, biological forms: humans, animals, plants. Until the end of his life he was modifying the program and he was its only "coach" and feedback system.

When, for instance, AARON was supposed to paint a human, it started from points on a flat area, subsequently it joined all the points together in accordance with the set rules, for example, the hand

[3] G.D. Taylor, When the Machine Made Art. The Troubled History of Computer Art (published online: Bloomsbery, 2014), p. 128.

[4] M. du Sautoy, Kod kreatywności. Sztuka i innowacje w epoce sztucznej inteligencji [The Creativity Code: Art and Innovation in the Age of AI], translated into Polish by T. Chawziuk, Kraków 2020, p. 130.

[5] M. du Sautoy, Kod kreatywności. Sztuka i innowacje w epoce sztucznej inteligencji [The Creativity Code: Art and Innovation in the Age of AI], translated into Polish by T. Chawziuk, Kraków 2020, p. 130.

Harold Cohen and AARON at work

Source: https://dam-gallery.de/haroldcohen-preview/?lang=en [accessed on: 28 July 2020]

is connected with the body, two hands can overlap one another due to the perspective, but cannot ever connect because in three-dimensional space they are in different planes etc.[6]

Cohen perceived art as a series of actions after which, every time, there is critical analysis, and on the basis of this analysis the decision regarding the subsequent action steps is made. Such a system is also used in machine learning. In machine vision, when, for example, we teach artificial intelligence to recognize dogs in images, the machine makes the decision: “this is a dog”, which it subsequently compares with earlier results obtained during training. After this activity it may turn out that in the image there is no dog after all, and a correction is made in reference to the result. This is a feedback system. Thanks to it, it is possible to introduce corrections, improve the object of action and generate better results. In case of AARON, it was Cohen who accepted or rejected the images produced by the

[6] H. Cohen, The Further Exploits of AARON, Painter, 1994, p. 6, https://pdfs.semanticscholar.org/171f/19892e6c50293390791d377f0750e41df21f.pdf [accessed on: 28 July 2020].

machine. He played the role of a meta-algorithm which, in the contemporarily created artificial intelligences, on its own modifies the algorithms subordinate to it during training and learning.

If we look from the perspective of the program autonomy, AARON was never fully independent from its creator (weak generative art). Cohen, himself, did not consider AARON a fully autonomous machine:

> Over the years of what Cohen called a "mutual" relationship with his "other half," he and Aaron created both realist and abstract paintings[7].

He created a machine with which he cohabited in creative symbiosis. Initially, he painted AARON's linear drawings and over time he gave the machine more and more space for independent action. In result, it was a continuous creative cycle in which the machine inspired Cohen and these inspirations were translated into the machine's feedback system which was the artist himself; this had an impact on AARON's further art. I consider AARON's example important because the artist kept improving the algorithm until the end of his life, thanks to which the program kept constantly evolving, achieving very interesting and important effects, thus opening a discussion about the possibilities for creating a creative machine.

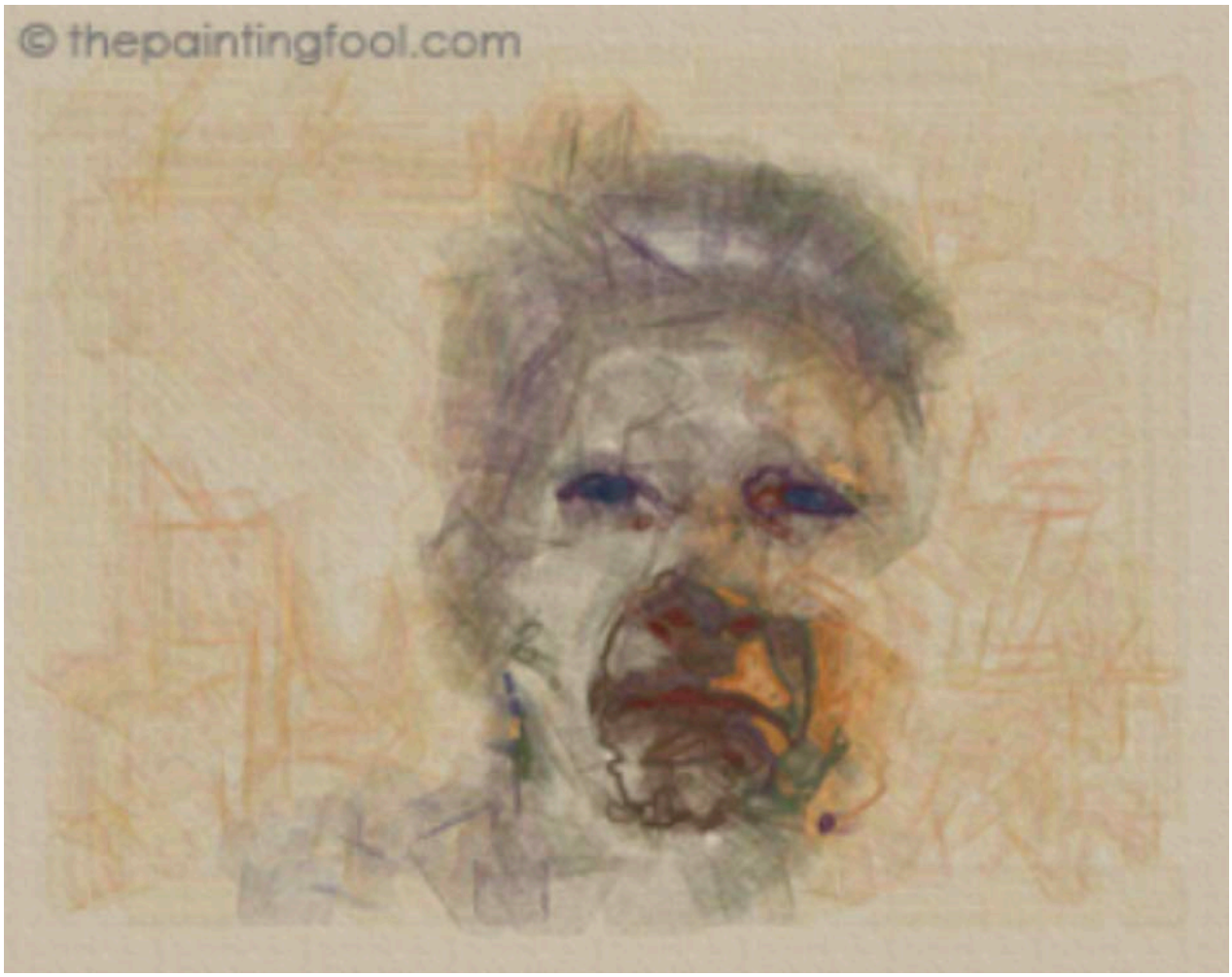
The Painting Fool

The Painting Fool belongs to Computational Creative software[8]. This means that the program has got a certain degree of autonomy and, within the scope of this autonomy, it makes decisions in the course of action. The project was initiated by Simon Colton in 2001, and subsequently it was developed at the Computational Creativity Research Group at Goldsmiths College in London. In 2006 Simon Colton named his program The Painting Fool for the first time. The author of the project wants the program to - thanks to training and improvement (also through becoming familiar with human creativity) - go beyond the contemporarily existing generative art projects: to show the ability of self-

[7] E. Callen, The True Potential of Computational Creativity: Technology and Humanity, https://www.30secondstofly.com/ai-software/harold-cohen-and-computational-creativity/ [accessed on: 28 July 2020].

[8] S. Colton, The Painting Fool: Stories from Building an Automated Painter, [in:] J. McCormack, M. d'Inverno, Computers and Creativity, Berlin 2012, p. 28.

Zmęczony i rozemocjonowany [Tired and emotional], Machine Intelligence Competition, Peterhouse, Cambridge, December 2007.



Source: http://www.thepaintingfool.com [accessed on: 29 July 2020].

criticism and be able to place itself in a broader cultural context. Its aim is not being the artist's tool which helps to create, but to one day become a fully autonomous artist painter[9].

In contrast to AARON, in case of which only one person, the author of the algorithm, was the feedback system and its only coach, the authors of The Painting Fool decided to collaborate with artists who became teachers. The Facebook community was also engaged in the assessment of the works presented by the machine. The analysis refers to both, images that were assessed positively as

[9] S. Colton, The Painting Fool: Stories from Building an Automated Painter, [in:] J. McCormack, M. d'Inverno, Computers and Creativity, Berlin 2012, p. 31.

well as negatively, in order for The Painting Fool to be able to make critical decisions referring to its works on its own in the future.

Colton believes that one of the important aspects of being an artist painter is the aware selection of the painting style. In order to simulate that, with taking portraits as the starting point, the author decided to assign appropriate painting styles to particular feelings reflected in the face, in order to underline the emotions of the person whose portrait is being painted. The source selected by Colton were the stills from the film *Fabuleux Destin d'Amélie Poulain*, presenting the main actress in various emotional states. Applying the trial and error method, manually assigning painting styles to particular emotions, he created portraits that were satisfying for him. This way, a base of about 100 painting styles assigned to particular amotions was formed. A part of them were generated by The Painting Fool randomly, however, all of them were assessed by the author who acted as a feedback system[10].

In order to create the impression of internal life that is possessed by every human, and from which artists draw inspiration, the author of the algorithm decided to make the emotional mood of The Painting Fool dependent on articles published in "The Guardian" on a given day. This experiment took place during the first edition of the Festival of Computational Creativity in Paris in July 2013. The program scanned the issue of the newspaper, looking for key phrases which then influenced the emotional state of The Painting Fool on a particular day. This is more strongly embedded in the reality of the world surrounding us than a generator of random numbers, and it still demonstrates an element of unpredictability. When the articles read by the algorithm are very negative, the program is even able to refuse to paint, giving the most negative phrase from the saddest article as the reason. When the articles are positive, The Painting Fool chooses from among nine pleasant words defined earlier, such as: "colourful", "happy" etc. and it paints a portrait in the style defined earlier, associated with the pleasant mood[11].

Both, The Painting Fool and AARON, belong to global algorithms and they are examples of weak generative art. Without authors who are responsible for the critical analysis and who react, changing

[10] The effects of the project may be viewed at the website: http://www.thepaintingfool.com/galleries/amelies_progress/ index.html.

[11] S. Colton, You Can't Know my Mind: A Festival of Computational Creativity, http://www.thepaintingfool.com/galleries/you_cant_know_my_mind/ICCC_YCKMM.pdf [accessed on: 29 July 2020].

its code, the machine would not be able to learn, adjust to the problems it is confronted with and improve its works. The creativity of machines is based on the creativity of the author.

Strong generative art

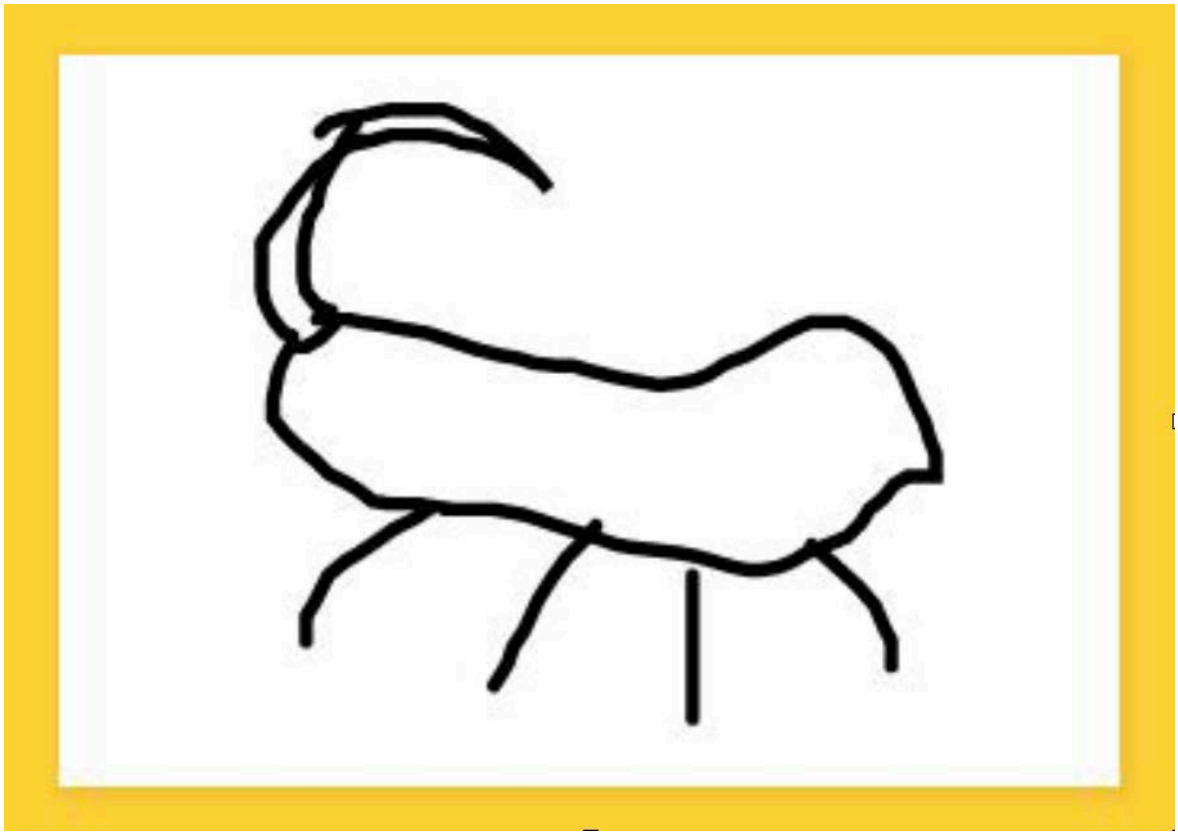
In the previous examples, human was not only the creator of the algorithm, the person pressing the "start" button, but also he or she actively participated in the decision making process as the feedback system. Human improved the algorithm, simply by changing the code or writing its further lines, trying to foresee all the possible situations which the machine would have to face. Human's role was inevitable in the process of the algorithm's functioning. The author could track the written code, he or she precisely knew what its particular parts were responsible for. This holistic approach is referred to as global. Currently, the code itself does not tell us everything about the functioning of artificial intelligence. Machine learning is based on the constant correction of algorithms under the influence of the feedback information until the moment of obtaining satisfying results. In this case, the feedback system is not human – the author of the algorithm – but another algorithm. Such auto-analysis of results is referred to as local approach. The decision tree which is, to a certain degree, possible to be tracked, does not always give clear presumptions referring to the path that was chosen by the algorithm for the purpose of achieving the defined target. For example, in machine vision (when we want to teach the program to recognize dogs) the algorithm asks the image a lot of questions, for example, whether the animal in the image has four legs. However, these questions evolve as the algorithm learns, and we cannot know what set of questions it uses to achieve its target. Especially that, while learning, the algorithm asks less and less of these questions because it uses the already gained experience and it learns from its mistakes.

We can observe the way in which machines make decisions on the following website: https://quickdraw.withgoogle.com. It is a simple game of charades, in which we draw and the artificial intelligence guesses what we have drawn. In the beginning of the game, we get the topic of the drawing. My task was to draw a scorpion.

Unfortunately, my scorpion was not perfect and the algorithm did not guess what kind of animal it was. After finishing the game, one can ask the program to explain its track of thought. The nearest association in this case was a horse. The second and the third one were, respectively: a flamingo and, surprisingly, knees. As we can see, the associations of the algorithm and human associations are not completely identical.

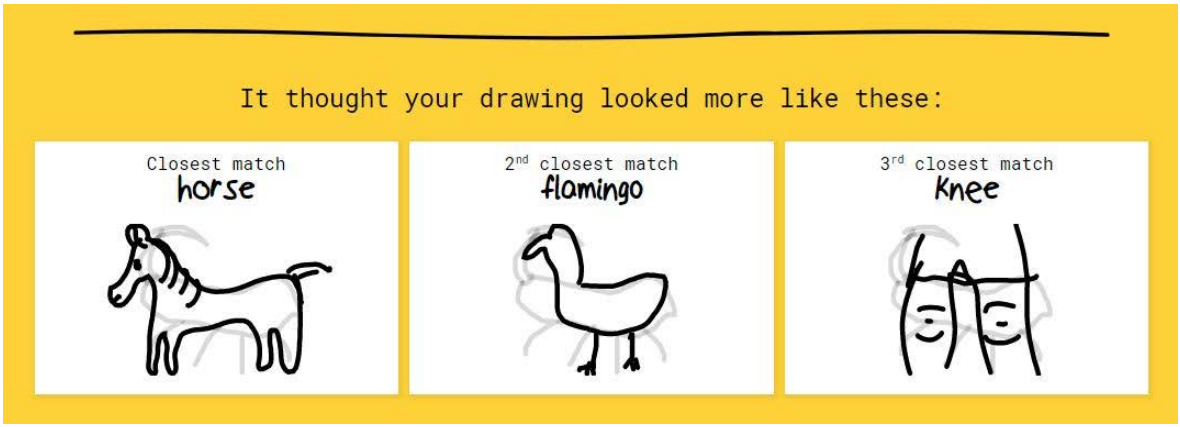
My scorpion looked like this:

How the author of the article sees a scorpion



Source: https://quickdraw.withgoogle.com [accessed on: 30 July 2020].

How Google's artificial intelligence sees the author's drawing



Source: https://quickdraw.withgoogle.com [accessed on: 30 July 2020]

Currently, more and more initiatives associated with artificial intelligence in the world of art are being created. In the further part, I will show two examples of projects in which the authors based the artistic activity of their algorithms on machine learning. These are examples of strong generative art .

CAN vs Art Basel[12]

In this project the authors based on a theory saying that art is not created from nothing, it is the result of the artist's constant exposure to past and contemporary generations of authors and their works. Additionally, newly created art cannot be identical or strongly similar to one which already exists (the allegation is a lack of creativity), nor differ too strongly from the current standards (it is rejected by broader audience and treated as strange). The ideal artificial intelligence creating art is supposed to find balance between the old and the new, its works have to fit within the limits of what is currently accepted as manifestations of art. According to D.E. Berlyne:

> the most important aesthetic properties are novelty, surprise, complexity, polysemy and forcing to asking questions. Art is based on achieving novelty and surprise without so strongly differing from what may be expected that interest turns into revulsion because the outcome seems bizarre[13].

In order to achieve that, the starting point for the program created by Ahmed Elgammal and his team are the established and commonly accepted existing norms and styles, so as to, on their basis, broaden the existing borders and search for new methods of expression, this way achieving something surprising and (not too) new. Despite the fact that the network which they created is based on existing movements, it creates art which does not belong to those movements, art which attempts to balance on their borders.

From the technical point of view, in order to cope with this task, Ahmed Elgammal used Creative Adversarial Networks (CAN). It is a variation of Generative Adversarial Networks (GAN) which were the basis for creating CAN by Elgammal. In both cases it is a system of two networks: the generator and the discriminator. The generator is a creative part and it creates images from random

[12] Based on: A. Elgammal et al., CAN: Creative Adversarial Networks Generating "Art" by Learning About Styles and Deviating from Style Norms, June 2017, https://arxiv.org/pdf/1706.07068.pdf [accessed on: 30 July 2020].

[13] M. du Sautoy, Kod kreatywności. Sztuka i innowacje w epoce sztucznej inteligencji [The Creativity Code: Art and Innovation in the Age of AI], translated into Polish by T. Chawziuk, Kraków 2020, p. 153.

input data, without having access to existing works of art. The discriminator, in turn, in this particular case has got access to images from the publicly available base WikiArt (art from the 15th-20th century). It is a critical partner of the generator, it assesses the outcome and it plays the role of a feedback system. Thanks to the discriminator, the generator learns and, by changing the parameters of the algorithm, it may improve its works. In GAN there is one assessment step: the discriminator receives a generated image and it defines whether the image belongs to the training set (in this case - the WikiArt base) or not. In the case when the discriminator is not able to differentiate the work of the generator from the training set, the game ends. Unfortunately, this does not force the generator to create anything that would go beyond the existing art canons and would be at least in a small degree innovative, original. In order to achieve that, the second step of the discriminator assessment was designed. This is the way that the CAN networks function, basing their action on two steps of assessment, as distinct from GAN where there is only one. In the second step, the

Examples of images generated by the GAN networks

Source: Elgammal A., Liu B., Elhoseiny M., Mazzone M., CAN: Creative Adversarial Networks Generating „Art" by Learning About Styles and Deviating from Style Norms, June 2017, https://arxiv.org/pdf/1706.07068.pdf [accessed on: 30 July 2020].

Images presented in the Art Basel art fair in 2017

Source: Elgammal A., Liu B., Elhoseiny M., Mazzone M., CAN: Creative Adversarial Networks Generating „Art" by Learning About Styles and Deviating from Style Norms, June 2017, https://arxiv.org/pdf/1706.07068.pdf [accessed on: 30 July 2020].

discriminator attempts to match the image to an art style. This principle of operation may be perceived as a game between these two networks. On one hand, the generator tries to convince the discriminator that its work is an already existing artwork, on the other - it tries to mislead it in reference to the style in which this work has been created. The discriminator, in turn, tries to guess which art movement the image belongs to, thus forcing the generator to create images of best possible quality. Thanks to the balance of both networks, it is possible to achieve satisfying results. The existence of two steps of assessment, which are used by the discriminator, results in the fact that the generator is forced to discover new areas of art, without going too far away from existing standards and movements.

The results were subjected to assessment. Scientists juxtaposed groups of images: paintings of abstract painters from the years 1945-2007, paintings of authors presenting their works at Art Basel 2016 and the set created by the algorithm (CAN and GAN). The aim was to check the ability of those

surveyed to differentiate whether a given work of art was created by human or by a machine. The aim is reached when the differentiation is not possible. The results were surprising. Those surveyed much more frequently considered the images created by CAN (53%) to have been created by human than in case of the paintings presented at Art Basel (41%).

The above described creative networks have the ability to constantly learn based on the information about the existing painting styles delivered to them. It is one of the experiments that were successful and well received by recipients. In contrary to global algorithms, there is greater autonomy here (we are not always able to accurately track the way which the algorithm followed to achieve the desired result), and above all, the ability to learn and to adapt to the set external conditions (the fields of art and the standards currently applicable in them).

The Next Rembrandt

This project aimed at bringing one of the greatest Old Masters back to life, in order for him to create one more painting after more than 300 years. The team wanted to investigate what is hidden behind the artistic genius of the master. For that purpose, 346 paintings were collected and scanned in high definition. Due to the fact that this task involved various institutions, the definition of the scanned paintings was not the same. In order to create a uniform database, each of them was enlarged and the definition was increased by 300%. The noise was also reduced, thus retrieving data which was digitally renovated in case of paintings which were not preserved in perfect condition. The size of all the collected material was over 150 GB of data. That was the starting point for discovering the genius hidden behind the paintings.

During his whole life, Rembrandt was interested in various topics: from landscapes, through still life to biblical scenes. However, what fascinated him most were portraits. Due to this fact, it was decided that precisely a portrait would be the new work of the resurrected Rembrandt. The selected period was between the years 1632 and 1642. The paintings were analysed in terms of various aspects: the colour of the eyes, gestures, the location of facial elements, the lighting, with the use of Convolutional Neural Networks (CNN).

For us, humans, recognizing objects is one of the first things we learn. While looking at a cat, we know that it is a cat and the enormous number of breeds and colorations is of no significance here. Also a cat that lost its ear, tail or a paw in an accident, unquestionably remains a cat for us. This

ability comes naturally to us, which cannot be said in case of algorithms. They have to learn what makes a cat a cat. This is where CNN comes to help. It is a collection of layers which we can understand as filters. Each filter brings out the desired features and characteristic elements form the image. The inspiration for creating them was the visual cortex, because some of its fragments are sensitive to horizontal elements and other - to vertical ones. And this architecture of specialized components performing only specific tasks was used in networks responsible for machine vision. Subsequently, characteristic features are grouped and analysed, and the result is the classification of an element in the image. The algorithm is able to indicate the probability of a given element's belonging to a particular label, for example: 81% for the earlier mentioned cat, 13% for a llama and 6% for a dog. The more training data, the greater the probability with which neural networks provide results.

Visualisation of the functioning of CNN filters

Source: https://medium.com/@apiltamang/a-gentle-dive-into-the-anatomy-of-a-convolution-layer-6f1024339aca [accessed on: 10 August 2020].

The same mechanism was used by the team working on The Next Rembrandt project for recognizing the style of the great master: the composition that was turned into a geometrical pattern, the texture, the brushstrokes, the colour palette. The elements which were also analysed included the age of the people in the portraits, the direction towards which they were looking, the characteristic points of the face and typical proportions present in the paintings.

In the final stage of the work, the topic of the new painting of the algorithm master was selected: a 30-40 year old man, with a beard and moustache, looking towards the right, dressed in a black suit, with a white collar and a hat. What is important, the face of the painted person was not supposed to be the sum of all the faces painted by Rembrandt. In order for the master to be resurrected, the algorithm had to create a completely new face. In order to faithfully recreate the masterful brushstrokes, two types of algorithms were used, which analysed the texture and the way the paint was distributed on the canvas. The effect of the long work was composed of 148 million pixels on the screen and 13 layers of paint printed on canvas using a special plotter.

Rembrandt's new painting generated by artificial intelligence (on the left), layers of paint during printing (on the right)

Source: https://www.nextrembrandt.com [accessed on: 6 August 2020]

In this case, instead of broadening the current limits in art, the authors decided to teach a machine the style of one of the masters. The machine learned the master's style in 18 months, starting from the basics. The effect was the creation of a completely new work, bringing to mind Rembrandt's works. Was that a creative task?

The painting was commented in "The Guardian" by a British art critic, Jonathan Jones:

> What a horrible, tasteless, insensitive and soulless travesty of all that is creative in human nature [...]. You cannot, I repeat, cannot, replicate the genius of Rembrandt van Rijn. His art is not a set of algorithms or stylistic tics that can be recreated by a human or mechanical imitator. He can only be faked - and a fake is a dead, dull thing with none of the life of the original[14].

The aim of the project was not to create a new painting style, but only to repeat the style of the master. However interesting its outcome is, it is not creative. It does not broaden the adopted borders, it is not innovative, it only imitates, although it does it perfectly. Imitating is moving in the beaten paths, it is the opposite of creativity which goes beyond the generally accepted standards.

Conclusions

> Creativity is a mode of solving problems, which was created in order to break through the routine patterns in the moment when analytical thinking stops being effective[15].

Analytical thinking is thinking that is similar to an algorithm - with a specific selected path of action. The brain has to have the possibility to freely "have its head in the clouds", in order to create something creative and innovative. It is precisely the strange thoughts which seemingly do not fit to the topic at all, or mistakes, that give rise to innovation and creation, which differentiates the human way of creation from the machine one.

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[14] J. Jones, The digital Rembrandt: a new way to mock art, made by fools, „The Guardian", https://www.theguardian.com/artanddesign/jonathanjonesblog/2016/apr/06/ digital-rembrandt-mock-art-fools [accessed on: 6 August 2020].

[15] H. Beck, Mózg się myli. Dlaczego błędy mózgu są naszą siłą [Scatterbrain: How the Mind's Mistakes Make Humans Creative, Innovative, and Successful], translated into Polish by U. Szymanderska, Łódź 2017, p. 282.

In the latter one, the networks are set to solving the task in an actually quite defined way. The "creativity" of machines must not be mistaken for human creativity. The role of algorithms or neural networks is solving tasks efficiently and effectively, while creativity is something opposite: it is the resultant of mistakes, coincidence, poor efficiency, thinking outside the box. As for now, machines have no possibility to go beyond the path arbitrarily selected by the programmer. In contrary to the human brain which does not have one specific way of solving a given task. Creativity does not have to be logical or reasonable, because it is associated with breaking the established rules of procedure, which cannot be done by a machine[16].

By designing creative machines, we obtain new information about how our creativity functions. Many of the applied solutions draw straight from our biology and the perception of the world: neural networks designed in imitation of the cells in the human brain, evolutionary algorithms based on Darwin's theory of evolution or a feedback system which, also in our case, is an internal critic of our creative actions. However, despite the interesting and promising works of machines, machines are not autonomous. They are still unable to go beyond the frames imposed on them from the outside by their creators. We are the ones who provide them appropriate material for learning, in advance limiting the access to information, we push the "start" button and we decide whether the obtained outcome is worth of our interest. "Creative" machines still remain tools in the hands of creative people.

[16] H. Beck, Mózg się myli. Dlaczego błędy mózgu są naszą siłą [Scatterbrain: How the Mind's Mistakes Make Humans Creative, Innovative, and Successful], translated into Polish by U. Szymanderska, Łódź 2017, p. 271

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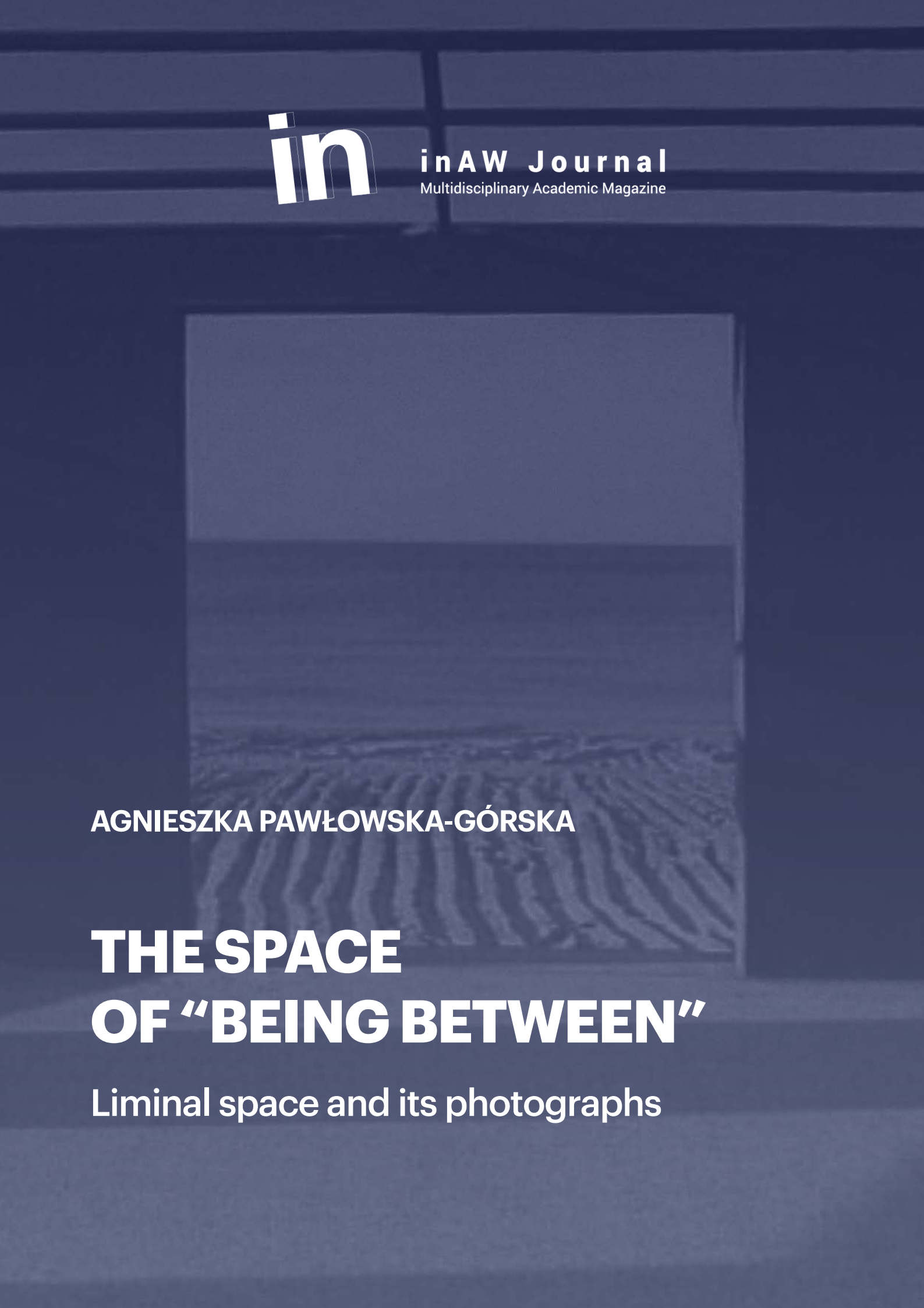

AGNIESZKA PAWŁOWSKA-GÓRSKA

THE SPACE OF "BEING BETWEEN"

Liminal space and its photographs

ABSTRACT

The article touches on the subject of space as a place, image and inspiration for psychological change. This is important for artists who are creatively observing and designing space so that they can create not only a place in the inner world, but also in the [outer] one. The art of designing and observing space can become a rite of passage (initiation). A ceremony in which the liminal space plays a central role – a place of transformation, waiting, being on the doorstep, in the transition between the present life and some new unknown form, "being in between" (betwixt and between). This is where the core of myself, my own self, my home in me, is revealed. Photography can become an image and assistant of the rite of passage, analogous to the process of psychotherapy. The article presents the author's photographs of liminal space, which, by illustrating the threshold, "being in between", "both this and that", inspire the described "multi-point", or rather "spatial", perception of the world and myself.

KEYWORDS

integration phase; liminal stage; separation stage; liminal space; rite of passage; home; photography; quarantine; threshold; psychotherapy; seeing; Mircea Eliade; Arnold van Gennep; Waldemar Kuligowski; Richard Rohr; Victor Turner

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The space of "being between"

Liminal space and its photographs

Space as a place/image of internal change

Space is not only a physical place, received and designed according to the rules of the outside world. Outer space is a mirror of inner space. Travel in the outer world inspires change in the inner world and vice versa.

The aim of the article is to explore the psychological importance of space. Does being in, observing and "crossing", an environment support and reflect inner phenomena and, in particular, inspire and illustrate breakthrough moments – significant internal changes? This is important for artists who are creatively observing and designing space so that they can create not only a place in the inner world, but also in the [outer] one.

A. van Gennep noted the clear link between movement in space and the change in social status, the formation of identity. Such a process occurs, inter alia, in the rituals of passage (initiation)[1]. The art of designing and observing space can become such a rite.

Rites of passage (*rites de passage*), mark a person's passage through the life cycle, from one degree to the next over time, from one social role or position to another, while integrating human and cultural experience with biological destiny: reproduction and death. This process is caused by spontaneous, internally stimulated, development of a person. As a result, the individual leaves the world of social interaction in search of truth, following an inner, more or less aware, voice.

The rites of passage consist of three stages:

1. exclusion, separation (*rites de separation*);
2. liminal, marginal (*rites de marge*);
3. inclusion, integration, aggregation (*rites de agregation*).

During the separation phase, the participants of the ritual separate from their community, are excluded from the group to which they previously belonged, and are deprived of attributes indicating the affiliation. They move away from everyday life, physically and symbolically.

The rite of passage symbolically depicts and helps to move from one phase of life and identity to the next, often by way of (using) physical changes of the place: the crossing of the border of a territory, moving, traveling, pilgrimage[2]. Once initiated, [the traveler] starts the process of transition from a lower status to a higher one, "clued in" by isolation from the existing environment, relationships, and activities. [The traveler] dwells in a place of seclusion, a kind of hermitage, a sanctuary of his or her inner transformation. It was a place outside space and time, which made it possible to establish undisturbed contact with the supernatural order, with one's own soul, with

[1] Arnold Van Gennep, *Obrzędy przejścia. Systematyczne studium ceremonii: o bramie i progu […] i o wielu innych rzeczach*, Warsaw, 2006.

[2] Arnold Van Gennep, *Obrzędy przejścia. Systematyczne studium ceremonii: o bramie i progu […] i o wielu innych rzeczach*, Warszawa 2006.

healing[3]. Thanks to this, the traveler is in the liminal phase – in the aisle, the space between his or her previous and future identity and social life.

Liminal space

The narrow space of the limen, or threshold (from Latin: *liminen*), separates the house's two rooms, as well as the house and the outside world. It's a place to go in or start. Liminality in a psychological sense means being on the doorstep, in the transition between the present life and some new, unknown, form of it[4].

The different stages of life are separated by thresholds, such as birth, maturity, marriage, parenthood, old age and death. They are often associated with, or symbolized by, the transition to another space, for example, with a change of residence, crossing a street, entering a house or another room in it[5].

The individual is no longer in his or her previous state, but has not yet reached a new identity. The person is not who he or she was or will be, is in a transitional state: "no more – not yet", "**being in between**", ritual "suspension", marginalization in which the person is outside society and beyond himself or herself, "me", between the known and the unknown[6]. This is accompanied by an identity crisis because this person is no longer who he or she was, but is not yet who he or she is to become. The person has already died, but has not yet been born. "(...) This person in me goes further, goes

[3] Victor Turner, *Betwixt and between: The liminal period in rites of passage*. *Betwixt and between: Patterns of masculine and feminine initiation*, 1987, pp. 3–19; Victor Turner, *Liminalność i communitas*, [in:] *Badanie kultury*. *Elementy teorii antropologicznej – kontynuacje*, ed. M. Kempny, E. Nowicka, Warsaw 2004, p. 240–266.

[4] Victor Turner, *Betwixt and between: The liminal period in rites of passage*. *Betwixt and between: Patterns of masculine and feminine initiation*, 1987, pp. 3–19; Victor Turner, *Liminalność i communitas*, [in:] *Badanie kultury*. *Elementy teorii antropologicznej – kontynuacje*, ed. M. Kempny, E. Nowicka, Warsaw 2004, p. 240–266.

[5] Arnold Van Gennep, *Obrzędy przejścia. Systematyczne studium ceremonii: o bramie i progu […] i o wielu innych rzeczach*, Warsaw 2006.

[6] Victor Turner, *Betwixt and between: The liminal period in rites of passage*. *Betwixt and between: Patterns of masculine and feminine initiation*, 1987, pp. 3–19; Victor Turner, *Liminalność i communitas*, [in:] *Badanie kultury*. *Elementy teorii antropologicznej – kontynuacje*, ed. M. Kempny, E. Nowicka, Warsaw 2004, p. 240–266.

through it. When I ask myself, 'WHAT IS THIS?', without imagining any answer, it seems to me that the person in me should kill what I am (...) condemned to become a man (or something more), I must now die (for myself) and give birth to myself"[7].

Waldemar Kuligowski, in his YouTube lecture,[8] argues that the quarantine, the separation from the existing spaces of life, has become a kind of social rite of passage, has led us to the liminal phase between physical, social and psychological spaces. We are no longer who we were, we do not yet know who we will become. Recent changes in being in the physical and social space have become a social rite of passage – they have suspended us in a state "in between" before and after the epidemic.

Man no longer belongs to the "old" ordinary world, but is not yet a full participant in the new reality, so the normal rules of life must be suspended in his case. There are no previous social conditions; daily rules and restrictions disappear; the distance from normal terms of time and space is extended.

The liminal space is a place of change, a time of waiting and ignorance. "The threshold is God's waiting room. Here we are taught openness and patience, waiting to meet the divine Doctor"[9]. Here the world of the sacred is revealed – the center of reality, space and the core of itself, one's own self. **My home in me.**

The building and settling of each dwelling always means, in a sense, the beginning, the new life, and every beginning recreates that original beginning when the light first lighted up above the world"[10]. „The home is not an object, a 'machine for housing'; it is a universe which man builds, imitating the exemplary work of the gods– cosmogony"[11].

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[7] Victor Turner, *Betwixt and between: The liminal period in rites of passage*. *Betwixt and between: Patterns of masculine and feminine initiation*, 1987, pp. 3–19; Victor Turner, *Liminalność i communitas*, [in:] *Badanie kultury*. *Elementy teorii antropologicznej – kontynuacje*, ed. M. Kempny, E. Nowicka, Warsaw 2004, p. 240–266.

[8] http://uamfilm.amu.edu.pl/UAMowi/prof.Waldemar_Kuligowski.pdf, https://www.youtube.com/watch?v=FfHx5eUg-6k.

[9] Rohr Richard, *Wszystko ma swoje miejsce*, Kraków 2005.

[10] Eliade Mircea, *Świat. Miasto. Dom*, transl. by I. Kania, „Znak", 1991, issue 12, p. 12–22.

[11] Eliade Mircea, *Świat. Miasto. Dom*, transl. by I. Kania, „Znak", 1991, issue 12, p. 12–22.

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Photography as an assistant to the rite of passage

The change of “me” occurring during the rite of passage is accompanied by a change of my view on the world and on myself. Photography helps me to look from different points of view, frames, perspectives.

Changing the point of view by confronting points of view

The photographer creating an image on the plane of the photograph has to select one point from which he or she takes the photo before taking the photo. The decisive point for the photo is the point of view, the light that falls on the subject being photographed, the focal length of the camera lens, the distance between the camera and the subject. If you change a factor, the image of the subject is changed. These changes can go so far that we may not recognize the subject being photographed.

Psychotherapy (photography) is actually a school of seeing – the ability to perceive one’s own problem, oneself and the world (photographed subject) with different sharpness, depth and distance. From different perspectives. In psychotherapy, not only changing the point of view to another is the cure, but rather the possibility and freedom to choose many different perspectives. Photography, which is precisely the art of looking from different perspectives, can – like psychotherapy – support internal change. In photography it’s about “physical” vision, in psychotherapy about the “psychic”. , in both photography and psychotherapy, the point of view is the material. If we change the point of view, “these changes can go so far that we may not recognize the subject being photographed” ... and oneself.

I am interested in this duality, two directions of perception – on the one hand as a physical process, on the other hand as a mental process, directed outwards and inwards. We see the world but always through ourselves. Looking at what is outside, we always look through what is inside us.

Changing the point of view on the viewing space

The point of view often changes and even one is aware of different points of view on a given thing. This helps, this expands the horizon, but still remains just a collection of diverse points, scattered, detached, uncollected. In one photo taken from one point of view you can see one picture of the reality, of one moment and lighting. Life, however, like a film, is composed of an infinite

number of photographs. Movement arises somewhat from their average, from the combination of space between them, differences between them.

The truth lies not so much in the change of a point of view but in combining different points into space – one ongoing process of asserting one's own being, the meaning of life, one's own direction of life and dying. Liminal spaces, when illustrating the threshold, "**being in between**", "**both this and that**", inspire the described "multi-point", or rather "spatial", perception of the world and oneself. The photographs I have created are a document of my outer and inner journey in search of such areas (both "outside" and "inside").

Integration

This is the recombining of perspectives on the world and ourselves. The traveler enters the third stage of the rite of passage: the **integration**. It is the end of the journey. It is a return home and to daily activities. The journey is over. Participants are admitted to the new group together with their rights and obligations. Nevertheless, nothing is as it was before, especially travelers – they return to everyday life again, but already in a new form, as other people, with a new status. They are born again. What we know from the beginning is often the end,

> What we call the beginning is often the end
> And to make and end is to make a beginning.
> (…)
> We shall not cease from exploration
> And the end of all our exploring
> Will be to arrive where we started
> And know the place for the first time.
>
> T.S. Eliot, *Little Gidding*

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Dr Agnieszka Pawłowska-Górska
Akademia Sztuk Pięknych im. Jana Matejki w Krakowie

EMPTY HOUSE

The “Empty House” is a series of analog photographs sized 100x70 cm. They have never been touched up.

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The “Empty House” series, Agnieszka Pawłowska-Górska, analog photograph
Source: The author’s archive

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An “empty house” is a contradiction,
because a house is a place where someone lives.
The combination of the spatial words “empty” and “house”
creates time.
The empty house is one that is waiting to be occupied.

Emptiness is not a place where there is nothing and no one is there,
but where there is space.....open for the future.

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The “Empty House” series, Agnieszka Pawłowska-Górska, analog photograph
Source: The author’s archive

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The house is a safe place. Protects
by isolating a patch of space
from the open space.

I'm safe because I'm locked in my house.

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The "Empty House" series, Agnieszka Pawłowska-Górska, analog photograph
Source: The author's archive

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However, it is the gaps and openings in my cocoon connecting to the open space that let the air and life into my shelter.

Windows and doors to the world co-create my house like paintings hanging on the wall.

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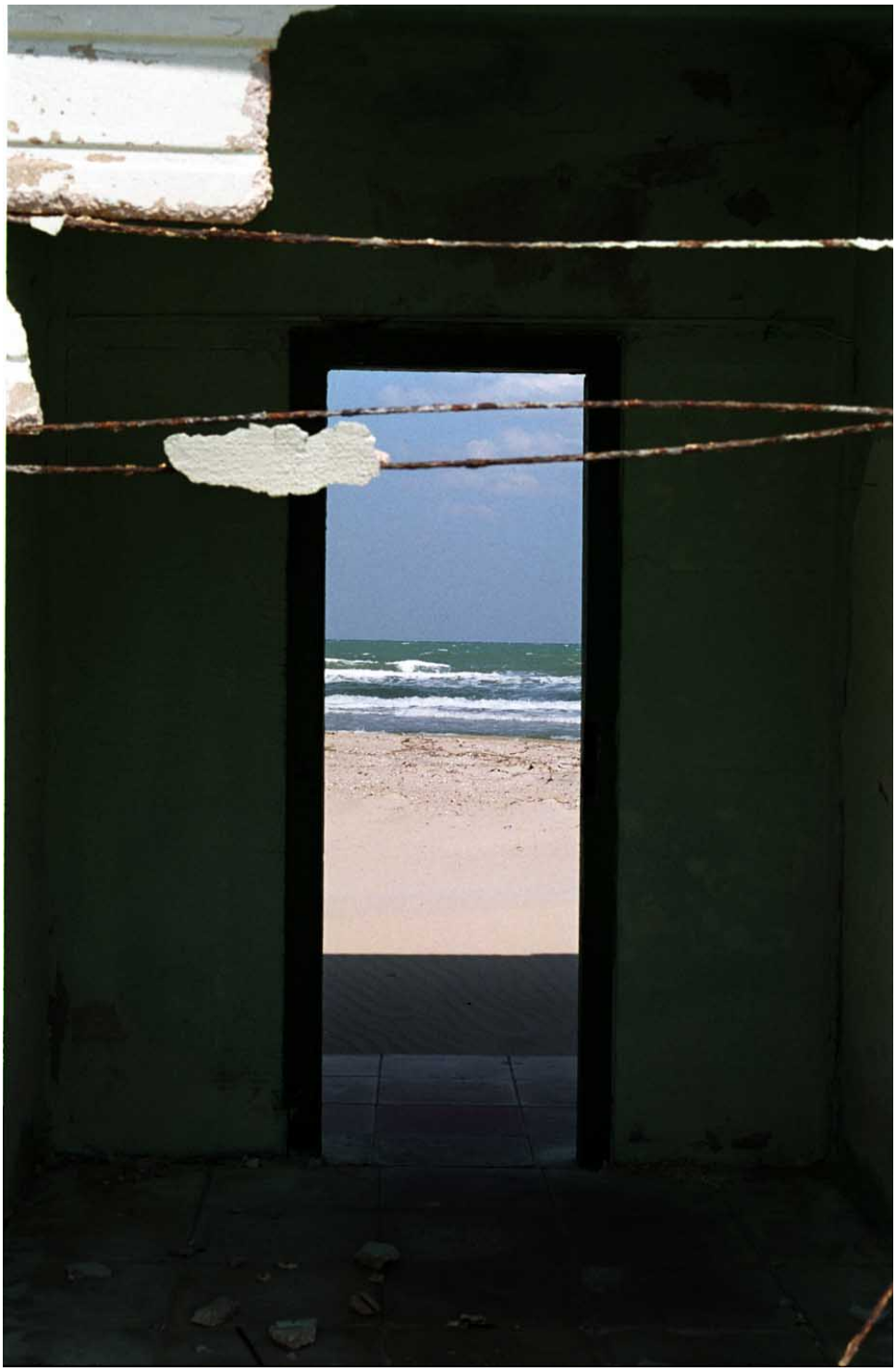

The "Empty House" series, Agnieszka Pawłowska-Górska, analog photograph
Source: The author's archive

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The "Empty House" series, Agnieszka Pawłowska-Górska, analog photograph
Source: The author's archive

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What if there was no street behind the windows but a great endless sea? But there is! If we look from the inside, the outside of what is here and now is the infinity of possibilities.

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ANETA FAUSEK-KACZANOWSKA

CAN PARTICIPATORY ART EXIST ONLINE?

Online implementation of an artistic and social action on the example of "#givethanksfor"

ABSTRACT

The article presents the objectives, concepts, methods and characteristics of the artistic and social action known as "#givethanksfor", pursued through social media, based on the assumptions of participatory art. The article describes the components of the action, how it was created and importance of the artistic work done, which is the finale of the action. The artist asks questions: "Can participatory art exist online?" and "Will the artist's actions based on participatory art allow to awaken and show a feeling of gratitude in a group of people?" Answers were attempted based on considerations of participatory art, gratitude and online artistic activity.

KEYWORDS

Clair Bishop; Adam Chmielowski; Barbara Lee Fredrickson; Philip H. Friedman; Łukasz Horbów; Michalina Kostecka; Janusz Łukaszyński; Karina Marusińska; Magdalena Morawik; Dawid Radziszewski; Krystiana Robb-Narbutt; Alicja Rogalska; Erna Rosenstein; Chiharu Shiota; Georg Simmel; Patrycja Steczek; Zuzanna Surma; Łukasz Surowiec; Małgorzata Szcześniak; Ewa Małgorzata Tatar; Janina Turek; Marcin Wnuk; artistic and social action; educator; Facebook; photography; Internet; collection; coronavirus; list of thanks; lockdown; protective mask; social media; artistic object; eyes; pandemic; positive emotions; social profile; society; glass ampoules; participatory art; theory; creator; participant; gratitude

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Can participatory art exist online?

Online implementation of an artistic and social action on the example of "#givethanksfor"

Introduction

C. Bishop (2015) defines participatory art as follows: "Socially engaged art, the kind of strategy by which people become the material of artistic work. The artist arranges a situation and encourages its participants to behave in a certain way in the specific place. The artist is a collaborator and producer of socio-artistic situations and the audience become co-creators or participants. Ephemeral actions are based on meeting people, are aimed at inducing emotions, stir, creating a temporary community, stimulating energy. The origins of participatory art stem from the activities of Italian futurists: evening parties (serate), meetings with the public and futuristic actions of provocation, which foreshadowed the later actions of the art of performance and happening."

As Ms Bishop points out, the artist is the originator and collaborator. It is the artist who chooses the time and place. Activities that are an example of participatory art physically link the originator with the recipients. Paul Althamer took this activity, creating diverse communities in the course of his projects based on cooperation with people.

What if the only place available to the artist is his Web-enabled computer located in his room? This happened in March 2020, at the time of the coming of the new reality during the pandemic lockdown. This context provokes questions such as “Can participatory art exist online?” and “Can the artist’s actions based on participatory art awaken and show a feeling of gratitude in a group of people?”.

The transfer of the above-mentioned assumptions to the Internet introduces a new chapter in the work of an artist isolated from his material. It becomes the only safe way to gather and reach more people. A Facebook page becomes a work and is used to create a temporary community of people who are the main element in the artist’s hands. Involving an audience will allow the creator and educator to carry out his planned actions and create a visual effect. The created situation is designed to arouse emotions, stimulate inner energy, make us aware of, and sensitize to, the ability to appreciate the good around us, direct a group of people on the path of gratitude during the ongoing pandemic.

The aim of this work is to present the results of the online artistic and social action titled “#givethanksfor”, which aims to strengthen the feeling of gratitude in the era of the pandemic using the assumptions of participatory art laid out by C. Bishop, and to answer the above questions.

Art has been evolving with the development of technology and with changes in the society’s approach to it. Artistic activities online go back to the 1090s, they have adopted the name: “net-art”. They began to exploit the popularity of websites and, next, social media. This gives new opportunities to forms of expression, allows you to interact with your audience on a global basis. Social media play a significant role in today’s functioning in the world, especially in the situation in 2020. This potential is exploited by all areas of life, including culture, as well as artists themselves. Cultural institutions have adopted a strategy of outreaching. They organize online private viewings and exhibitions, virtual tours, discussion panels, workshops and other unusual events for contact with the audience. The production by Dawid Radziszewski, “An exhibition in your apartment”, takes the form of videos recorded in his apartment and posted on Instagram. Other artists were also not indifferent. An attempt was made on Facebook to arrange for the #alivefemaleartists chain challenge. Social media were also used to share the results of unusual artistic residencies in Magdalena Morawik’s and Łukasz Horbow’s “Self-House Residency” project. The actions taken by Patricia Steczek and Zuzanna Surma have also been documented. Visual interpretations of emotional states

were presented on the “Touching/Defrosting” fanpage and in the space of Krakow. The virtual world hides many such performances under the “art in the times of the plague” catchphrase.

Gratitude

According to *The dictionary of the modern Polish language*, it is a feeling that responds to experienced goodness, a sense of moral commitment, a desire to reciprocate, thanks for something, a memory of someone’s goodness. The adjective “grateful” has as many as four different meanings in the dictionary: (1) obliged, feeling grateful for something, wishing to reciprocate, to thank; (2) arousing pleasant impression, graceful, cute, endearing, sweet, nice; (3) satisfying, enjoyable, satisfied, beneficial, kind; (4) sympathetic, well-disposed, kind, positive, teachable. The last three definitions have and cause a positive connotation. In contrast, the verb “to thank” in its five meanings has both positive and negative overtones: (1) to express gratitude, to thank, to be grateful; (2) to express politely the refusal; (3) to give up, to resign, to refuse to participate in something or to accept something; (4) to send away, dismiss, fire, or to express dissatisfaction with, someone; (5) to charge or blame someone or something. All this indicates to us how to look at a particular thing or situation.

Georg Simmel (1975) expressed an optimistic view of the nature of human gratitude: “if we removed in one fell swoop the ability of the human soul to respond with gratitude for past benefits, the society, or at least the society as we know it, would fall apart.” These statements prove the importance of this attribute that distinguishes people from the natural environment, landscape, sky, rocks, flowers, fish, animals, etc., which, without knowing anything about gratitude, do not show it to one other and which cannot be thanked for aesthetic sensations or imparted knowledge (Dront, 2004, op. cit. in Łukaszyński, 2015, p. 134-135).

Both another person, nature, God, the cosmos or an animal can be the source of gratitude. According to Friedman’s definition (1989, op. cit. in Wnuk 2017, p. 57), you can be grateful for the circumstances of life, for what you have received, experienced or learned, for spiritual resources, for what you have offered or forgiven, for your inner qualities, future positive experiences, prosperity, or blessing. In my opinion, the gratitude that belongs to every person, regardless of the views and values he or she professes, shows the potential and importance of this feeling. Gratitude leads to happiness and joy, the stimulation of positive strength and differently understood energy in a person who is often stressed, busy or in a pandemic situation, uncertain of the future. This is confirmed by

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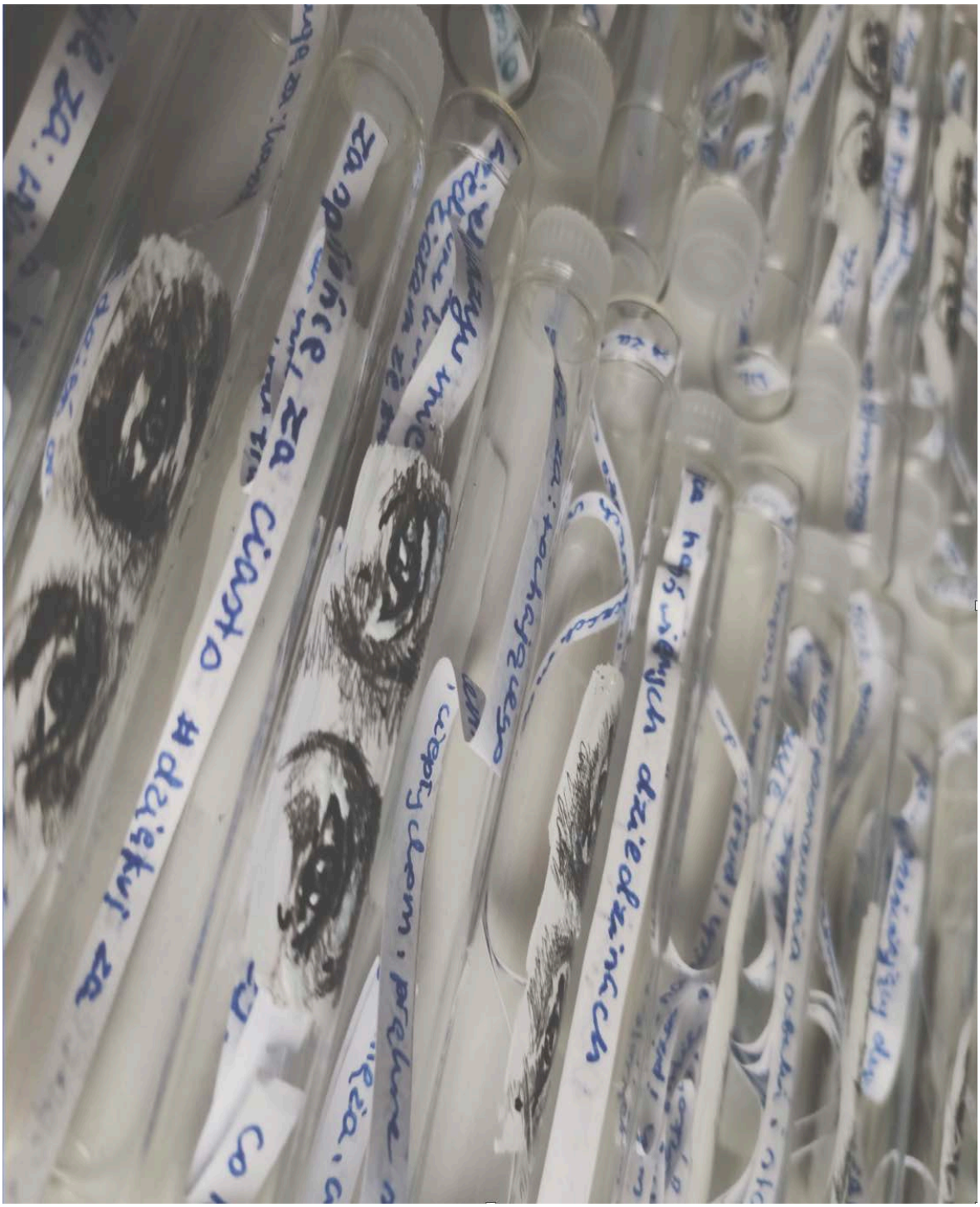
The glass ampoules with the eye portrait and thanks



Source: The author's archive

youTube videos offering topics from gratitude meditation, coaching advice, music to Christian lectures (Fausek-Kaczanowska 2020, pp. 28-29). My fascination with gratitude began with a record of ten things for which I am grateful on any given day. Then came the idea of writing thanks on narrow sticky note and placing them in glass ampoules. The resulting work contains 365 ampoules. Among them are also empty, waiting to be replenished, and black, which are symbols of worse days. All this practice has shown me what gratitude really is. I have found my way of expressing it.

As an artist of the young generation, committed to working with people, I moved my activities into the virtual world in the era of the pandemic. I have tried to ensure that these issues are reflected in the area of the socio-artistic project, which is the "#givethanksfor" action. For this purpose I used the online environment, especially Facebook. I suggested that future participants should appreciate and notice the things they want to thank for and write them off on a piece of paper. I suggested taking a photo and uploading it in a private message or sharing it on my social media profile. I used the se photographs to work on the creation of an artistic object containing eye portraits of the participants of the action taken on glass ampoules along with thanks enclosed inside. The collection of the ampoules visualizes the virtual meeting.

Main goals of the “#givethanksfor” action

I will start the presentation of the actions taken by presenting the objectives of the action and describing how to reach the participants and obtain the material needed to perform an artistic object. After examining social projects and the impact and views on gratitude, I set out the following objectives of the action:

- raise public awareness of the conscious survival of one’s life and appreciation of what is before and not what is after it;
- motivate a change in the perception of reality;
- listen to your spiritual interior;
- encourage people to think and raise their awareness of the need for gratitude and thus to give thanks in every situation;
- discover small and great things for which you can thank, thanks to which you can celebrate and rejoice;
- deepen social relations;

- build up the inner positive strength and energy that is the gift we enjoy;
- take the trouble to find things for which we want to thank and to desire to discover and taste what is really important to us;
- stop and find what small and everyday things have unusual in them (among big breakthroughs that happen less often);
- show the beauty and strength of the expression of human eyes, which have become a method of communication after the introduction of the obligation to cover the mouth and nose;
- strengthen the feeling of satisfaction and certainty, which positively affects the physiological system;
- accept yourselves and the present moment;
- induce positive emotions;
- perform artistic work (the portraits of eyes and the letters of thanks enclosed in the ampoules) based on the submitted photos; (It is based on the assumptions of art that breaks barriers and boundaries. The work will connect physically distant people who have expressed their gratitude, by connecting glass ampoules into an artistic object.)
- use art techniques as a vote of gratitude (the drawing of the eyes together with the glass ampoule with thanks will be sent in the form of graphics as an expression of gratitude for participating in the action);
- educate with visuality to encourage the universal feeling of gratitude;
- carry out the action on the basis of the assumptions of participatory art (Fausek-Kaczanowska, 2020, pp. 33-34).

As I mentioned above, the aim of the action was to create a community that appreciates gratitude and converts negative thoughts into positive ones. “Thank you for …” – these are the words that awaken positive thinking in the recipient, a distraction from the prevailing reality, in which uncertainty and fear dominate. Thanks are a material for building a virtual group and arouse a feeling of joy in the participants. According to Barbara Lee Fredrickson (an American professor of psychology dealing with the theory of positive emotions), “the ‘enriches-builds’ theory, confirmed by empirical research, shows that gratitude is a powerful transformation reservoir for individuals, organizations, and communities”. According to the author, “gratitude is not only a response to the other person’s enjoyable actions but an emotion with an exceptionally strong potential that enriches personality and builds community” (Fredrickson, 2004, op. cit. in Szcześniak, 2007, pp. 104-105).

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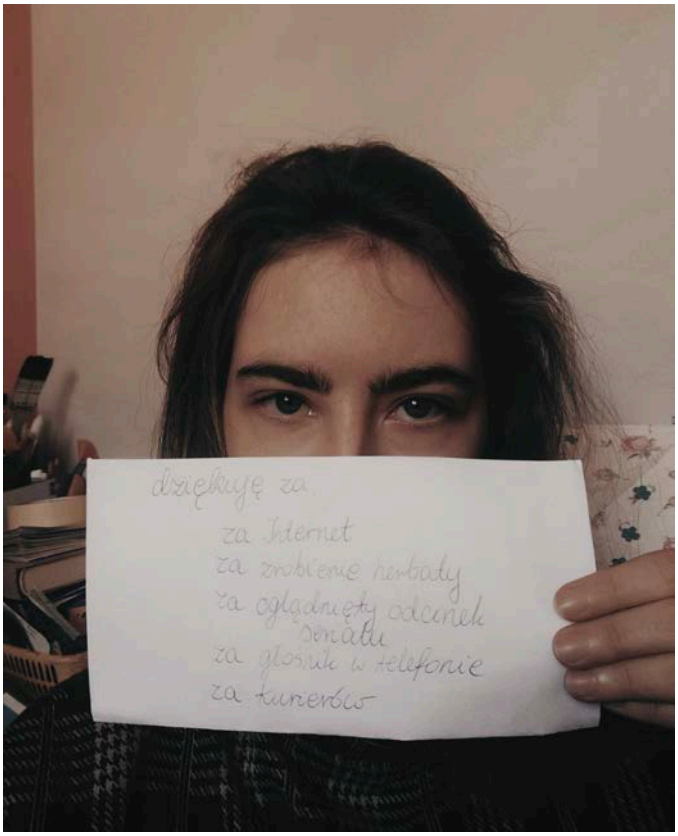
A reference photograph with a note

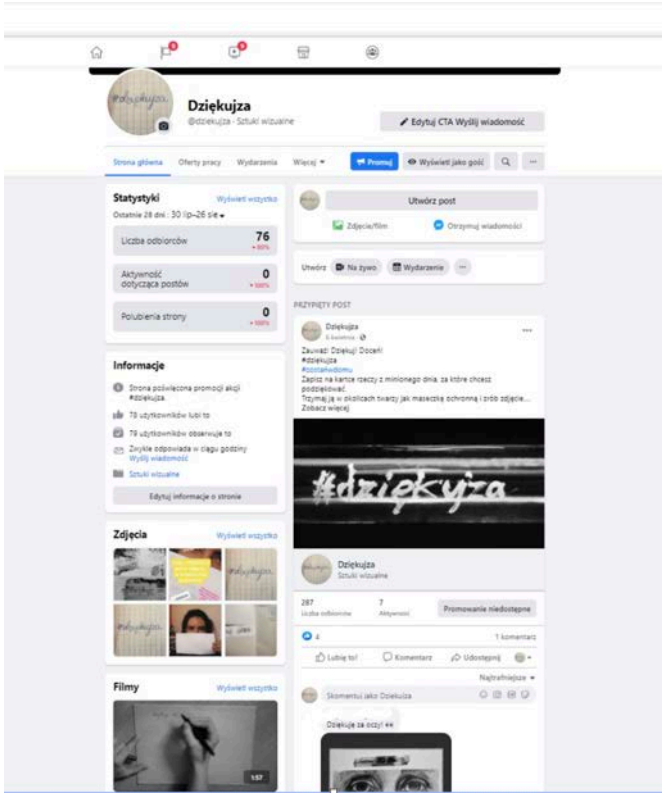


The author's archive

The target audience was reached on April 6, 2020, by creating the "Givethanksfor" profile on Facebook (https://www.facebook.com/dziekujza). This date marks the beginning of the action. Then the first, reference, photo was placed with its own list of thanks and instructions for future participants. It was recommended to write a list of thanks on a piece of paper and describe the next steps to implement the assumptions of the action: taking a photo with the above-mentioned card held at the height of the nose and mouth like a protective mask and posting it on a private social profile. Photos of authors' works appeared also on the "Givethanksfor" page:

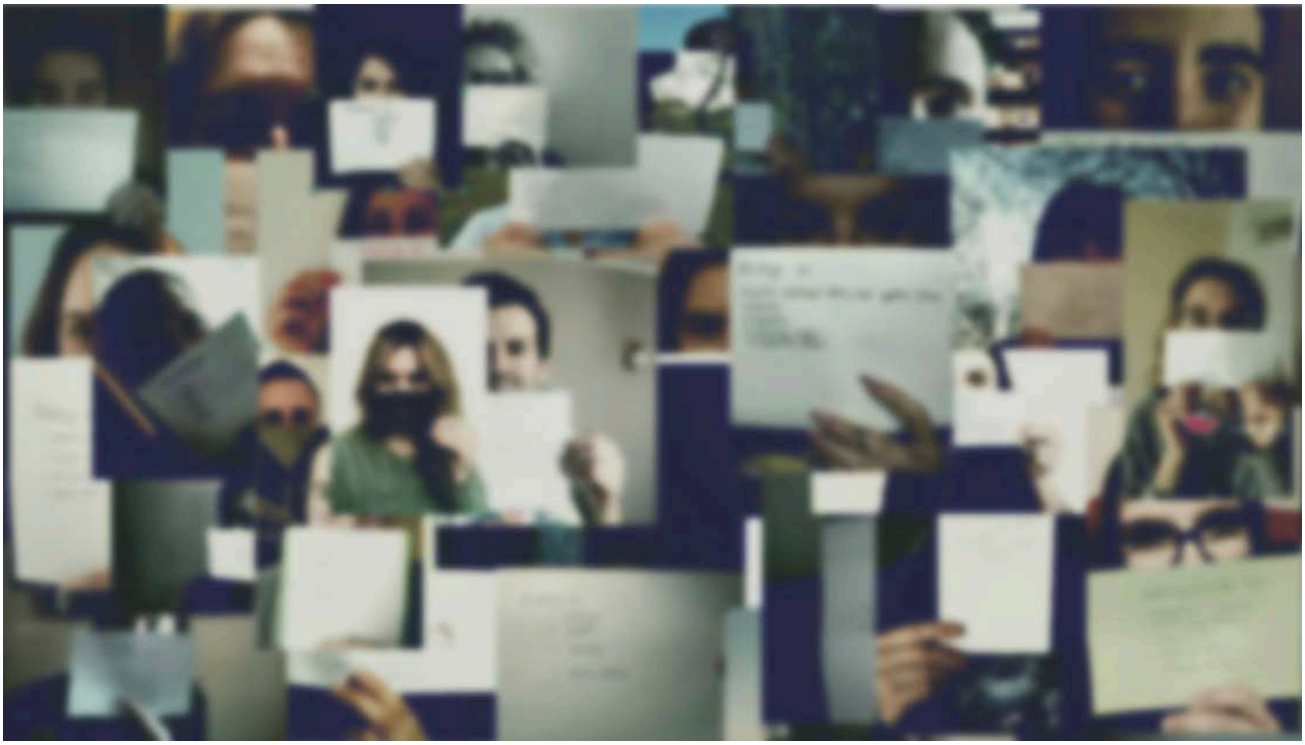
1. from the words for what I thank (visual poetry, contextual poetry);
2. from visual signs, forms, compositions that speak of thanksgiving, of community, of selfless action, of giving, etc.

The goal was to educate the profile visitors with the visuality.



Source: The author's archive

Despite the promotion of the action on the social network, there was no response. The question "Why?" came to my mind. I got an explanation in the final survey, which I will refer to later. The recipients were afraid to show their feelings in public. After introducing the ability to upload a photo in a private message, the first photos were sent and the number of participants began to grow. The number of people following the site and taking an active part in the action has increased gradually. From the site's founding until May 18, 2020, there were 70 people who liked and observed it, as on June 13, 2020, there were already 77. As of July 2, 2020, page likes were added 78. As of May 18, 2020, 30 photos were uploaded. As of June 13, 2020, the number of 50 photos has remained unchanged. In conclusion, I have received 50 photos that I used for further work during the next stage of the action, which was the production of the artistic object. This number is the same as the number of participants in the "#givethanksfor" action as on July 2, 2020.



Source: The author's archive

The final artistic object of the action

The reliance on the form of diaries, journals, blogs, etc. allowed me to propose the archiving of the daily life in the form of a list of thanks from a given day or time. The inspiration was the meticulous records of Janina Turek, a diarist of Krakow. She recorded and numbered the facts of her own existence for 57 years. Thanks to the change in the traditional method of recording everyday life and based on the submitted photos, which are the determinant of the participation of third parties, as well as using glass ampoules, the final object was created. Each tube contains a note with a list of thanks re-written from the photo. On the ampoule there is a drawing of the eyes of the thanking person. The combination of 50 ready-made "caskets of gratitude" forms a collection that changes traditional methods of keeping a record of everyday life. This indicates that all the participants are connected to a visual and physical work about gratitude and community at the time of the difficult experiences of the pandemic and the associated isolation. The work is intended to show through its technique and execution how spreading and articulated gratitude can build a community and unite the individuals and the community. This way of working shows that thanks to the internet and the

artist's work a group of people can be built at a distance, centered around a single project, without disrupting their functioning in their everyday lives.

Another important aspect of the resulting work is the drawing of an eye portrait made with the same technique, black ink, pencil and white acrylic. This does not change their artistic expression. Some are specific representations of the anatomy of the eyes while the other are unreadable, which emphasizes their diversity in their unity. They gently loom and pulsate in combination with the text written in a pen with blue ink, indicate a notation of emotions and unsightly everyday life. The blue ordinary pen reflects the grip of what we have in the palm area and in sight, to record important thoughts.

At the time of the introduction of the order to cover the mouth and nose the eyes became the main element of communication. This fact is closely related to the activity performed by the participants in their photos. In the eyes we are able to read a lot of information about a person. They express emotions, moods and states of spirit, such as pain, fear and lies. Through them we look deep into the person. They have the rank of identifying the person, which I try to express in the drawings, personalizing each ampoule of the participant along with the re-written note with his words. A piece of paper held by the face, on the other hand, is a proposal to replace it with a mask of positive energy. In the photo, it is supposed to shield against the spreading gripe with the pattern of a protective mask. This is done by the list of things in the form of nouns, phrases or sentences: everything that arouses in a person a feeling of gratitude and, thus, causes a change in the perception of the events of everyday life.

In addition, the object was created from ampoules which gained rank through the important message hidden inside and through the image of the eyes. This ennobled the ampoules: these useless objects have become something important and necessary; a necessary thing to protect against the loss of thanks just as the glass coating plays a protective role for biological material taken and enclosed in a sealed tube. This focuses attention on the essence of thanksgiving for things often unnoticed and underestimated.

The presented work is made of 50 identical glass, disposable, ampoules with eye drawings and lists of thanks. They form a collection. This is another argument in favor of including the work in the

One side of the artistic object

Source: The author's archive

The other side of the artistic object

Source: The author's archive

area of visual arts. This is confirmed by examples of actions of artists focused on collecting unnecessary objects. They accumulated the crumbs of life, giving them a higher rank. Apart from Ewa Małgorzata Tatar (2010) we have two other artists: Erna Rosenstein and Krystiana Robb-Narbutt. Both these artists used elements described in culture as waste in their work. Rosenstein found beauty in them. Robb-Narbutt stored the collected items in arranged categories so that they could be used in her art. These artists are just a small piece from the art world where we find the search for something more in painfully ordinary things.

Collecting things can also bring people closer together and allow them to establish a community. Such actions were carried out using participatory art by other artists. Alicja Rogalska and Łukasz Surowiec created a collection of tears from voluntary donors in 2014. They called it the "Tear Redemption Center". Such "collections" discover human experiences collected from individuals and give them a new rank. For example, Michalina Kostecka's "Dress Code": a series of objects made of processed worn clothes carrying DNA codes of their users. Another example is Karina Marusińska's "Tester": a mixture encased in a glass bottle, made from collected sweat of a football team, applied to random people in a sports bath. An the work of Chiharu Shiota, a Japanese artist creating in Berlin is an excellent reference; specifically her "Room of Memory": window frames from buildings demolished after the fall of the Berlin Wall.

The collection of eyes and thanks based on the unified graphic system is part of the collection within the artistic idea, which consequently leads to the involvement of participants in cooperation in the project without physical contacting one with another. The production of the object ended on July 2, 2020, while the "Givethanksfor" page is still there to attract new audiences.

Feedback from the participants

The creation of the survey and its completion by the participants allowed to verify the objectives set before the action. It was to check whether the proposed action caused a stir, aroused desired feelings and whether the artistic and social action online had the intended effects. The survey consisted of four questions, a place for feedback and the request for the participant to find his or her own pair of eyes. 26 responses were submitted. I wanted to know if the action had an impact, whether it met the objectives and what others thought of it.

Four pairs of images representing a shape, color, or photo answered to one of the main questions. Each subject was tasked with choosing one of the options in a given pair by linking it to the feelings and thoughts that accompany the production of the list of things and photos. The first two questions contained answers in the form of photographs with specific associations with feelings and emotions while the next two were abstract concepts freely interpreted by each individual. I chose images so that the pair had extreme feelings hidden in the form of signs, shapes, images, so that the respondents could read a positive or negative reception.

In the first two questions, 100% of those surveyed chose photos that we can easily associate with positive emotions. Pictures of the shape of smiling lips and a clean green landscape were indicated. The variety of color and abstract texture interactions is indicated by the difference in the choice of an option in the other two questions. Yellow and gray color and flaky and clean wall can be interpreted differently. The differences in these choices should be read by the sensitivity of the subject.

The statements received from the participants describe their impressions and thoughts. The comments received indicate the strength of the action. Here are some of them:

> *I would like to say that this is a mega-super-action that can allow people to realize what is important to them.*

The "#givethanksfor" action is in my opinion fruitful in smile and well-being, it is nice not to think about the problems and sorrows that unfortunately accompany us every day, so we forget about these good things on the day, we should put this action for good into our lives and although for 5 minutes sit down and think what a wonderful thing happened to us today.

A super-action with the thanksgiving, a simple and much needed practice that should accompany us every day. And the very form of presenting the project with bottled eye drawings is also suggestive and hit. I was associated with throwing a clogged bottle into the sea, with our letter inside. Thanks to you, we do not have to do this, devastate the environment! You are a mediator in conveying positive emotions.

Thank you for this action which allowed me to see how many things you can thank for, and this every day, and sometimes forgotten about it. This is especially important during a pandemic when difficult events come from the outside. It makes you realize that there is more in life, which we do not always reach for every day, and gratitude changes man. It also makes us give ourselves even more to others and make us feel fuller. I associated it with a vessel into which we can pour something but it can also give something back afterwards. This action was such a light, a rise and a reminder of important things, and it allowed us not to give in to bad thoughts. The sight of the eye drawings encouraged action. It reminds me a little of the part of the Ignatian account of conscience but more useful for everyone, including non-believers, and I think that's very important. It also propagates art. Recently I described the painting of Adam Chmielowski, "Ecce Homo", and in this picture are important eyes, which brother Albert painted so that they look deep, I discovered it recently. The face is the most recognizable in a person, and as you painted the eyes themselves, it was still the impression that this is already a person, a face, not just an element.

> *This initiative opened my eyes to small, daily, often imperceptible things. It was worth taking part in it!*
>
> *(Fausek-Kaczanowska 2020, pp. 46–49).*

Summing up the above statements, the #givethanksfor action has been welcomed.

For me, as the author of the whole project, it is important that I received comments from people for whom it was initially hard to take part in it. They were unable to thank or did not know what to write. Some returned after a long time, wanting to join. This information answers the questions" "Can participatory art exist online?" and "Will the artist's actions based on participatory art help to awaken and show a feeling of gratitude in a group of people?". The answers show that the project, although not carried out in direct contact with the participants, fulfills its task. It aroused among the audience the need for showing a gesture of gratitude, recognition and appreciation. It showed many

possibilities that are enough to see in a life filled with many stimuli. It caused a halt and a thud of awareness and mindfulness. It encouraged the practice of the habit of gratitude. Also, thanks to the online contact, I was able to ensure that the action will not be forgotten.

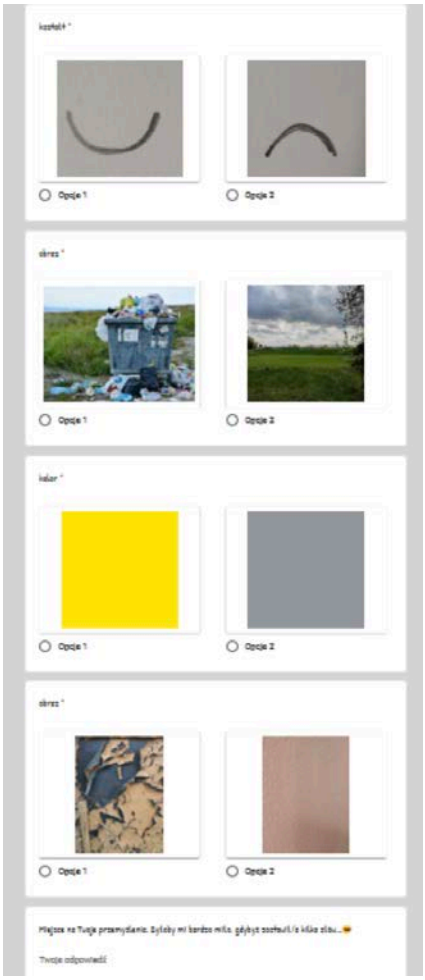
Photos were sent out as proofs of participation and thanks. The following is a specimen of a picture of the drawing of the eyes and of the personal ampoule

.

A photographic souvenir for a participant

Source: The author's archive

Questions in the final questionnaire



Source: The author's archive

Conclusion

As artists, we grasp every way to meet the audience. It is for them that we take our creative effort. The moment of isolation only helped them and gave them new directions of their development. This time brought the need to solve social, cultural and artistic problems. In my opinion, the Web Internet is one of the worthy methods for use by the artist and educator. During the pandemic we became a threat to ourselves, which is why the virtual world took over part of our lives. The hardship forced the use of modern means of communication in favor of going into public space with artistic

activities. It has made it possible to reach a wider audience. As I have already mentioned, I consider actions in the form of participatory art to be exploitable outside the real world. After all, living in real life, we can live virtually. However, offline meetings are more important and more important in quality, and online meetings help make them more attractive.

Thanks from participants on the "Givethanksfor" page

Source: The author's archive

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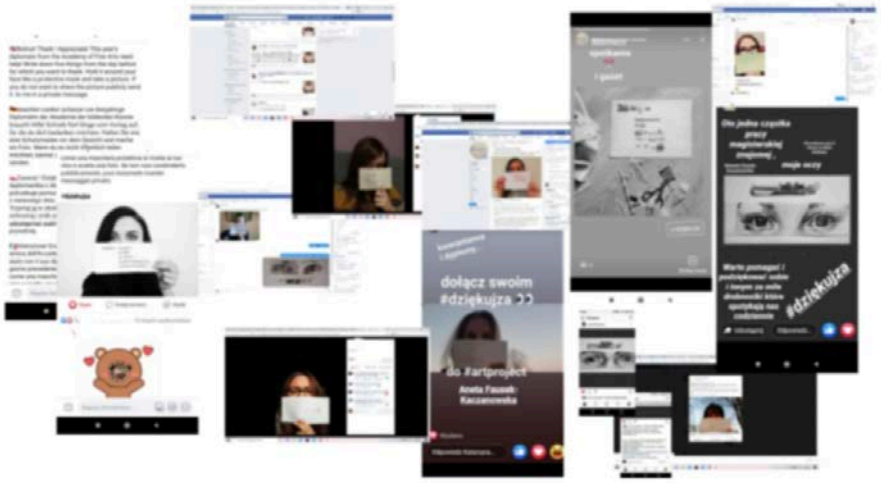
Examples of participants' involvement in the action



Source: The author's archive

The assumptions made narrow the audience to users of the Web, however, they can reach the rest and recruit them to the project. I would like to draw attention to the possibility of solving the problem by sharing the impressions of the audience with others and thus trying to change their attitudes which affect the environments in which they live.

I consider the #givethanksfor" action to be successful. Based on the assumptions of participatory art, as defined by C. Bishop, it was possible to build the core of its course. These assumptions inspired me to specific actions that I tried to implement in the community built at a distance. I tried to become its organizer, but also a companion, giving greater importance to participation and people without whom the whole strategy could not have materialized. It has had many positive effects. This is confirmed by the opinions expressed in the final survey and in unexpected thanks from the participants for the received photographic portraits of their eyes. I consider gratitude to be a trait that has a lot of positive effect on our daily lives. The pandemic contributed specifically to its practice. As Simmel (1975) points out, it is an important building block of the society and, according to Fredrickson (2004), it has an impact on the individual and the community. In my opinion, the action fulfilled its objectives and showed the importance of gratitude.

The online activities aimed at activating the society raise thoughts and many questions. Will the Internet create new opportunities for artistic practice in the building of social interactions between art educators and artists? Is an indirect impact on the viewer able to replace the real contact? Will it give you the same feelings? Does such action still have an aesthetic dimension? Will this form bring about lasting effects and changes in audiences?

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JOANNA ŁAPIŃSKA

FOUND IN THE LANDSCAPE – THE BEGINNING

Chaos and order – a search for a method and for sources

ABSTRACT

I could be myself, but without surprise,
and this would mean
being someone else.

Wisława Szymborska, *W zatrzęsieniu* / fragment

The article and the research task, "Found in the landscape – inconspicuous / coveted – imagined spaces", in which this article is written, were inspired by Wisława Szymborska's poem "W zatrzęsieniu", which emphasized the value of an attitude rejecting schemes, seeking, focused on affirmation and positive surprise. This approach to the surrounding world allows you to discover new values, images, places, which can be the beginning of a creative process. The article is a prelude to the above research task: it explains the title, assumptions and introduces the first forms – imagined spaces found in the landscape.

KEYWORDS

Kōbō Abe; Rafał Borcz; Julian Charrière; Norman Foster; Piotr Gajewski; Herzog & de Meuron; Beata Gibała-Kapecka; Juliusz Kosin; George de Mestral; Ryūe Nishizawa; Patrycja Ochman; Elżbieta Pakuła-Kwak; Mick Pearce; Renfro; Fariborz Sahb; Diller Scofidio; Hasan Syed; Tetsuo Kondo; Transsolar; Julian Vincent; Leonardo da Vinci; Ai Weiwei; bionics; form; fragment; inspiration; rhizome; rootstalk; landscape; model; nature; beginning; research project; imagined spaces; space; written space; semantics; variability; Blur Building on the Neuchâtel Lake in Yverdon-Les-Bains; Cloudscapes (Architectural Biennial in Venice in 2010); Eastgate in Harare; Esplanade-Theatres on the Bay in Singapore; Grace Farms – River Building in New Canaan; Rolex Learning Center in Lausanne; Guangzhou Evergrande Stadium; National Stadium in Bejing; Bahaitów Temple in Bahapur; Velcro

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dr Joanna Łapińska
Jan Matejko Academy of Fine Arts in Krakow

Found in the landscape – the beginning

Chaos and order – a search for a method and for sources

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Hypothesis

An order emerges from chaos. This also applies to research work which may start with the collection of seemingly unrelated elements that lead to the definition of research methods and the selection of sources.

Immersion – the beginning

> Shreds, bursts, fragments, all this is looking for a new form, then the rhythm comes into play and I start writing in this rhythm, write for it, it is the rhythm that pushes me and not what we call 'thought' (…), immediately begins to swing. [1]

Each beginning is an immersion in the endlessness of the Unknown, reaching into the depths of memory, collecting and rejecting incoming thoughts, flowing with and against current, drowning, jerking, reeling, searching for pearls until the loss of breath, catching all the pebbles in the hope that one of them is philosophical, stacking them in ranks, columns, mounds, dolmens …

> Children playing with white pebbles turn them into legions of soldiers in fierce battles that can change the image of the world. By giving meaning to things, they transform the world.[2]

This is also the beginning of the research project "Found in the landscape – inconspicuous / coveted – imagined spaces" which officially launched on September 1, 2020, with immersion in the Unknown, gathering, segregation, skipping, searching in different directions. Like a rhizome, it branches in all directions, catches various unrelated threads, building a rhizomatic network, a spatial labyrinth, so that, like a rhizome, it releases at least one knot with a bud from each fragment and becomes invincible. So I'm slowly picking up and collecting pebbles, small for now, but in large numbers, and segregating them, laying them in mounds, paths, not in dolmens for now because I did not fall into the cauldron, to move menhira, but, who knows, maybe someday? There is a mass of the pebbles, it is difficult to make selections at this stage, and there will be even more of them. Many will be rejected, some will crack into gravel, and the element will clean the sand.

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[1] J. Cortázar, *Gra w klasy*, Warszawa 2006, p. 486.

[2] A. Oz, *Dotknij wiatru, dotknij wody*, Poznań 2011, p. 124.

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Sand

Water washes the sand, moves one grain after another. Millions of grains in one wave move, swirl, collide, rub and die under an avalanche of others to be on top in a moment. They build hills, recesses, bulging strands and ditches, but only for a moment, to immediately wipe the form, melt into an apparent unity, a unified plane ready to accept each subsequent movement.

The sea and sand, photograph by Joanna Łapińska

Source: The author's archive

Everything that has form is an illusion. Only the movement of sand, negating all forms, is certain[3]…

[3] K. Abe, *Kobieta z wydm*, Kraków 2007, p. 36.

Water helps the sand, makes it sticky and lasting longer in its form, but the water also destroys, putting the grains in motion, destroying what was built.

> Streams of water and air cause restless currents. The smallest wavelength of such an agitated stream is roughly equal to the cross-section of the sand grain in the desert. According to this property, only such sand is sucked from the ground in a direction perpendicular to the flow of the current. If the cohesiveness of earth is low, even a light breeze snatches the sand into the air. Stones and clay remain unmoved, and sand, falling to the ground, accumulates on the leeward side. It therefore appears that the basic property of sand belongs to the sphere of aerodynamics.[4]

Sand is a loose sedimentary rock composed mainly of quartz. The cross-section of grains ranges from 1/16 to 2 mm, on average 1/8 mm. As Kōbō Abe's "The Woman in the Dunes" reads: "Sand never rests. It's slowly but definitely coming to the surface of the earth." [5]

The Woman in the Dunes is a delightful novel about the power of sand. The story begins when a man arrives at the sea side in search of a rare species of insect. Not being able to return home before dark, he reaches an unusual place.

> He was surprised that only where houses stood the area did not raise. The road climbed uphill and the village remained on the same level. No, not only did the road rise but also the area between the buildings. In fact, the whole village lay on a rising slope, and only the houses stood on the same level. This impression deepened constantly, until it finally began to seem to him that all the houses were built in large cavities hollowed out in the dune slope. The sand hills through which the road ran were now above the roofs. And the houses were hiding deeper and deeper in the sand (…). The man looked towards the village and saw rows of huge cavities, which were the larger the closer they were to the ridge of the dunes. Facing the settlement, they formed several parallel layers and looked quite like cells in a decaying honeycomb. The village was imposed on the dunes or, rather, the dunes overlapped on the village.[6]

[4] Kōbō Abe, *Kobieta z wydm*, Kraków 2007, p. 15.

[5] Kōbō Abe, *Kobieta z wydm*, Kraków 2007, p. 16.

[6] Kōbō Abe, *Kobieta z wydm*, Kraków 2007, p. 11–12.

A female resident of the village hollowed out in the sand takes the man in, which turns out to be tantamount to imprisoning him. From now on, he has to fight not so much with the villagers but with sand filling the cavity and tearing into every hole, ready to bury him alive. Numerous descriptions of the action of grains with a cross-section of 1/8[7] build an atmosphere of horror, bring out the power dosing in something, it would seem, inconspicuous, which, however, in the mass poses a significant threat. The man comes up with the thought: "Or maybe not having a form is the best expression of strength?"[8].

The sand of the Baltic Sea, photograph by Joanna Łapińska

Source: The author's archive

The sand on the beach on the Baltic Sea is one of the more pleasant ones in Europe: fine, yellow, in a warm shade, completely unlike that of the deadly threat in the Japanese novel. It accepts all

[7] Metonymy concerning sand used by Kōbō Abe.

[8] Kōbō Abe, *Kobieta z wydm*, Kraków 2007, .p 29.

traces: feet, paws, palms, is servile to the sea, moistened resists winds, dry is carried by every blast. He lacks a form, is in constant motion and this instability delights. Wave-painted images and reliefs drilled by air currents will form part of the basis of this research project. Imagined spaces will be derived from them, from their views.

Idea

The idea of the project came about during the pandemic, a time of isolation from landscapes, from nature, when imagination had to keep up with the lack of stimuli, when art was one of the many ways to escape madness. This is a response to the issue of the "Nature in Art" exhibition which was staged in MOCAK in 2019, where, in addition to the stunning paintings by Rafał Borcz or Juliusz Kosin, depicting nature in a very subjective way, from an unexpected point of view, there were "Panoramas" by Julian Charrière – high-mountain landscapes artificially created by the artist using flour and firefighting powder on heaps of land on Berlin construction sites. The Swiss artist "finds" beauty hidden in inconspicuous wasteland, nevertheless constituting the landscape, and sees in them "imagined spaces", an alternative world hidden under the shell of everyday life.

This is also the idea of the research project titled "Found in the landscape – inconspicuous / coveted – imagined spaces" in order to extract from a fragment of the actual landscape another space, unusual, not necessarily associated with a given place, with the original, which is also close to the painting of Rafał Borcz who builds his synthetic landscapes from selected motifs cleaned of unnecessary elements.

Dr. Patrycja Ochman gave a lecture at the International Biennial of Interior Architecture in 2018 on possible space, built from fragments, from scraps of reality, of which, as she emphasized, we are able to build new, countless territories.

> When we see a city or a house we don't see what it consists of, what it's made of, but we see signs – shapes that we assign a certain meaning to. We read spaces with one glance, a scan, we capture images that we know. Yet one city and one house contain an infinite number of characters, such as the infinite number of cities that Venice contains in Italo Calvino.[9]

[9] P. Ochman, *Intro. Przestrzeń możliwa*, [in:] *Publicspace re/in/venting*, ed. Beata Gibała-Kapecka, Kraków 2018, p. 77.

Let me paraphrase Dr. Patricia Ochman's statement for her own project in this way: seeing a tree or a heap of earth, we do not see what it is made up of; we see fragments to which we can assign any meaning. We read the images with a single scan but sometimes the eye deceives, plays a prank, and for a moment we see something completely different, unexpected. Each part of the landscape – a cloud, fog, tree, leaf or flower – can contain an infinite amount of imaginary spaces which manifest themselves to the recipient as the foundation of the thought model, as the foundation of future spatial actions in the process of the assignment of meaning.

The assignment of meaning – frolic of the moment, one word, image, thought

> Giving meaning when experiencing space consists usually in an unrealized reading of written values or in assigning new ones. It is a complicated process involving different parts of the brain and, basically (…) the whole person and their surroundings. However, it does not burden the recipient, because they, living in a certain culture, practically from the beginning of their existence are introduced into the existing code – the alphabet of meanings and signs – and on its basis they build the world around them. [10]

Let's look at how to give meaning to a group with a limited number of elements. In the Polish alphabet there are 32 letters (characters), which gives 263 130 836 933 693 530 167 218 012 160 000 000 combinations. There are about 150,000 words in the dictionaries. When we add diminutives to this, we can reach millions, but not quintyliards[11], of meaningful words. And, interestingly, 1,200 words are enough to communicate. The average Pole knows several thousand words, and every day he or she uses about 2,000 chosen from over 263*1033 possibilities[12]. And yet the number of combinations of a point, line and plane is countless![13] The only limitation in this case is the recipient, which will be called into question in the research work described, in activities at the interface of literature, art and architecture.

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[10] J. Łapińska, *Przestrzeń zapisana*, praca doktorska, Kraków 2013, p. 49.

[11] In English: decillions

[12] See Piotr Komander, *Czy język polski jest bogaty?*, 10/01/2016, http://secundum.pl/czy-jezyk-polski-jest-bogaty/.

[13] See Kandinsky Wassily, *Punkt i linia a płaszczyzna* (Łódź 2019) i Adrian Frutiger, *Człowiek i jego znaki* (Kraków 2010).

Notations of ideas – the research method

„In architectural design, the thought model is the basic model for the creation of the project. This model can be transferred to a project by writing an idea (…). There seem to be six ways to write ideas in architecture." [14] These are not, of course, methods assigned exclusively to architecture, so it is worth recalling them at this point. These are description, scale drawing (technical drawings), spatial drawing (showing space), film, digital model and physical model[15]. Professor Piotr Gajewski further divides models into three categories: the homologous model, which duplicates the principle of the construction of the original – "Observation of nature or natural phenomena is the source of countless models used for homologous solutions"[16]; the analogous model, in which you can find features of construction or function – "Analogy is also associated with inspiration. A creative architect builds novel things but they are also embedded in the existing reality, that is, they are inspired by existing beings"[17]; as well as the isomorphic model mimicking the form. These methods will be used as a research method to extract the spaces imagined in the project "Found in the landscape – inconspicuous / coveted – imagined spaces".

Trees, leaves, flowers...

Trees, leaves, flowers have always fascinated artists and architects. In ancient Egypt, a land devoid of forests, where wood, imported from distant countries, was a luxury, a prototype of a structure supported by a stone colonnade was developed, in which today we see a resemblance to evenly growing forest nurseries. The columns were topped with a head in the shape of a lotus or palm tree flower. The form of the column, developed by consecutive civilizations, gained attributes that brought it closer to the natural world: the acanthus head in ancient Greece, the slender Gothic column with a carved head in the form of leaves, or the Baroque stem braided with a stone bindweed.

[14] P. Gajewski, *Model*, Kraków 2019, p. 59.

[15] See P. Gajewski, *Zapisy myśli o przestrzeni*.

[16] P. Gajewski, *Model*, Kraków 2019, p. 73.

[17] P. Gajewski, *Model*, Kraków 2019, p. 85.

The use of the image of the Mediterranean plant, acanthus, from which the decorative motif itself took its name, was not limited to the ornamental motif in architecture. It was also used in vase painting and in relief, and later, in the Middle Ages, in the decoration of manuscripts. In the Renaissance, acanthus flower appeared as an ornament next to the acanthus leaf.

The lotus flower, in turn, present in Egyptian ornamentation, today became the inspiration both for the Bahait temple in the village of Bahapur near New Delhi, the project of Fariborz Sahba, denying the traditional form of the dome-vaulted structure on the set of the rounded nonagon, and for the newly built soccer stadium of the Guangzhou Evergrande team, designed by American architect Hasan Syed, which is to become the third largest stadium in the world. The structure of petals of this plant, with numerous processes that do not retain water, and also cause surface cleaning, allowed scientists to develop self-cleaning surfaces, e.g. roof coverings.

Bionics, also called biomimetics and biomimicry, is a science that translates nature observations into technological solutions, using the achievements of nature to improve human life, converting what is discovered in the landscape into artificial, usually useful creations. There are many examples of this, including the hull structure of the boat imitating the thick skin of a dolphin, the use of ultrasound “borrowed” from bats in medicine, or the cochlear implant for the hearing-impaired. In 1941, the fruit of burdock, which got stuck to a dog’s coat while walking, became the basis for the invention of the synthetic velcro by the dog owner, George de Mestral. British biologist Julian Vincent, the world-renowned biomimetic specialist, developed, yet as a student, the design of smart clothing that adapts to ambient temperature, inspired by the principle of the construction and operation of the cone, the scales of which open under the influence of heat. Similarly, the façade of the “Esplanade - Theatres on the Bay” complex in Singapore, designed by the local DP Architects (DPA) office, is covered with aluminium panels that open and close under the influence of light. In the field of architecture we should also mention the design of the Eastgate office and commercial complex in Harare (Zimbabwe) by Mick Pearce, in which the ventilation system solution is modeled on vertical ducts in termite mounds, and of course the London office building designed by Norman Foster, called Gherkin, which was inspired by the light and very durable construction of the skeleton of a primitive ocean sponge from the Euplectella aspergillum species, called “Venus’ flower basket”.

Bionics, however, is not a contemporary invention. Already in the 15th century Leonardo da Vinci, using the sense of observation and knowledge of various living organisms, designed machines, which to this day delight millions.

There are many successful architectural implementations which not only drew technological solutions from the natural world but are also themselves, in a sense, a tribute to natural beauty. They re-scale minute creations of the animal world into the impressive size of urban structures. Examples include the Beijing National Stadium, “The Bird’s Nest”, built for the 2008 Olympic Games by the Herzog & de Meuron team project in collaboration with Ai Weiwei, or the transposition of the landscape found into the language of construction, as can be seen, among other things, in many works of Japanese office SANAA. “The Rolex Learning Center” built in Lausanne (Switzerland) in 2010, consists of two undulating layers of a 37,000 m2 surface, with air between and penetrating through the holes, alluding to the soft mountainous Swiss landscape. In New Canaan (USA), Kazuyo Sejima and Ryūe Nishizawa designed the new “River Building” for the Grace Farms Foundation – a glittering ribbon meandering like a river in a valley, reflecting the blue and gray of the sky.

Clouds

The activities of the SANAA office, due to the sensitivity of its staff, should be located on the borderline of architecture and poetry. Their buildings, using modest resources, are delicate, ephemeral, emanate peace and knowledge of generations, blur boundaries between the outside and the interior, between dream and reality. Owing to their reflective planes, such as polished sheet and glass, they change depending on the weather conditions: sunlight, cloud cover and environmental influences. Just like the clouds in Wisława Szymborska’s poem:

I would need to be in a hurry
with describing clouds –
after a brief moment
they cease to be the ones, they begin to be different.

Their property is
to never repeat

their shapes, shades, poses and composition[18].

They are variable, unstable, they pay no attention to anything, to us, to those watching them, to the life under them.

Clouds do not need to be seen to flow[19].

Here it is worth to mention two clouds artificially created, fascinating, astonishing and at the same time silencing, moving the audience into a different reality, allowing for the experience of being in the cloud, thus closer to poetry than architecture.

The first cloud floated on the Neuchâtel Lake in Yverdon-Les-Bains, the wind carried the cloud, stretched it, revealing fragments of the steel structure, 35 thousand nozzles. This is the "Blur Building" designed by Diller Scofidio + Renfro, built for Expo in Switzerland in 2002.

The other cloud hovered over the floor of the hall in the Venetian Arsenal, just above the visitors' heads, dissolving the columns visually, blurring the view above. This is the "Cloudscapes" by Transsolar + Tetsuo Kondo. produced at the Venice Biennial of Architecture in 2010.

Both were merely momentary emanations, changing in time, trapped, assigned against their nature to the place, the materiality of which had passed with the end of events, while the idea remained in those who were fortunate enough to experience them. As Professor Beata Gibała-Kapecka writes, "the quality of interior space (architecture) is also measured by its ability to go beyond its own assumptions, creating 'meaning-forming' illusions that turn the object into a message and a stimulus, while creating a different reality"[20].

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[18] Wisława Szymborska, *Chmury*, [in] Wisława Szymborska: *Chwila / Moment*, Kraków 2003.

[19] Wisława Szymborska, *Chmury*, [in] Wisława Szymborska: *Chwila / Moment*, Kraków 2003.

[20] B. Gibała-Kapecka, *Rzecz o kształtowaniu przestrzeni. Wzory związków pomiędzy ideą i formą, treścią i strukturą*, [in:] *Trans-formacja lokalnej tożsamości. Forum. Cracovia. NOT*, ed. B. Gibała-Kapecka, Kraków 2013, *p*. 19.

Mounds, rows and points – the thesis

This text, like any beginning, turned out to be a collection of thoughts touching the subject, taken out of the abyss of the Unknown and arranged in mounds, rows and points, as confirmed by the hypothesis set at the beginning of the article.

Thesis: An order has emerged from chaos.

As a prelude to the artistic and research project, this article allowed the idea to become clear and to define research methods (literary writing, drawing, photography, ways of recording professor P. Gajewski's ideas, giving meaning, working on construction mechanisms and principles of operation). The inspiration was fragments of the landscape, which are an expression of variability and momentary phenomena in nature (clouds, sand, water) "found" in the course of writing and captured by a photo camera (they will become sources, from them I will draw in my research work – the artistic project) and numerous works of fiction, always present on my artistic path, from which, among other things, I drew during my work on the "Written Space" dissertation. Literary threads of experiencing the space in which I characterized the threads of experiencing space found by me in numerous works of fiction, which I then translated into a space design for the book. The promoter of the work was Professor Elżbieta Pakuła-Kwak with whom we also conduct research. As we write about our activities:

> The literary text is an integral part of our research. It is subject to transformations and adaptations dependent on the confluence of inspiring phenomena and insight of observation. Words and images stratify, combine into a rhizomatic network, exceeding the system-defined language of architecture. This is how the processual network of words and images with countless connections was created to activate the design process. It allows you to see more, know more, feel more[21].

The project "Found in the landscape – inconspicuous / coveted – imagined spaces" is non-constant, variable, flowing like clouds, is a process consisting of an unlimited number of fragments which, like grains of sand, are in constant motion and in this instability of form lies its strength.

[21] E. Pakuła-Kwak, J. Łapińska, *Otwarte / zamknięte – warsztaty. Aneks*, [in:] *Aneksy kultury. Dziedzictwo, współczesność, wirtualność*, ed. Jacek Siwczyński, Patrycja Ochman-Tarka, Kraków 2019, p. 50.

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AGNIESZKA CIEŚLIŃSKA-KAWECKA
KIMBA FRANCES KERNER

TRANSFORMATION OF THE 18TH CENTURY METHOD OF TRANSFERRING GRAPHIC IMAGES ONTO CERAMICS INTO THE MODERN TECHNOLOGY IN THE CONDITIONS OF THE GRAPHIC ARTS WORKSHOP. METHODS OF TRANSFERRING GRAPHIC IMAGES ONTO CERAMICS

An artistic and research project carried out at the Interdisciplinary Studio of Classical Techniques, Faculty of Graphics, Academy of Fine Arts in Warsaw

ABSTRACT

The article deals with the implementation of an 18th-century method of transferring graphic images onto ceramic substrates based on a contemporary graphic art workshop. Popularised in the 18th and 19th centuries in England, the technique called transferware used engraving matrices, and the decoration was transferred onto ceramics using tissue paper and subsequently fired in a two-stage process. An important element in the implementation of the new method of transferring graphics onto ceramics is the development of recipes for contemporary low-toxic or non-toxic ceramic paints in the basic colour range - vitreous and underglaze ceramic pigments. The pigments created and tested, due to the range of physical parameters studied, can be spectroscopically studied objects. The process of implementation of the transfer also describes the study of the image carriers, from intaglio to relief printing matrices, the development of recipes for the composition of graphic-ceramic paints, firing methods, methods of image application, and the papers used. Preliminary experience shows that not only the transfer of graphics - an image from a graphic matrix onto ceramics is possible, but also it produces interesting artistic effects

without the use of toxic solvents. Recreating old methods of transferring graphics onto ceramics in combination with new technologies is an innovative idea. The method of transferring the matrix onto ceramics creates an innovative workshop and allows an interdisciplinary studio to operate within the structure of artistic printmaking. The aim of implementing the new method of technology is to use it for artistic solutions.

KEY WORDS

Marek Cecuła; Jean-Baptiste Le Prince; John Sadler; Małgorzata Warlikowska; Staffordshire ; Ćmielów Design Studio; Academy of Fine Arts in Warsaw; Baume scale; Institute of Ceramics and Building Materials in Warsaw; ceramics; pigments; ceramic pigments; porcelain; transferware; faience; clay; ceramic production; graphics; printmaking; etching; aquatint; linocut ; spectroscopy; digital ceramic printing

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Transformation of the 18th century method of transferring graphic images onto ceramics into the modern technology in the conditions of the graphic arts workshop. Methods of transferring graphic images onto ceramics

An artistic and research project carried out at the Interdisciplinary Studio of Classical Techniques, Faculty of Graphics, Academy of Fine Arts in Warsaw

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Introduction

Research on the reconstruction of classical methods of transferring prints onto ceramic substrates was undertaken last year at the Interdisciplinary Classical Techniques Studio (Academy of Fine Arts in Warsaw). Based on our common interest in classical printmaking as well as porcelain, we started to analyse an interesting and forgotten issue, i.e. the transfer of images onto ceramics using a printmaking matrix. Our aim was not only to reconstruct the 18th century method of decorating porcelain, but also to implement it into the contemporary workshop of graphic techniques and to use it for our artistic solutions.

History of the transfer, of the method and its application

The method of transferring a graphic image from a matrix to ceramics, discovered in Italy, was popularised in 19th century manufactories in England, especially in the Staffordshire region. One of the inventors of transferware was John Sadler, an 18th century English printmaker, who, based on his observations of children's games, developed the technique, which allowed for the mass transfer of prints onto ceramic plates[1]. Transferware is a form of decorating pottery where the design was applied by transferring an image from a hand-engraved copper or steel plate to wet tissue paper and then to the body of the pottery being decorated. Transferware was most commonly found on ceramics, but also on porcelain. Most transferware was produced in the Staffordshire region of England. The copper plate was meticulously hand engraved, with the design using a variety of methods (including spot stamping, which creates a shading and tonal variety) and tools such as a roulette or engraving stylus, which make pigment penetrate into the V-shaped grooves. The depth of engraving and the precision of the line or dot determined the strength of the colour. It must be remembered that it took several weeks to make a copper plate. The finished engraved plate was heated on a cooker. A metal oxide (usually cobalt oxide) was mixed with printing oil and rubbed into the grooves of the plate to ensure a good imprint and transfer of the drawing. The excess of the prepared mixture of the ceramic paint was rubbed off, so that the ink-paint remained only in the grooves of the plate, similarly as in the graphic intaglio techniques. Then, during the transfer process, an appropriate tissue paper moistened with a soap solution was evenly applied to a heated copper plate. The prepared plate with tissue paper was passed through a felt-covered press, which caused the ink to be imprinted onto the tissue paper, after which the plate was placed back on the cooker in order to safely remove it from the matrix. The paper with the reflected image (a mirror image) was

1 William Turner, *Transfer Printing on Enamels, Porcelain and Pottery*, London 1907.

successively placed on the ceramic, smoothed out of any wrinkles and then rubbed with stiff bristles to transfer the print onto the porcelain object. The object thus prepared was placed in a bath of cold water, and the tissue paper was removed without destroying the colour and image. The object was then fired for ten hours at 680-750°C so that the oil evaporated first. The ceramic object was then fired a second time at 1050°C so that the design turned blue. In pace with the development of the printing techniques, the methods of transferring the image onto ceramics have undergone numerous transformations.

Transfer used today and the problems associated with it

Nowadays, screen printing, or less commonly digital printing, is a commonly used printing system. In the screen printing technique, the printing form is a fine mesh stretched on a frame and covered with light-sensitive emulsion. Preparing it for printing consists in making a stencil, i.e. covering places that will not be printed. The photosensitive emulsion on the grid is exposed by contact in a copying machine. After development (rinsing of the unexposed emulsion) and drying, the screen with the stencil is ready for printing. The print is created by pressing the ink onto the substrate with a squeegee. In this process, an image - a stencil - is quickly made, often by preparing it in a computer. However, screen printing materials intended for ceramics (paints, mordants, varnishes) are highly toxic, therefore working on the transfer of graphics using this method is practically impossible in the conditions of an art workshop. One of the most important chemical liquids used in screen printing is the solvent. Solvents usually consist of a mixture of acetone (about 30%) and toluene (about 70%). Some manufacturers also use xylene, ethylbenzene, methyl acetate, ethyl acetate, various alcohols and other additives in its composition. Of those listed above, toluene is used in the greatest quantity and is very harmful. Its adverse effects include possible damage to the respiratory, circulatory, reproductive, nervous and immune systems, and especially to the nervous system, which consists largely of lipid-rich tissue in which toluene is soluble. Other harmful substances used in screen printing are flammable paraffin and turpentine.

Ceramic digital printing

The second commonly used method is digital printing with ceramic pigments. The tracing paper pattern is precisely prepared in a computer with specialised software and then, using a printer calibrated to a specific set of pigments, it is transferred to the object for future firing. The range of colours for printing from the CMYK colour palette offers a wide range of possibilities. It is all the

more interesting for the artist because it is possible to work with colours that have been tested to avoid mistakes after firing (95% colour conformity after firing). The process of transfer of the image by means of a digital printer, as well as the printing from the matrix, is almost non-toxic. The preparation process is fast due to the different parameters. It is a very effective tool, providing an abundance of effects and very high predictability of the colours used in the final result. However, digital printers with ceramic pigments are almost unavailable for artistic research because they are not common and the services involved are very expensive.

The properties of transfer from the metal matrix

Preliminary experience shows that the transfer of graphics – an image from a graphic matrix to ceramics is not only possible, but produces interesting artistic effects without the use of toxic solvents. One of the most important differences in the transfer of digital print in relation to transfer of screen printing is that digital print transfers have a range of tones. With one quick print, a gradation of colour can be achieved, whereas with screen printing this effect requires superimposition of multiple images. At the same time, the colours applied by screen or digital printing are different and have both their limitations and unique qualities. The idea of researching and developing this classical process and implementing it into the conditions of contemporary graphic art can broaden the range of methods available to artistic printmaking today. At the same time, this method offers many possibilities of creating structures and matters resulting from the nature and essence of the graphic matrix. For example, the deep lines of an etching can be felt on the surface of porcelain even after it has been fired in a ceramic kiln. Classical transfer, which refers to the tradition of the 18th century in our research, is based on acquisition of image using classical printmaking techniques. Both the preparation of matrices (using solutions from various intaglio techniques) and the method of transfer onto ceramics itself - using various types of papers, carbon paper and tissue papers - have been analysed and adapted to the present state of knowledge.

Intaglio techniques

In intaglio printing techniques, the ink is rubbed into grooved or etched areas which are concave in relation to the surface of the plate. The drawing is worked with engraving needles, scrapers and roulettes. The print is made on rice paper and carbon paper using a printing press. The first prints printed from engraved metal plates appeared in Europe in the middle of the 15th century. Alongside the widespread intaglio and copperplate, which offered the possibility of large print runs, the dry needle technique developed at the same time - the drypoint, similar in its character to copperplate. A

drawing in this method is made on a prepared metal matrix. For studies, we use zinc sheets and aluminium sheets because of their different qualities. By appropriate handling of the line, tonal transitions from very subtle delicate greys to deep blacks can be obtained in this technique.

The next technique tested is etching (Latin: *aquafortis* - strong water) - an etching technique invented at the turn of the 15th and 16th centuries. A line drawing on a prepared - covered with asphalt - surface of a metal plate is subjected to etching. The technique makes it possible to obtain a very diverse linear drawing by means of etching. The aquafortis etching method seems to be the most optimal technique to be used for transfer. The etching process will use nitric acid, ferric chloride and sodium chloride sulphate. The most eco-friendly method is to use ferric chloride and sodium chloride sulphate. Ferric chloride at 45 degrees Baume will be used to etch copper plate, while sodium chloride sulphate in a solution of 75 g per litre of water will be used to etch aluminium. The etching for zinc in nitric acid will be carried out in a solution, with a water-to-acid concentration of 7:1 (after the bath, the solution will be neutralised with baking soda).

Attempts at testing graphic transfer substrates will also include the technique of aquatint (Italian: *aquatinta*, coloured water). Aquatint was invented in 1768 by Jean-Baptiste Le Prince. A metal plate is sprinkled with powdered rosin and then heated, so that the rosin grains melt and stick to the metal surface (rosin is a natural resin from coniferous trees - the composition of rosin is 90% a mixture of two isomeric resin acids). This creates a kind of raster which protects the surface of the plate from the operation of nitric acid. The technique makes it possible to obtain valour-differentiated planes by means of etching.

In relief printing methods

The next research will cover a relief printing technique: the linocut, whose name comes from the matrix, linoleum, invented in 1863 and very quickly used by artists. In this method, the ink is applied from a roller to the surface of the matrix, blackening the convex areas that are not grooved, while the lines and concave planes remain white. The drawing is cut out with chisels and knives. However, the effect of this method is different from intaglio techniques. The gradation of greys is a consequence of the intensity of the cut out white lines and points, which create tonal transitions from black to light greys. The method of reflection means that the print is devoid of graphic matter, but has a characteristic relief.

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Studies related to ceramic paints

A very important element in the implementation of the method of transferring graphics onto ceramics is the development of the formulas for contemporary low-toxic or non-toxic ceramic paints in a basic range of colours for ceramics, porcelain, glass. The pigments, fillers and fixatives we are testing are to form a set of materials for the graphic methods of transfer. An effective method of transferring a graphic image onto ceramic substrates requires the implementation of tests and studies in order to establish formulas, reagents and technological processes; it also requires examination and description of the carriers of the image to be transferred: starting from the intaglio to the relief printing matrices; development of formulas for the composition of graphic-ceramic paints, firing methods, ways of applying the image, and papers used. Due to the range of physical parameters of the phenomenon studied, the dyes created and tested can be examined spectroscopically.

Spectroscopic studies on baked pigments

Spectroscopy is used in analytical chemistry for the quantitative determination of various organic compounds. Chemical quantitative analysis makes it possible to find out the numerical value in appropriate units of measure (for example in grams or moles) of the chemical composition of the dye mixtures being tested. There are many specific methods of quantitative analysis used depending on the chemical properties of the substances under study. In this study, the colouring matters used will be subjected to the quantitative and qualitative chemical analysis. The aim is to determine the composition of paints or fillers (the percentage of individual components in the mixture of the selected component – the quantitative analysis, and to determine what components the substance consists of – the qualitative analysis). Spectroscopy, as a method involving the generation and interpretation of the spectra (which are popular in the chemical analysis of the composition) of paint intensities is the best method for describing the dyes we test.

Contemporary application in Poland

Currently in Poland, the issue of transferring graphics onto ceramics from an artistic point of view is dealt with mainly by Małgorzata Warlikowska, PhD, at the Faculty of Graphics and Media Art of the Academy of Fine Arts in Wrocław, who conducts classes on transferring graphics onto ceramics using screen printing. The screen printing technique is also used in industrial settings, for example at the Ćmielów Design Studio headed by Marek Cecuła. However, when a project requires only a small

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Kimba Frances Kerner, “See the Red Sol”
Installation from the cycle "Alchemical Transformations

Source: Author’s archive

number of prints, the whole process of screen printing becomes very inconvenient. Many projects do not require a large number of prints, especially when they are used for smaller sculptures or conceptual works. In addition, this technique is burdened with high toxicity, which is a serious disadvantage in an art workshop setting. The classical transfer technique, on the other hand, minimises the burden to only a few prints, which is why the proposed classical method, updated for contemporary use by artists, seems extremely useful in the creative process.

Porcelain, glaze, ceramic printing and mixed techniques, 2020

Source: Author's archive

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TADEUSZ PIETRZKIEWICZ

REINVENTING – THE EFFECT OF COMPROMISE IN THE DESIGN

SOURCE:
PUBLICSPACE RE/IN/VENTING, ed. B. Gibała-Kapecka, Krakow 2018.

ABSTRACT

Re-in-venting, understood as a rethink of new architectural projects, is provoked by what I refer to as errors coming as a consequence of compromise. These errors are due to the following reasons: transience, loss of universal values and the frequent designers' incongruity with their own beliefs. The error of transience consists in that designers ignore this phenomenon. It manifests itself in the designers' insufficient taking into account the importance of variability of functions and the impact of the pace of civilization changes on spatial conditions. The above mentioned tendencies lead to a rift between architecture and its time. The second error is compromise that the universal value system is subject to. This error is provoked by post-modern individualism. In this age of post-modernity, transience and departure are impossible to explain and how difficult to accept. The lack of stable values also creates serious ethical obstacles to space design. It is difficult for us to distinguish what is good from what evil brings. Legal norms are created which presuppose dishonesty. The Public Procurement Law is a bizarre compromise between people (designer, employer, contractor), the essence of design in space and the law itself.

As part of this compromise, the designer has been deprived of the right to freely form creative project teams, freely choose materials and equipment. As a result of these assumptions architecture is subject to a process of

dehumanization. The third plane of this compromise is the quite common paradox of disagreement with one's own beliefs, which often happens to designers. To a large extent, we depart from our own ideas. I mean new currents or architectural ideas that (as designers) we see, admire, co-author but, for various reasons, we abstain from their implementation

KEYWORDS

architecture; interior architecture; designing; design theory; design ethics

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prof. dr hab. Tadeusz Pietrzkiewicz
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Reinventing – the effect of compromise in the design

SOURCE:

***PUBLICSPACE RE/IN/VENTING*, ed. B. Gibała-Kapecka, Krakow 2018.**

Architect – dictate – compromise

Such a dictate

The architect occupies a place at the top. This raises fear and hope. Makes it possible to discovers the dimension of space and the scale of one's self-worth. It forces you to search. Makes it necessary to take risks. Commands to act and accept responsibility for action. Being at the top means loneliness.

No one has ever been and is not as lonely as the man standing on top of the post-modernity.

The design is an authoritatively expressed statement. It is a kind of dictatorship. There is nothing surprising about this because the design requires categorical, binding and lasting decisions. Questioning them could potentially cause a disaster with a series of endless adjustments because a good design is a series of decisions that are mutually connected. Even an experienced designer often finds it difficult to fully predict which design decisions are adjustable and which changes will nullify the design.

It should be remembered, however, that the formation of the design dictatorship is accompanied by constant doubts, hesitations and fears caused by concern for the good that is to result from the decisions made. Doubts arise from the search conducted in the sense of one's own design power, but also in the face of doubt in it.

A compromise or a dictate?

The agreement reached through mutual concessions is reflexively seen as something generally expected. This feeling seems justified, especially when we refer directly to the design as a marketed and socially active field of creativity. Design arts seem eternally doomed to compromise.

A deviation from principles, assumptions or views in the name of important objectives or for a practical gain is socially recognized because it is associated with coexistence between all actors involved in a particular task.

However, how should the compromise be combined with the authoritative nature of the design? It can be said that in design there is time for compromise and the moment of a departure from it.

When we think a little deeper about the essence of creative activities, we will quickly find that compromise definitely does not reconcile with the essence of art. This work opposes any form of compromise. "Where the compromise starts, there the art ends", the person "standing at the top" says to me. "Without the fruit of this tree, there is no creativity. The statement expressed here is the most ordinary consequence of events. The fruit of the tree of cognition has already been picked", reminds me the voice from the "top".

The coexistence of good and evil

Does creativity carry with it an element of coexistence between good and evil? This view should not come as a surprise. After all, we participate in the real world. Reality has trouble with the contrast between white and black. The reality is grayscale. This does not change the fact that taking an authoritative position causes us understandable anxiety. We tend to see as an oppressive person someone who exerts a kind of dictatorial pressure on their environment. In practice, however,

creativity is reluctant to profess the utopian principles of democracy and far-reaching conventions. It has a more masculine beauty of character. It's a little rough.

We can discuss and argue, but the final decision must be on the creator's side. On the side of the one who has control over the orientation of the whole task. His determination should not be disturbed. This would be an unreasonable, unfair and, above all, erratic rivalry because, in any case, it would harm the final result. If we want to stand in the way of the designer, we need to realize that then someone else will have to take the initiative.

It should be presumed that the design dictate not only expresses the designer's personal preferences but also defends the quality of the place and the needs of people tying their fates to the place to be designed. We are not authorized to raise suspicions about dishonesty of anyone's intentions. The dictatorship of the design can therefore defend the public good, while defending the creativity and personal views of the designer. We will never know whose intentions were pure. Failures can also be real. We will not know who and how much erred and how much this person has actually strayed. We will not know how much this straying enriched or impoverished the errant and their environment and the beneficiaries of the proposed sites. We will not know who is more mistaken: the designer supporting dialogue and compromise, or the one adopting the dictator's attitude.

We are all responsible for spaces around us. They will stay after us and testify to our awareness of the understanding of space. First of all, they have to ensure that the generations following us can still use these places. Once a place has been touched, it can no longer be restored to its previous state. In the above sense, the places in which we live deform permanently. In view of the above, it is very difficult to find a place to compromise in architecture.

Reinventing – the effect of a compromise

Reinventing

Reinventing – according to the intention of the hosts of our discussion at the 5th AW Biennial, is to be about the spaces realized today, not historical ones. The assumption adopted by the hosts provokes special reflection.

You will ask: "Why would a compromise be responsible for *reinventing*?". It should be noted here that this question does not necessarily suggest a negative or questionable meaning of the term *reinventing*or a particularly positive meaning. It can be considered "something" staying in harmony with the nature of things. Just as natural are: error, loss of value, the paradox of being in dissent with

oneself, or the passing. Nor should we feel threatened on account of embracing our accomplishments under the heading *reinventing*.

Reinventing with a compromise combines the association of an error enforced by the compromise. This is not an objective error of a kind of a spelling error but a mistake contained in the nature of things. For instance, the passing can be such an error for a person while the ignoring of the phenomenon could be the error for someone else. The passing occurs directly in proportion to the rate of changes taking place around us, as well as revaluations so frequent and fashionable today. Revaluations, redefinitions – they are the engine of the passing. They are the catalyst for the departure and the following of nothingness. Friedrich Nietzsche and Martin Heidegger have already written extensively about this problem. They called it "nihilism". The compromise we go to with "something" or "someone" enforces a kind of an "error", which gives room for what we might call *reinventing*.

Compromise – the "error" of the passing

Let us consider why "something – after all – still quite new" we need to rethink, rediscover.

Firstly, it provokes a **mistake** that I would describe closer as the "**error of the passing**". This is a kind of a design error driven by a compromise that forces you to ignore the passing.

We do not want to pass away but the passing is inevitable. Due to the loss of a culturally established system of values we cannot find ourselves well in the face of the inevitable nature of the passing. Therefore, we subconsciously run away from it or at least want to erase it from our consciousness or ignore it. In this sense, we are going to make a kind of compromise with ourselves. We want to treat the passing as a mistake of nature. We often do not want to accept the aging of the surrounding places and materials in our environment, and yet it is a natural turn of things and on this principle constitutes the beauty of materials.

I observed an interesting phenomenon in Gdansk: designers were required to use indestructible materials, unaging, always brand new. While strolling through streets of Krakow, I was surprised how often degradable materials were used here, even in places exposed to weather. The past and testimonies of the aftermath of the action of time are present in Krakow. We can go back almost at any distance, pointing to specific tenement houses, places, laying our hands on specific walls. There is also the continuity of witnesses of time as persons physically familiar to us who witness the passing. In view of the complete pacification of Gdansk (I mean the consequences of World War II), everything is new in Gdansk. Even historic monuments are new because they have been rebuilt. New are the Main Town and the Old Town. Also the population of Gdansk has undergone an almost complete exchange. In Gdansk we have no experience of the passage of time and of the aging of

materials in our environment. We do not have immunity to the passing and no experience of its course in space. We do not even have the graves of loved ones and testimonies of those close to us in our places and our space. That is probably why we want new and unaging things around us.

It is even more difficult to come to terms with the passing of views on the understanding of space. The lack of readiness for their variability is probably the effect of aging, the effect of the passing.

The **error of the passing** also includes troubles with the acceptance of the progressive variability of functions of architecture. The function of buildings passes away faster than it used to be. True, it is extremely difficult to abstract to the functions of architecture. On the other hand, we should look for a formula of objects that are as functionally universal as possible. Note here that while architecture loses its relationship to the function, its interiors retain it. Except that today the function of the interior changes faster. The basilica, in a sense, can be an archetype of a spatial solution open to the variability of functions. This kind of experimental search for architecture open to the variability of functions requires designers to react quickly, resulting in flexibility in design and design courage. The schemes of developed and profitable design reflexes should be denied. One would also need to take the risk of inspiring a new architectural idea. Architects would have to regain, or re-develop, the right to seek and formulate ideas. The designing of creative risks in architecture is a task in itself.

Taking into account the modern realities of space, including the passing, some designers try to give architecture an increasingly less obliging form to demonstrate its fleetingness, willingness to change and even depart. While writing about the form, I do not mean only the shape of the architectural body or its individual elements but the general way of treating it, creating it. We will see this trend mainly in the selection of materials, technologies and the resulting dependence of a specific tension within the message and the importance of architecture. Its very form often testifies to a great amount of creative expression and sometimes, as in the case of materials and technology, it is withdrawn from the ambition for its particular importance. This phenomenon can explain the view that what is intrinsically doomed to flimsiness because of the rate of the passing cannot be sustained.

The pace of these changes is underpinned by the development of information dissemination systems and the technological progress behind it. This is particularly true of modern digital technologies. Under its influence we undergo rapid transformations. In other words, the passing.

The correspondence between virtual reality and real reality for individual generations is undoubtedly established in a completely different dimension. Young people are able to very freely associate virtuality with reality. Others, the more conservative (in their understanding actually “stable”), less ready for the interfusion of virtuality with actual reality, will talk about **the error of the passing** manifested by the mixing of the two forms of reality mentioned here. They will see it as an error arising as part of a compromise to allow the stability and sustainability of architecture to be compromised.

Too common attachment to the traditional form of architecture and urban order, ignoring inevitable changes, becomes a problematic compromise of our time. Reinventing is a salvation, an opportunity to restore architecture to its modern requirements. It is a form of "tuning".

Inside **the error of the passing** is also the fall of authority. In view of the level of the current mean of the average education, the (not always justified) self-esteem of individual individuals increases. In general, real knowledge makes us aware of the vastness of the area of ignorance that each of us faces. The day of social messaging (especially online) drowns out the natural sense of distance to self-worth in favor of the desire to entrust in the strength of a celebrity attitude. Therefore, for example, educated architects who urge reason are listened to with reluctance. It is easier to set the ear on the call to follow fashionable, easy, but little responsible procedures.

The phenomenon of pauperization of projects, as well as the level of criticism of them, can be approached differently. It is important that the burden shifts from substantive knowledge to knowledge that builds individual, autonomous feelings. People verbalizing these individual (very personal) feelings because of their being used to the existence of universal values want to see their feelings as universally applicable.

Compromise – the error of the loss of the system of values

The basic **universal system of values** is subject to compromise. The existing system of Christian ethical foundations of our Western European culture, built on the foundation of the Mediterranean culture, is losing its importance. From the point of view of the narrative of the ideology of the modern and post-modern world, it almost does not exist anymore. If it still lives, it is only in human hearts. I would be inclined to consider any claim that there is a new, modern, post-modern and universal value system only as someone's individual idea of it. Joseph Campbell, on the pages of "The Power of Myth", says: "Greek, Latin and Biblical literature was once a part of the average education. When they were removed from it, the entire Western tradition of mythological information was lost. In the past, it was usually the case that these stories were in people's minds. When you carry one story or another in your mind, you see its relationship to what happens to you in life. It gives you a certain perspective in which you put what happens to you. With the loss of such a story, we have lost something significant because we do not have any comparable literature in its place. These passages of information from ancient times, related to things that helped people live, built civilizations, and shaped religions throughout millennia, also have a close connection with deep internal problems, spiritual mysteries and the thresholds we must push and if you don't have any signposts on this path, you have to work them out for yourself"[1].

[1] *Potęga mitu. Rozmowy Billa Moyersa z Josephem Campbellem*, ed. B.S. Flowers, transl. I. Kania, Znak, Krakow 2013.

In addition to J. Campbell's thesis above, it is appropriate to cite the opinion expressed by André Malraux in his reflections on the Museum of imagination: "The fundamental order imposed on the world by Christianity (and especially by Catholicism, because Protestantism did not erect cathedrals or the Vatican) has disappeared. The order of the great monarchies lost its rationale, which the mind brought out of the spiritual order, and lost its untouchable character. The reason lost when trying to build its own order (…). Unable to build its cathedrals and even its palaces, reluctant to repeat what its predecessors had built, the new civilization is also incapable of inspiring the great expression of the world, the great expression of man"[2].

In the modern world, the view on reality is changing with the system of values. The understanding of art is also changing.

André Malraux claims that the language of the sculptures created by Fidias had the same specificity as the language of the creators of ancient buildings, or masters of Romanism or Gothic. The language of the forms created was intertwined with the process of mastering the technique, including the technique of using the illusion to push the creators towards discoveries so that they could create the unreal[3]. They did so in fact because, before modernity, in their eyes the unreal was really present. Malraux claimed that Michelangelo could not erase his sins with the characters he created because, even within Buonarotti's understanding, they were only reminiscences of creation, reminiscences of God[4]. Here was the limit of man's creative power. God kept his rights. On the one hand, he somewhat limited the role of man, on the other hand he gave man a special dimension of freedom by leaving him an area of unreal space. It is a sphere of materially non-existent beings (subject to experience and imagining of them) but actually permanently existing and taking a real part in human life. How important this area is for those of us who see the real being of what is intangible, but it clearly is. What to say about love?

Until the end of modernity, man did not usurp the right to create as a building of substance and the meaning of his being. He did not enter into the role of God. he did not create a system of values.

André Malraux discovers for us the concept of the "museum of imagination". He writes: "The Romanesque crucifix was not a sculpture at first, Cimabue's Madonna was not primarily a painting, even Athena Fidias was not a statue from the beginning." In this way, he lets us know that in the works of the creators gathered in museums we do not see them ourselves but something completely different. He then elaborates on the statement, giving his thought a deeper meaning: "If the bust of Caesar, the equestrian portrait of Charles V, is still Caesar and Charles V, then Prince Olivares is only

[2] A. Malraux, *Muzeum wyobraźni*, Warsaw 1978 (Studia estetyczne, 15), p. 359.

[3] Tamże, s. 353.

[4] A. Malraux, *Ponadczasowe*, Krajowa Agencja Wydawnicza, Warszawa 1985, s. 10.

Velázquez. What do we care about identifying the *Man in a helmet* or the *Man with a glove*? They are called Rembrandt and Titian. A portrait ceases to be primarily someone's portrait. (…) The Museum does not know the holiness of either the saint, or Christ, or the object of worship, likeness, imagination, ornaments or property, there are only images of things, different from the things themselves and deriving from this specific difference the reasons of their own existence. The museum is a confrontation of metamorphoses"[5]. André Malraux presents the effect of a variety of realities. Individualism sanctioned by post-modernity puts the individual in such a high position that we no longer see the culturally written world of values but we see the value perceived by the individual and the overarching role of the individual.

The author of the term "**museum of imagination**" referred to the concept he created for the perception of art. Today I would be inclined to transfer the character of the **museum of imagination** to the whole picture of our reality. This peculiar form of individualism also radiates to the image of architecture. On this basis, I would like to prove that authors (including architects) today mainly use **creative imagination boost**. The place of developed principles, reflexes, methods and systems of values is occupied by an individually built idea that consists of the sum of events, phenomena – artifacts (artifacts understood here by me as a product of human imagination). These are images of their kind resulting from sensations and experiences, constantly and almost subconsciously collected by man. The process of this accumulation takes place from the moment of birth to the present day. We design using these images, these resources. They give content to our works. I think that from the very habit of having a permanent value system, which until recently and eternally was assigned to us, today we are still reflexively looking for it. The **creative imagination boost** fills this gap.

"I grabbed it by going into my aunt's garden. Even today this handle appears to me as a special sign of entering the world of various moods and smells"[6]. Zumthor associates his power of **imagination** with education, work, but also with his childhood experiences: the experience of the garden, the shape of the garden door handle remembered by his hand, the ordinariness of the rooms he was passing through at the time, and which later – through the memory of their ordinariness – acquire some special meaning. They are witnesses of the establishment of our human existence, of being. The testimony of the special importance of these paintings constitutes their re-experience by the mature architect[7]. It is a kind of *re-inventing*. Zumthor adds: "Such memories contain the most deeply embedded architectural experiences I know. They are the backbone of architectural moods and paintings that I try to explore as an architect"[8].

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[5] A. Malraux, *Muzeum wyobraźni*, dz. cyt., s. 345.

[6] P. Zumthor, *Myślenie architekturą*, transl. A. Kożuch, Karakter, Krakow 2010, p. 7.

[7] *Ibid*., p. 7

[8] *Ibid*., p. 8.

It must therefore be considered that the universal system of values is displaced by the sum of individual **imagination boosts**. Therefore, like never before, we are exposed to the creation of our own architecture, the architecture of our own feelings.

The principle of abandoning the universal values, which I describe, has multifaceted and often very practical effects.

I am referring here to the law governing public procurement rules. The legal norm mentioned here, and especially our native way of interpreting it, is a form of a bizarre compromise concluded between man as a designer, investor, contractor, and the essence of the design in space and the law itself. As part of this, not entirely healthy, compromise proposed by this law, the designer has been denied the right to freely form creative teams (I am thinking of executive teams) and the freedom to choose materials and technologies to be used in architectural designs. This law overturns all the rules for creating good architecture, denying architects the right to make binding design decisions. As a result of this particular compromise, architecture is becoming an industry (such as sanitary and electrical ones) operating inside a project event. The role of the architect is taken over by an enigmatic **investment process** led by a group of its decision-makers, and a significant impact on the entire investment remains mainly on the side of the inspector general of the contractor. And this person, even if most competent, is not ready to create architecture.

It is worrying that, within the meaning of this law, a person is treated in advance as a potential criminal. It should be noted that the law does not outline the consequences of possible offenses, but presupposes that they will occur and creates a system of theoretical prevention of such offences. A similar principle of treating people guided the Soviet totalitarianism as one of the many forms of oppression of the time. That is why we are particularly sensitive to this phenomenon in Eastern Europe. Unfortunately, the presumption of intent of honesty, in view of the wording of the law described here, ceases to apply.

In our country, this law grew on the basis of post-Soviet reality. As a result, we are also victims of what the well-known philosopher and priest Joseph Tischner called the *homo sovieticus* syndrome. The syndrome consists not only in a low level of self-appraisal but also in the imperative of relying on someone stronger as more competent to make decisions. The man in the Soviet system had no right to make binding decisions. The Soviet syndrome cuts the man off from the right to enjoy the benefits of any system, now or in the future, because it commands to see himself as someone worse off because of the backwardness caused by the Soviet past. As a consequence, the *homo sovieticus* syndrome is characterized by the feeling that we do not have the right to create our environment and rules of action, but we have to accept them from the outside. Moreover, these external principles must be adopted in an even more ruthless and demanding form than that in which others, those who have not been through the trauma of Sovietism, accept them. Perhaps that is why the Public Procurement Law is even stricter than in the West. Moreover, our society, which is highly specialized

in circumventing such “difficult” legal provisions, is more focused on improving this specialization than on improving the law itself.

It should be added that the perverting of the Public Procurement Law described by me concerns not only post-communist countries, which is a particularly nagging conclusion. This law operates in a similar way in the rest of Europe. The architecture resulting from it loses detail and thus the scale of its user-friendliness. It is becoming more and more dehumanized.

Among other things, based on the aforementioned principle of treating man as incapable of functioning honestly in the society, and hence the crisis of mutual trust, I am observing the collapse of the system of values. Of course, this is not the only symptom of the departure of values. First of all, it is necessary to recall the dominant nature of individualism, as mentioned above.

Compromise – the paradox of disagreement with one's own beliefs

In addition to the **error of the passing** and the **collapse of the system of values**, in a sense we remain deaf to what we think of architecture. The third plane of this compromise is therefore a fairly common **paradox of disagreement with one's own beliefs**. To a large extent, we ourselves give up the ideas we create or, simply, tastes and preferences. I think of new currents, architectural ideas that we see, sometimes we verbally support them, but we often abstain from implementing them in the face of the reality that becomes stronger than us. This reality demands compromise.

Architects are not exempt from the obligation to include a message in their proposed works. I stress the essence of the message contained in architecture because I am afraid that design art carries a certain margin for abandonment in this field under the pretext of solving the so-called problem. In the field of architecture, this would be a functional-spatial solution. In addition to any other narrative, the message of architecture should still be a story about the designer's current attitude to people, place and space. This can certainly be achieved by providing only obvious and repeatedly verified categories of responses. But this is a very specific situation. It would be just as unique as the intention to limit literature solely to reportage, and music to the sounds coming to us from behind the window. Of course, a completely different situation is the one in which the author himself consciously declares to withdraw from his ambitions to remain a step behind the craft and from this position to control the project. Any consciously accepted attitude towards the obligation to communicate (to take the risk of conscious expression, communication in the project) is the responsibility of the designer

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To point out the difficulties facing the architectural message I will quote Peter Zumthor's significant statement: "Time and time again I come across buildings that are shaped by large investments and the will to give them a unique form, and I feel irritated. The architect who committed this thing is absent but he speaks to me constantly through every detail of the building and constantly tells me one and the same thing, which I soon lose interest in. Good architecture must accept man, allow him to live and dwell, not to tell him something"[9]. In the midst of these considerations, I consciously seek to find judgment that makes it difficult to understand too simply a creation (message) in space. As designers, we must be able to maintain moderation also in what is lacking. I continue to argue that in architecture there is no reliable message to be distinguished from chatter. Here we should give a hand to the quoted architect. On the other hand, it should be noted that the author of this statement has a real ability to speak with architecture, despite the formal self-limitation. He, too, despite his obvious absence, fortunately, is quite clearly heard in his statements.

P. Zumthor also cites another sentence that points to the poetic context of architectural narrative. It seems particularly significant to me. It comes from a discussion of poetry in which the Italian essayist Italo Calvino firmly states: "Only a poet of precision can be a poet of indeterminateness!"[10]. This is a very specific statement that I would recommend to designers as a priority. For an architect who sees, moreover rightly, the metaphorical, therefore poetic, language of architecture, it can be a signpost.

There is something about architecture to understand poetically because the language of the poetic metaphor is appropriate to describe the meanings that define the sense of reality. An architectural utterance usually touches on areas that are principled for our participation in the world. It is difficult to speak literal language about them, so as not to fall into the shallowness that P. Zumthor warns against.

For the aforementioned reason, architecture, like poetry, uses rhythm, as well as the very demanding logic of the language used in it. Today it is a little more difficult to define in the both fields: both poetry and architecture. Poetry, like architecture, has its own design and structure: a certain order of syllables, the number of verses, rhymes and their kind. Especially the sonnet may to be architectural. The question is: does this kind of poetry and architecture have the right today to exist in the face of the crisis of the values, which I have mentioned?

Just as poetry sneaks off from the area commonly discussed (almost every high school student wrote poems once), so too architecture loses its place in space. The question remains about our longing for poetry and architecture at the level of a clear message, which is a poignant expression of the "poet of precision".

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[9] *Ibid*., p. 33.

[10] *Ibid*., p. 30.

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BEATA GIBAŁA-KAPECKA

SPATIAL SOUND – THE FEELING OF BEING IMMERSED IN SOUND

SOURCE:

B. Gibała-Kapecka, T. Kamisiński, T. Kapecki: "O dźwięku, akustyce i hałasie w przestrzeni miasta", Krakow, 2019

ABSTRACT

What we perceive is not reality but just reactions of our brains. There is one reality but its representation in different brains is different. The more different the brains are, the more different the representations.
[John Locke]

(...) real is simply electrical impulses interpreted by your brain[1].
[Morfeusz do Noego, *Matrix*]

In the world of the Anthropocene[2], the world ruthlessly altered by man, in which the processes that take place often get out of hand, our vision of the world is incomplete and unpredictable but if we indulge our unfettered imagination, then at least we have the opportunity to broaden our and others' horizons – the field of vision.

KEYWORDS

architecture; sound; cymatics; anthropology of sound; interior architecture; ecological acoustics; acoustics; urban space; auditory architecture; aural architecture; auditory interior architecture; tranquility rating

[1] https://www.tvp.info/41375915/w-mozgu-odkryto-nowy-rodzaj-komunikacji-miedzy-neuronami [accessed on 12/06/2019].

[2] Dipesh Chakrabarty was one of the first humanities researchers who discussed the term "Anthropocene" in his article titled *The climate of history: four theses*. The term was proposed by Paul J. Crutsen and Eugene F. Stoermer (2000) to name a new geological era in which mankind is the main geological factor. Chakrabarty asks: "how the way we think about human history should change at a time of rapid and irreversible climate change". He analyses the assumptions of classical historiography and the latest work on global warming and concludes that "in the face of negative climate change it is necessary to complement the global history of capitalism with the specific history of humanity" (http://tekstydrugie.pl/auth/dipesh-chakrabarty/ (accessed on 28/06/2019.

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Akademia Sztuk Pięknych im. Jana Matejki w Krakowie

Spatial sound – the feeling of being immersed in sound

SOURCE:

B. Gibała-Kapecka, T. Kamisiński, T. Kapecki, *O dźwięku, akustyce i hałasie w przestrzeni miasta,* Krakow 2019.

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Spatial sound. Overtone of shapes of forms – sound futurology

The “sensation of being immersed in sound” implies equivalence of occurrence for both the visual and auditory dimensions in the way we experience, feel, and then enter philosophically into, the process of conceptualizing urban space, including architectural, shaping the environment for human life. The aim is to create a reasonably unambiguous tool in a more precise language dimension for use in research, artistic experiments, design processes, discussions. Taking the view that spatial sound also consists of the overtone of form shapes, it can be argued that each shape of a form generates sound – **treating this sound as a means of artistic expression, a tool of creative statement, according to Oscar Fischinger’s idea that “every material form, each shape, has its own being and its assigned sound equivalent”**.

Tokyo, Plaza Omotesando Haerajuku, Hiroshi Nakamura (photograph by B. Gibała-Kapecka).

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Cymatics. The shape of the form generates sound

„Everything is sound, a certain vibration that gives shape to all forms”[3] – – the influence of sound on matter, including its ability to shape substances in the taking of symmetrical, geometric and organic patterns or systems, are experiments derived from the work of the eighteenth-century German physicist **Ernst Chladini**. He described the phenomenon of physically tangible elements forming into geometric patterns under the influence of sound vibrations, proving that “the same sound tone always creates the same shape created by so-called standing waves”. In the 1960s, **Dr. Hans Jenny**, who developed his method to create a new science, the so-called cymatics, was part of Ernst Chladini’s research. He recorded on film the effect of sound on powders, liquids and other various substances. He noted that sound vibrations produced a variety of structured patterns with geometric shapes. Low frequencies formed simple circles described by rings and higher frequencies increased the number of rings placed concentrically around one circle and formed patterns with sophisticated shapes comparable to fractals because **complexity of these shapes, or rather precise systems**, grew with the increase in the frequency of waves. The acoustic effects of sound wave phenomena, which Jenny called “cymatic effects”, are geometric patterns generated by sounds, showing the impact of these sound waves on many different types of materials, including liquids and powders. All the effects observed by Jenny during these experiences were documented and released in the form of a monumental work titled *Cymatics. A Study of Wave Phenomena and Vibration*[4]. The [Natural] substances and plastics used by Jenny for experimental purposes take on incredibly organic shapes that bring to mind the underwater world, or human cells, snowflakes, structures of microscopic matter. They are a proof of the extraordinary power of sound to create forms – “visible shapes of the content” (Ben Shahn). The effect of sound or sound waves of different lengths, amplitudes, different frequencies on a particular matter results in the fact that the matter is called to existence, adopting patterns of various, even magical (because so polysemic). shapes. You can find here a reference to **sacred geometry**[5].

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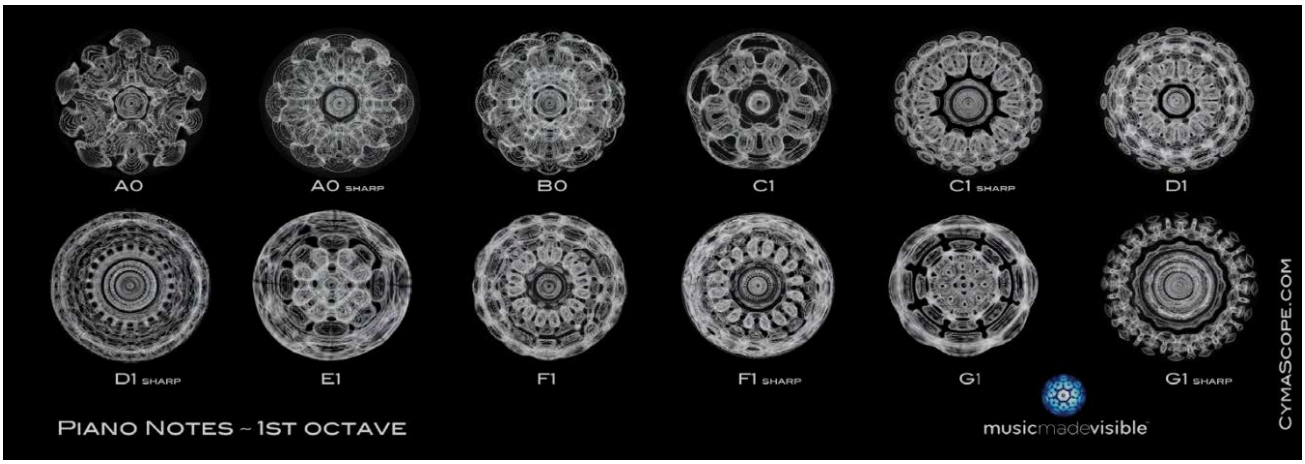
[3] http://www.nutao.pl/2017/09/24/cymatyka-cos-wiecej-niz-tylko-muzyka/ [dostęp: 23.04.2019].

[4] H. Jenny, *Cymatics. A Study of Wave Phenomena and Vibration*, vol. 1: *The Structure and Dynamics of Waves and Vibrations*, 1967; vol. 2: Wave Phenomena, Vibrational Effects and Harmonic Oscillations with their Structure, Kinetics and Dynamics, 1974, https://issuu.com/derekwillstar/docs/146864544-hans-jenny-cymatics [dostęp: 12.05.2019].

[5] *Chladini’s figures,* http://www.nutao.pl/2017/09/24/cymatyka-cos-wiecej-niz-tylko-muzyka (accessed on 7/05/2019).

To this day, various experiments are conducted using devices such as CymaSkope, which **materialize sound in various geometric forms** while recording changes in geometry of their shapes depending on the sound type.



Cymatics Research – Musicology, http://cymascope.com/cyma_research/musicology.html (accessed on 10/04/2019)

Intriguing and promising experiments related to the geometry of shapes were conducted by Masaru Emoto who proved that when a given matter, in this case water, is subjected to the influence of various sounds, whether musical or prayerful, depending on what they are, crystallized matter (water) takes on such shapes. Thus, giving a form to each note, **sound was turned into a shape**[6]. According to the study of the researcher who hypothesized that "human emotions have a huge impact on water", all kinds of human activity, such as music, prayer, words or thoughts, but also environmental conditions, affect the shape of water crystals in an unlikely, immeasurable way. **Masaru Emoto's breakthrough achievement was to demonstrate through visualizations that the organizations of sound structures of interest to us, consisting of sets of acoustic waves with deliberately selected parameters, taking place over time, without excluding silence**, are accumulated by water as information data – the so-called "water memory". Water samples used in the experiments are crystallized and then, by greatly magnifying the image under a microscope, can be photographed and exposed. Emoto's research papers document illustrations of this type of "information crystals", which prove that they possess characteristics such as memory, as a result of

[6] http://www.nutao.pl/2017/07/31/masaru-emoto-i-jego-eksperymenty-z-woda (accessed on 17/05/2019)

which they can be duplicated while retaining the same form. This also applies to the diversity of crystal forms. Experiments visualizing water memory through recorded "retained" images resulting from contact with musical works evoke harmony or disorganization of the structure recording. Since the human body is made up of about 70% water, an analogy can be assumed as to the fundamental importance of the sound compositions listened to and created, if it is true that every sound, directly affecting the water in our body, affects cells and the whole body. Masaru Emoto subjected a sample of distilled water to an hour-long impact of music and then photographed its structure frozen in time.

Szarotka | *Aria na strunie G* | *Sutra* | *Folk dance* | *Heavy*
Dźwięki muzyki | *J. S. Bach* | *tybetańska* | | *Metal*

Nu Tao – harmony of sounds: http://www.nutao.pl/2017/09/24/cymatyka-cos-wiecej-niz-tylko-muzyka (accessed on 17/05/2019)

In many works over the centuries, including in our modern times, we find terms for sound, or its frequency, like "word" or "thought". Over time, it can be seen that they began to manifest themselves in an energetic and finally material form. If we assume that with words, and perhaps even thoughts, we have the ability to influence the structure of water, this observation can be applied to our body and the environment, which of course stimulates the imagination of scientists towards the opening possibilities of influencing the ecosystem, the entire biosphere…

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Anthropology of sound. The sound of objects – interior architecture. The status of the paradigm

When we allow the possibility of multiplicity of interpretations, including definitions, and put it side by side with a possibility that **sound can be perceived and felt by visual and emotional perception**, it is necessary to take into account the widest possible range of references to different fields of science and art, their disciplines and specialties, based on which valuable differentiation and, at the same time, common relationships can be revealed. Increasingly often we are looking to discover the necessary dependencies for the design process to be pandemic. The approximations to the concept of sound taken in different specialties clearly highlight the industry's differences, not to mention the differences resulting from culturally sanctioned circumstances. Therefore, **interdisciplinary cooperation between different industries, which are conditioned by a creative design process**, is indispensable. In this way we build planes and spaces of agreement in which further scientific and artistic concepts arise and are established. **Based on them and in relation to them an idea was taken to try to visualize sound generated by the shape (form) of an object and, further, a number of objects**. The form obtains coordinates on the basis of different assignments. The form also depends, each time, to varying degrees, on technical or technological conditions. This is also the case when the [conditions] are the starting point to the idea of an object. The shape is dictated by functional, aesthetic, philosophical and social factors; of course, to varying extent. In parallel, these factors are analyzed against the background of the chosen history of terms, in relation to sources of the type of experience, or are based on different cognitive motives and creative ambitions.

Cultural anthropology has developed a specialization dealing with human relations with the same acoustic environment in a way that is important for architecture, interior architecture and its elements of equipment, and has accepted that sounds and noises, the so-called "audiosphere", are the characteristics of a given space, place and integral objects. The human hearing is a multidimensional sense. An equally multidimensional phenomenon is the acoustics of interior architecture. An extremely complex issue which depends on many component factors and their parameters, ranging from the architectural structure of the interior, its volume, through the type of finishing materials, to the elements of equipment. In addition, sound insulation of building materials plays an important role, which is not always decided by us. This refers to two types of sounds: airborne and conducted. Groups of measurable acoustic parameters have therefore been identified in order to assess the

acoustics of interiors. These parameters can generally be divided into “objective” (patterned, very relevant, often crucial) and “subjective” (as the name suggests, related to the subjective assessment of the acoustic characteristics of the premises), which amounts to giving appropriate determinations to individual parameters in order to check the effectiveness of the design solutions adopted.

The comfort of our lives, the operation of architectural objects, their interior spaces – but equally also external spaces of public interest – and, finally, our well-being and health also strongly depend on acoustics. Its sub-fields include audio acoustics, which in turn is divided into interior acoustics, as well as architectural and construction acoustics, urban acoustics and environmental acoustics. Interior acoustics strongly focuses on the value of sound frequency, which describes the range of human audibility, that is, the frequency and volume, and consequently determines how sound behaves in the room. From the point of view of an interior architect, a co-designer of everyday reality, focusing only on the “sound absorption class” or “longitudinal sound insulation” is insufficient[7] Unwanted sounds heard, whether in the office, at home or at school, irritate, torment, destroy mental comfort, result in physical and mental fatigue. In order to ensure friendly acoustics and increase the comfort of life it is not enough to use only suitable finishing materials – a comprehensive approach to the design of the architectural structure of the interior is necessary. For example, the over-damping of an interior will cause it to be subdued because the so-called “acoustic background” is eliminated, resulting in a doubling of power of natural sounds, such as sounds of objects falling to the floor, the “falling pen effect” or the noise from the sliding of chairs. Movement, penetration, absorption, sound reflections are the most important acoustic aspects in the surrounding environment, both urbanized and natural.

Going further, the public space of the urban landscape – furnished with formally distinguished elements dictated by specific spoken, social and cultural needs for various functions – **creates an acoustic environment and, at the same time, sound phenomen**a that **transfer** and translocate socio-cultural influences, including stories, as well as aesthetics, of various cultures of urban communities – both local and, as in the case of Krakow, coming from conventional tourism.

An “acoustic phenomenon” that visualizes sound is a **sound written in a shape, a sound that is spaced, because it is not so much closed within the shape of an object as defined and identified by the form of the broadly understood object**, therefore perceived in the sense of being “received,

[7] http://www.sztuka-wnetrza.pl/5283/artykul/akustyka-wnetrz-na-co-zwrocic-uwage [accessed on 28/12/2018].

because seen and felt", that is, **heard**. Perceived by the senses, such as sight and touch, it is an experience of a kind of tactile from the empirical group, induced or dependent on the states of our consciousness (**neural states**). This, however, is different, as shown by recent achievements in neuroscience by Prof. Dominique Durand. "For the mind, as well as for any learning system, information is not an abstract measure of signal complexity but a measure of the impact of that signal on the state of the entire system. The undoubted breakthrough therefore requires further research into its nature and further search for answers to the question of the role of this newly discovered method of communication for the functioning of our brain. And thus the functioning of us as thinking beings"[8].

In our sensory process, form is therefore the basis, the essential. It is important what reactions it will trigger, such as "perception, recall, association string, verbal comment" or other action. The shape acts on the senses such as the visual, auditory, tactile and other pathways. Structures and forms grow, duplicate, expand and results reach the associative cortex and carry information, becoming images (**percepts**). These in turns evoke successive associations. "In fact, thought processes often shift, as cognitive scientists show, on the verbal/non-verbal axis, mixing abstract thinking based on symbols with imaginary thinking using motor and sensory cortex activation. This saves energy and makes it easier to infer at the symbolic level, generalize, which is difficult to achieve at the level of images (percepts)"[9].

Available research results[10] indicate that the presence of "desired" sounds, rather than the actual noise level, contributes to perception of the acoustic quality of an urban location as positive or acceptable. It can therefore be assumed that, as a result of the accumulation of percepts (images) with formal and programmed (functional) characteristics defined for urban landscapes, the **desired visual audio documentation is consolidated into a collective sound memory. Sound is a sound wave, and isn't the shape of an object the source of the sound? Is the surface, line, point, solid, or object not the source of the resulting sound energy** ("sound spectrum") **as a result of its**

[8] https://www.tvp.info/41375915/w-mozgu-odkryto-nowy-rodzaj-komunikacji-miedzy-neuronami [accessed on 08/03/2019].

[9] D. Dennett called it "contrasting heterofenomenology", that is the study of situations in which we can determine what is conscious and what is unconscious (https://fizyka.umk.pl/~duch/Wyklady/Kog1/B11-swiadomosc.htm (accessed on 12/01/2019).

[10] https://www.researchcatalogue.net/view/251049/251050 [dostęp: 1.06.2019].

shape[11]? Since the sound wave, **the acoustic wave, is a mechanical wave which spreads through the vibration of successive molecules**, it integrates two variations – over time and in space – resulting in cyclical compaction and thinning of the air ("areas with higher values of disturbance have a dark tint and areas with a smaller value are light"), and these density fluctuations move at the speed of sound in some direction, they certainly "fall" into an object which reflects its shape in the **compacted matter of air** – leaves the reflection of the shape on its own pattern – as a result of which the "spectrum of sound" becomes a reflection of the object, giving the **impression of sound: an image** of the resulting **(individual) sound** inherently associated with the object.

Ecological acoustics. The interdisciplinary alignment of science and art

In the deliberations made above it is important to introduce terms already commonly used in the literature on the subject, for example with regard to the "acoustics of the immediate environment" ("environmental acoustic") or "ecological acoustic", when a person is not in the environment constantly, although sometimes used equivalently to the term "acoustic landscape", abbreviated "soundscape" or "sound acoustic landscape". The author of the concept is Simon Fraser who already in the 1970s described e**cological acoustics as "an interdisciplinary mixture of philosophy, sociology and art"**. He attributed his fundamental contribution to the creation to musician R. Murray Schafer with whom he carried out a joint project in the late 1960s and early 1970s and who, in his "World Soundscape Project", developed the concept, emphasizing the importance of all sounds coming from the environment, that is, **the acoustic landscape**, because they provide not only physical information, but "a whole wealth of aesthetic impressions"[12].

[11] http://www.fizykon.org/drgania_fale/fale_co_to_jest_fala.htm [dostęp: 16.06.2019].

[12] http://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-0c260409-9688-4d15-9546-9380c14c5076/c/Lipowczan.pdf [accessed on 04/05/2019].

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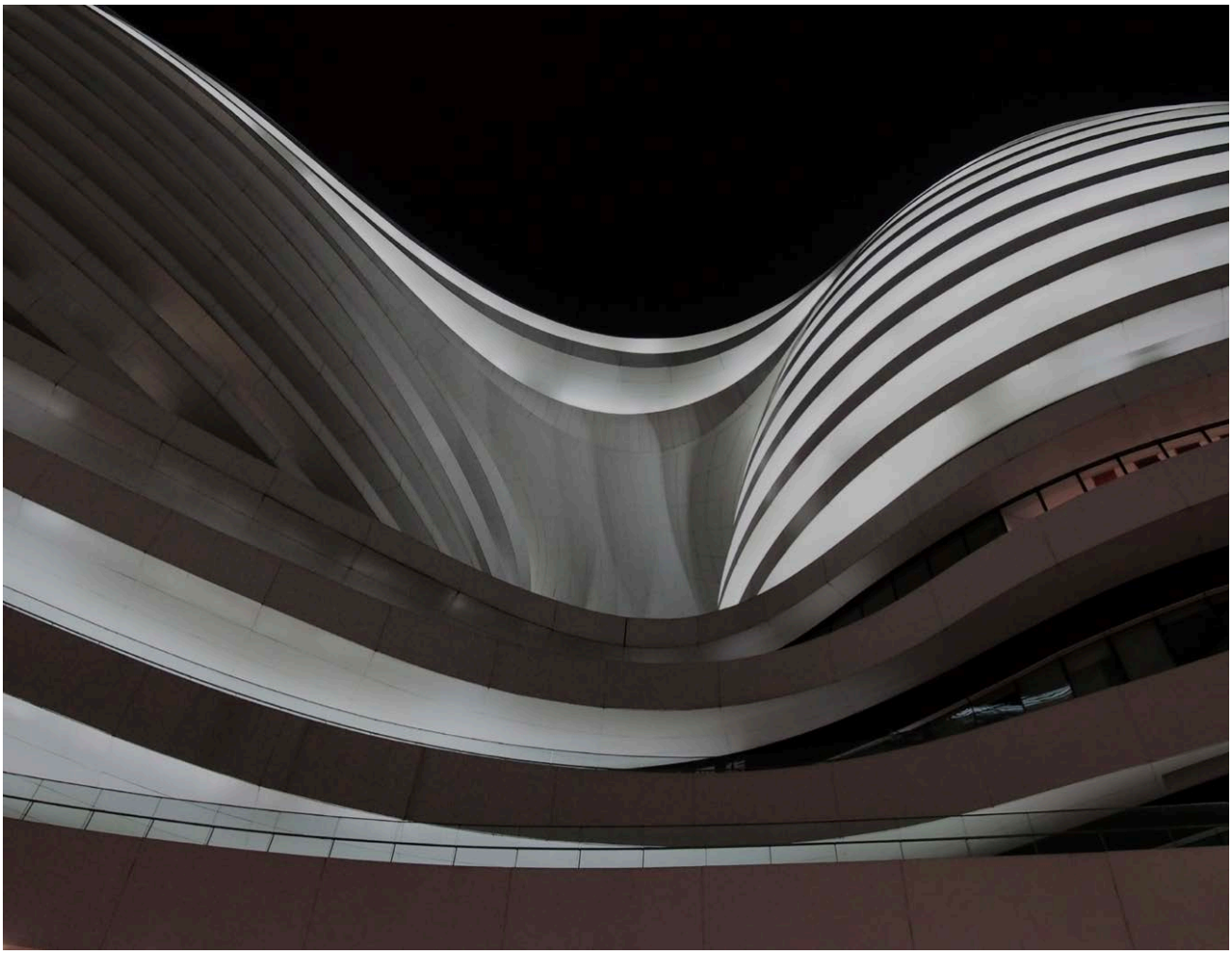
Materiality of sound. Modus. Physical object. Metaphysical object

The common judgment that sound as an object is closely connected to the source of the sound, that is, to **the sounding object**, seems indisputable. However, from the position of an artist engaged in creative shaping of human environment, inspiring reflection in aesthetic or philosophical dimensions, a designer engaged in shaping space and places, the closest environment of man, including architecture and its interiors, today **this combination proves to be fundamentally problematic**. This issue also touches on a broader context, is present in the design of landscape architecture and in urban planning. While all objects that exhibit mechanical or electrical motion also allow this movement of their own matter to be heard acoustically, the assumption is that the equivalent **material sound** is created generated by the **form of objects, the type of color, its texture depends on the preserved proportions of shapes and surfaces. It materializes** with the **mental process of visualizing images as a result of intensification of feelings and sensations, as a result of the philosophical and cultural context, depending on the neighborhood of other elements and objects present in it, on their compositional system, that is, all the complexity of forms, geometries and shapes, taking into account** the light sources that extract, conquer and modulate forms, activating, amplifying **the overtone of material sound (George Berkeley's psychology of perception)**[13].

Such **references** can be found in the ideas of architectural projects of the 21st century the interior and exterior spaces of which were designed **taking into account the emission of their own** materialized sound (creation of formal solutions), as a result of which they are also perceived acoustically. Examples include the Sky Soho in Shanghai by Zaha Hadid Architects and the WU Campus in Vienna with Zaha Hadid Library. Architectural structures formally expanded, with the

[13] According to Locke, we create so-called "simple ideas" based on stimuli emitted by material things, our senses record the ideas of these material things. Berkeley claimed that we have only two things: the stimuli themselves and the ideas generated from them. He questioned the existence of material objects because of the lack of direct access to them, as we do not know whether they actually exist or are just our ideas. He created the concept of "being observed". He claimed that something exists for us then, and only when we can observe it, that is, when we have in our memory the idea of an object, things like a table, but this idea does not have to correspond to the actual table because we are as well be to create ideas of non-existent things that we have never seen before. Berkeley urges us to recognize that there is no such thing as an objective being and that there is "momentarily" only what we are seeing at the moment, so it can be concluded that we are given directly only the content of our own minds (https://pl.wikipedia.org/wiki/George_Berkeley_(filozof) (accessed on 01/06/2019].

game of solids in the light, make the resulting "**sound projection**" while indicating the possibilities of managing **material sound (mental process)**. In power is the theory of shaping **auditory architecture, more broadly: the environment of the auditory landscape, as well as functional sounds. The phenomenon is particularly true in public spaces where comfortable work must be made possible both on the scale of everyday behavior and in architectural and urban space. The sonic effect cannot be an action of some cause but should include "the context surrounding the object and its appearance"**.



Shanghai, Sky Soho by Zaha Hadid Architects (photograph by B. Gibała-Kapecka, T. Kapecki).

Jean-François Augoyard and Henry Torque, designers of modern cities, distinguish between the **"sound effect" and the "sound object"** (*object sonore*) but the creation of acousmatic situations[14], when the emphasis is on the perception of sound matter as a separate being separated from its physical causes, consider it possible to think of an art installation or soundscape because it seems too wide and indistinct when the "sound object" is read as an elementary form. By definition, an object means: something can be seen or touched; an abstract, feature, or concept that concerns someone's actions, interests, or feelings; or a building or a complex of buildings, including field equipment"[15] – **so the "object" can therefore be considered as something that exists in the real world or in the world of ideas**. It can be said that sound, as it is elusive in the sense of a solid, belongs to the world of ideas. Increasingly often we come to the belief that "only the place of listening remains real" while sound becomes a "state of one's own perception", and **the object becomes metaphysical**, filled, marked with symbolic references and **creates meaningful contexts in space**.

The results of long-standing research by Dr. Iégor Reznikoff, a lecturer at the University of Paris, have brought the mystery of the creation of such metaphysical objects as the prehistoric paintings in the cave of Le Portel (Paleolithic gallery located near Ariège) closer to explanation[16]. Iégor Reznikoff, a specialist in early Christian singing and in acoustic archaeology, a connoisseur of ancient music, experienced while traversing the grotto a particular type of resonance in places where prehistoric paintings were located. He noticed a clear link between the placement of paintings and the quality of resonance. Then there was a suspicion that the Paleolithic image was combined with sound. **Acoustic impressions accumulated with optical ones**, creating a place marked by spirituality. The researcher showed that, for example, in the Niaux cave in Arisge, the most exquisite paintings were made in a place whose acoustic properties are similar to those of the Romanesque chapel. Thus, he assumed that there may be a link between the painting and its representation and the type of musical work or song performed in its vicinity. In his opinion, rituals were performed in the grottoes with paintings – sounds appear as "events", "turn on the context surrounding the object and

[14] Acousmatics refers directly to Edmund Hussel's phenomenological reduction theory which consists of several stages and consists in turning off the knowledge you have in order to replace it with a source of knowledge derived directly from objects, which in turn we can experience directly, and they create absolute reality. The next stage of the reduction is to get rid of all judgments about the object being learned about, which will limit our experiencing of a given phenomenon only to observation. The next stage is the eidetic reduction which reduces individual experiences to a common denominator and allows you to reach the essence of the object.

[15] https://sjp.pwn.pl/sjp/obiekt;2491478.html [accessed on 22/06/2019].

[16] https://nowosci.com.pl/jaskiniowe-rytualy/ar/11096582 [accessed on 06/05/2010].

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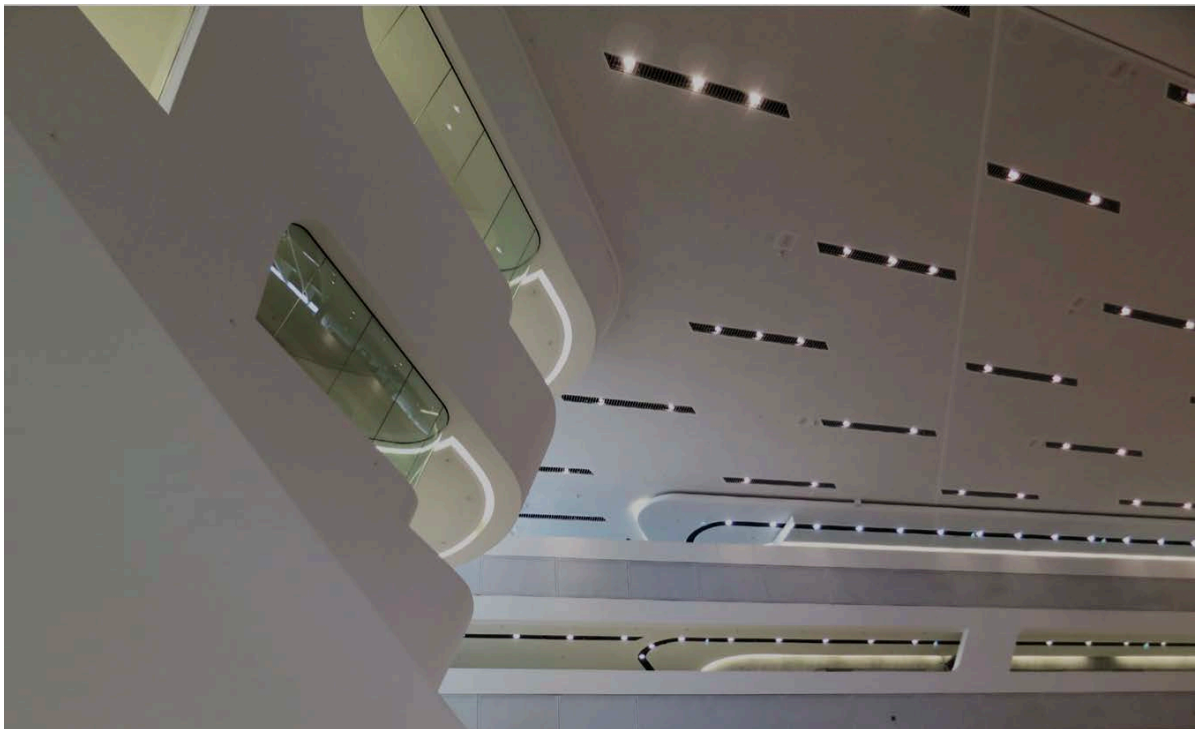

Wiedeń, Kampus WU, biblioteka, aut. Zaha Hadid (fot. Beata Gibała-Kapecka, T. Kapecki).

Shanghai, Zendai Himalayas Center ,Arata Isozaki (fot. Beata Gibała-Kapecka, T. Kapecki).

Tokyo, Cocoon Tower (fot. B. Gibała-Kapecka, T. Kapecki).

its appearance".

Theorists and philosophers centered around the *Cybernetic Culture Research Unit* (CCRU), a circle placed between science and art, have already questioned the approach to urban space design in the 1990s, which attaches too much importance to the phenomenology of sound perception, in which "human hearing is given priority". Steve Goodman calls for the sonic effects to be expanded to include an "ecology of vibrating affections", which does not leave room for the assumptions of some perception in terms of ideas about complex *modi*[17] but "gives the possibility of the occurrence of changes in the whole sensorium, including inhuman beings". As a result, sound would be primarily determined by its action. This action is not intended to be purely receptively-theoretical, it is intended to have an anthropological and social empowerment and to be technologically generated (networks of sensory events).

[17] http://sady.up.krakow.pl/antfil.locke.rozwazania.htm#locke2.12 [accessed on 23/05/2019].

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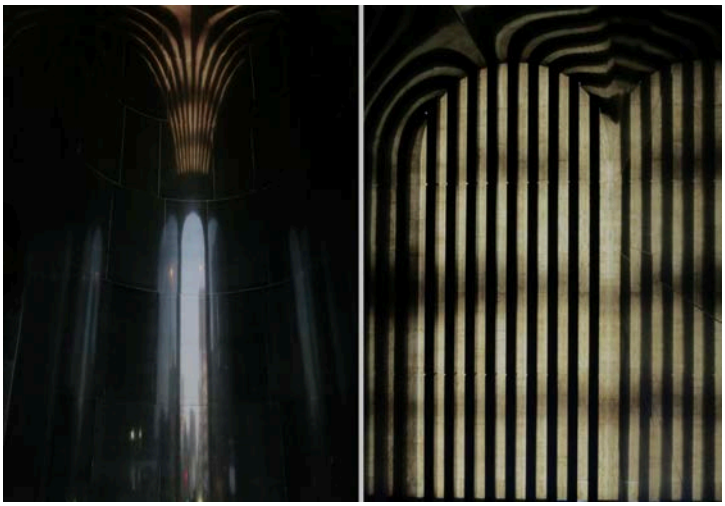
Sound recorded in the shape of a form
The form generates sound

„All the Things that Could Possibly be Audible”[18]. The Sound Art Festival [19] places the medium, which is sound, beyond its musical contexts, broadens the perspective of awareness of the relationship between sound and the environment, looking and listening, hearing and contextual perception, and finally “speaks from the perspective of the medium itself”. As part of the “space”, creators, asking questions about the directions of evolution of this field of art, explore the issues of relations and connections of sound works with place and architecture. The *Façade scan* installation “translates components of the urban structure into auditory signals. We watch the streets with a series of front facades like the surfaces of the city. They are “scanned” with a sound tool and the facades and their individual elements are treated as musical scores. A sound specified in the rhythm is generated. The individual elements of the façade become tones, intervals and rhythms. It can be said that, in a sense, each building triggers its own individual, and thus unique, experience of sound, because changes in the architectural tissue in its individual structures, such as cavities, become audible”[20].



Tokyo, NOA , Seiichi Shirai
(photograph by B. Gibała-Kapecka, T. Kapecki)

[18] http://festiwal.sanatoriumdzwieku.pl/pl/program/sanatory17/ [accessed on 12/03/2019].

[19] Curators: Klaus Filip, Noid, Ulla Rauter.

[20] http://festiwal.sanatoriumdzwieku.pl/pl/program/sanatory17 [accessed on 05/05/2019].

Krakow, Kosciuszko Mound, enclaves (photograph by B. Gibała-Kapecka, T. Kapecki)

Nowadays we are faced with a variety of sound perspectives. Theoretical and practical attempts are made not only to think about sound, but also (to think) by sound, to raise in parallel human awareness that not only "by" looking but also "by" listening, they shift the relationship between a particular hearing and a contextual or reflective perception, illustrate, taking the sound beyond its musical context, thereby pointing to possible directions of evolution in this field.

Fluids[21] is an installation by Akira Wakita that "generates a real-time computer image not seen in the daily experience of air movement", three-dimensional iconic models of miniature chairs, examples of the 20th-century design, are observed by software rendering the movement and color of air particles flowing around the edges of furniture. By combining art and science, the artist and the engineer **point to the existence of an invisible and present reality "around" objects**. The concept of visualizing the sound generated by the shapes and matter of objects introduced into the interior, **which is surrounded by man**, allows new media to show **the full phenomena of space** and, thus, to observe how the void category changes. This three-dimensioning of sound gives you an opportunity

[21] https://magazynszum.pl/dzwiek-plynacych-informacji/ [accessed on 06/03/2019].

to enhance your **"sense of surroundings" with sound**. Nowadays, art, in interdisciplinary cooperation with other sciences, contributes unrivalledly to **enriching the perception of the recipient – the participant of events**.

The works by Paweł Janicki offer such possibilities, especially the *Vibra* project which boils down to an object that allows in an unusual way to extend the feeling of the sound with the help of bone conduction. The author of the project attempted to create an audio work, which is an unconventional method, consisting of the receiving of vibrations with the body, can start the perception of sound in a recipient for various reasons unable to listen to sound in a common way. These are works (sound art), focusing **directly** on listening, but as a social activity, and individual, "internal" experience.

Tokyo, Ayoama Omotesando, Chloe, AH Architects, Sophie Hicks, Architecture (photograph by B. Gibała-Kapecka).

Material generates sound

Each space has its own acoustic capabilities designated, for example, by the framework of its surroundings, also this architectural one is essentially created by its structure.

In this sense, the space and interior, together with the entire architectural structure, including the composition of the equipment, have been a sound installation from the very beginning. Only in the next stage are they subjected by "institutions" (creators, the industry) to various, now specific, treatments for the purpose of perception of the place or designed interactions between the audience and space[22]. These specific treatments are a type of activity which seeks to materialize also the acoustic capabilities of the particular space and, to this end, it is subjected to treatments which constitute its composition. The pioneers of acoustics used not only the body of the object but, essentially, interior architecture, that is, also finishing materials and fittings, to regulate its properties, for example reverberation. The Boston Symphony Hall (1893-1900) is the first room to be designed by an active physicist, Wallace Clement Sabine, as it turned out, the only scientist in the world at the time who had knowledge of architectural acoustics (he is considered its creator). The acoustic parameters that characterize a given space, nowadays included in mobile frames, allow you to adjust the perception of the place. They are treated as **works of sound art**.

The idea of visual acoustics

Research into the phenomenon of the origin of sources of the forms and content of the chapel in Ronchamp (Stuart Cohen and Steven Hurtt) highlights the complexity of Le Corbusier's artistic concepts, such as "**visual acoustics**" and "**landscape acoustics**", and their impact on the development of formal motifs. The architect recommended exposing the sculptures, but in open space, arguing that they "correspond to what I call acoustic plasticity" (*la plastique acousticque*), that is, "**forms that emit and listen**" to show "acoustic" resonance with the landscape and metaphorical connection to the world of infinite space[23]. Le Corbusier's reflections in recent years on the objectives of architecture from the point of view of the intriguing idea of **visualizing acoustics** presuppose that its predestination is intended to create "**inexpressible spaces**". This fascinating approach opens up the possibility of peregrination of this inspiring multidimensional metaphysical "**inexpressibility**". It can be assumed that, to some extent, Le Corbusier, by referring to the

[22] http://glissando.pl/aktualnosci/poza-ekspozycje-dzwieku-w-poszukiwaniu-nowych-frontow-audialnego-wystawiennictwa-wokol-projektu-niewyczerpalnosc/ [dostęp: 8.05.2019].

[23] http://quart.uni.wroc.pl/archiwum/2011/19/quart19_Was.pdf [accessed on 04/05/2019].

"unusual" or "extraordinary", moderated the extreme rationalism he pushed in the first decades of his work. Therefore, the unusual, phenomenal interior spaces of the Ronchamp chapel, marked by the ambiguity of moody metaphysical images created using existing and absent natural light listened to and condensed by three towers which also delineate **spatial acoustic threads**, to which the walls of the chapel inclined under the influence of resonance (reverberation) of the external surroundings (landscape) refer formally – "**addressing the words to the landscape"**.

Over time, the architect began to see the need to emphasize the importance of the **organizing role** of the work, the object, in the landscape, calling it a "passive environment" and accentuating its impact, and later also pointing not only to aspects of the **"speaking" of the work** but also to the need to take into account the architecture from the perspective of **the work manifesting the dimension of "listening"**, aimed at collecting and processing sounds from the landscape. In the formal planning of the Palais de la Société des Nations project in 1927, Le Corbusier worked on solutions of symbolic elements, translating the idea of "**visual acoustics**" into specific shapes. In order to exchange features between the landscape and the architectural object, as a result of opening up to sounds coming from the surroundings, the body of the entrance pavilion to the main palace was realized on the plan of an arched rectangle and from the inside facing Lake Geneva. This dialogue was complemented by an over-the-body extended monument with a group of sculptures also facing the water.

The concept of architecture listening to sounds of the environment, entering into a kind of formal dialogue with it, provides an opportunity to maintain the expected balance of visualizing in the acceptance of mutual characteristics. **Visualization of acoustics** from the outside of the object also moved to its interior as a result of the application of a clear curvature in the form of a ceiling for the meeting room. The bending of the floor plane of the room was aimed at strengthening the projection of desired sounds while the reference of the arch of the pavilion façade to the shoreline of the water reservoir constitutes a symbolic opening to the landscape of the surroundings. In the late 1920s, the architect increasingly emphasized the aspect of "listening", developing the concept of architectural dialogue with the environment, including the capture of landscape sounds into all the artifacts designed and found.

Eye-centricity. The visualization of sound

When considering issues related to human communication in general, we reach for its various forms, we look for interconnectedness between the mind, perception and functioning in the world. Focused on the transmission of information in visual form, we use different means of communication, reaching for such elements of expression as illustration, photography, typography, infographic, film or animation also when we design the immediate human environment. Visual communication when it comes to space is as important as the one relating to the Internet. Today, more and more often visual communication reaches for more complex forms of communication, of a hybrid nature, which use non-traditional formal language the meaning of symbolic references and the functions of social codes. Visual sensations extend to sensory experiences resulting from aural sensations because being in the world is constantly associated with receiving sounds due to the unique sound layers assigned to each of the places that equally determine the way a particular space is felt. Its distinguishing feature, of course, can be the metropolitan movement, the breeding area of birds, the local language, but also the landscape architecture in the form of the formation of the environment with its furnishings. It is clear that **sounds are an element that makes up a certain identity of a place** or cultural group, and these have their own unique sounds, but also the resulting remnants in the form of impurities consisting of "dead sounds that have accumulated during the day"[24].

Reflection on auditory forms of communication is so rare and rather random that it becomes indispensable to adopt an active attitude towards the audiosphere in order to sensitize us, the audience, users, to **sounds of everyday life** and, thus, to encourage us to take care of quality of our environment in its full spectrum. A tool that is used in the designing of sounds of everyday life, or its discovery and analysis for the purpose of working it out, is the practice invented by Hildegard Westerkamp. It consists of walks, during which sounds are recorded typical for a given space and a given place with the elements assigned to it, after which the collected materials are analyzed along with further forms of research resulting from the program and design process. The idea of stopping sounds in time and space, whether in the form of museums or otherwise, such as *soundspace* or *soundscape*, together with **the visualization of acoustics, even in Corbusierian terms**, seems essential in receiving reality in an unlimited way, generates a philosophy addressed to the recipient who can live reality indefinitely for a period of time and regardless of the concepts developed. What is suggested by this procedure is rather an attempt **to imagine the object, its form and shape, that is, sound, over time and in a spatial dimension**. Common references to his contemplation and

[24] J.G. Ballard, Wymiatacz dźwięku, translated by Z. Uhrynowska-Hanasz, http://robwal.cba.pl/ksiazki/Ballard%20-20Wymiatacz%20Dzwieku.htm [accessed on 02/12/2019].

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Berlin, Muzeum Żydowskie , instalacja Menashe Kadishmana pt. Shaleschet, betonowa wieża wypełniona zwielokrotnionym krzykiem (fot. B. Gibała-Kapecka).

experience occur in the **ultrasonic** music of Ballard's *The Sound-Sweep*[25] – **felt but not audible, compressed** to such an extent that "the past, present and future are melting in simultaneous reception". This also applies to the unveiling of **temporal reception of shapes** of objects and, as a result, to the resulting **formal shaping of the environment**.

Back to the future. "Capital city's sound removal plant""

For Ballard, built-up spaces become museums of sounds, walls have ears, and listening to architecture becomes a form of revealing successive layers of time. Architecture becomes more than a living space. By storing sound directly, it also tracks the relationship between human presence and the shape of a built environment. Consequently, under such conditions, acoustic space becomes not only a function of materiality and one of the characteristics of buildings or built-up areas, but also a tangible object which can interact with itself.

> "The clearing the space of everyday trifles, like slamming the door, the sound of a falling-over somewhere, the whistle of the kettle, a few grunts" **turns into a ritual**[26].

> […] a strange neo-Corbusierian chapel of the Episcopal church pressed in between office buildings of the banking center of the city […]. The chapel presented a difficult and laborious task, requiring three hours of full focus. The Dean recently brought from the church of St. Francis of Assisi unique thirteenth-century portico, wonderful sound matrices, rich in seven centuries of Gregorian chants, covered with a layer of centuries-old tolling the Angelus. Mounted in the altar, they exuded an atmosphere of devotion – a whisper of a litany, a gentle depth of the hymn – which brought to mind the exalted images of prayer and meditation[27].

> […] just two years earlier the entire northern aisle of the Reims cathedral, with its untouched rosette window, purchased at a record price of one million dollars and built into the new St. Joseph's Cathedral in San Diego, was stripped of its priceless legacy of sound layers by a brigade of blunt sweepers who misunderstood the instruction and accidentally cleaned a wrong wall of sounds[28].

[25] *Ibid*. p. 99.

[26] *Ibid*.

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

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

A number of works were done to "extend the life of the porticos of Assisi by twenty years; without it, they would soon be tainted by various noises from the faithful"[29].

The desired "ability to sweep selectively – to remove from the walls of the chapel all unnecessary sounds, constituting disturbances, such as swathing, crying, the jingle of coins or the murmur of prayer, while leaving choral and liturgical chants, which further enhanced their lofty tones"[30].

Warnings – „sound resonances will reach such a degree of intensity that buildings under the influence of vibrations will begin to collapse and the whole city will collapse like Jericho"[31].

Muzak[32] fills public spaces, is their acoustic complement as a comforter and manipulator of the subconscious, finally hiding everywhere in the form of impurities. It is intended to create a special mood for shopping, hotel stays, work, offices and cafes or restaurants, also subjecting users to a kind of abuse. Thoughtfully selected and composed **music wallpapers** influence the behavior of the audience, making them desirable elements of marketing strategies, recognizable marks and, thus, distinguishing brands, companies or other organizations, associations and foundations.

The seemingly non-invasive **muzak** has created a specific profile of sound space policy management, while pointing to **a lack of responsibility** for sound in a public place. **Muzak expands its scope of influence, sweeps ever wider circles**, implies guarantees of safety, sending thoughtfully selected musical sounds to block entry, and thus the participation, of inappropriate or undesirable persons in accordance with the idea of ensuring safety of other specific recipients. This is how public space becomes **a tool in the categorization of the society. The process of its distribution to the public has been launched**, systematic spatial segregation is carried out, resulting in the creation of so-called "defended spaces", i.e. areas also planned sonically in a way attractive to model consumers, eliminating these "unwanted" while maintaining the process of social marginalization. On the other hand, spaces have been expanded by the extent of the impact on the outside environment, such as playgrounds, café gardens or car parks, while staying in which **we still remain within the same area**.

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

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

[31] Tamże, s. 111.

[32] A. Janikowska, *Audiosfera*, „Koncepcje – Badania – Praktyki", 2016, nr 2 (4) (http://pracownia.audiosfery.uni.wroc.pl/wp-content/uploads/2017/08/Audiosfera-2-2016_Janikowska2.pdf [dostęp: 2.07.2019]).

Muzak is programmed to mark a territory, is used to “create your own versions of space” so that you can freely moderate and manage them. In this way muzak interferes with our living space. The growing areas of sound interaction begin to intertwine, overlap, leading to a cacophony of sounds of different interests. Muzak has penetrated so deeply into the modern world and our lives that it seems that this kind of “sound architecture" must be subject to a design process on an equal footing with urban and architectural ones.

The interdisciplinary cooperation undertaken in the framework of the “NEW SPACE” project in the field of science and art raises the issues of producing democratic and inclusive spaces, draws attention to their complex acoustic diversity, thereby pointing to the need to bear responsibility for sound design, i.e. the implementation of new acoustic technologies, sound architecture and acoustic ecology, the essential component of which is the relationship between people and their surroundings, including cultural ones. On the one hand, it represents natural sound phenomena and, on the other hand, elaborated compositions of the sound landscape.

We evolve from the space in the auditory dimension to the concept of identity spaces as continuous, but time-changing, stories that allow us to look at this layer of public sound spaces differently, where you can listen to sounds of the past and present worlds, see their shapes and faces with your imagination, experience sound events.

The visualization (of the landscape) of sound

Public awareness of the dangers of noise is increasing, which is why, as a society, we increasingly demand that acoustic comfort be taken into account in the design of the immediate environment, indicating this factor as one of the most important because it determines the quality of everyday life. Noise emission directly translates into acoustic nuisances which contribute to the formation of social conflicts also in the family environment. As a result of changes in social, economic and cultural life, and, with the 21st century, the entry into information civilization, which is a global phenomenon[33], we are experiencing too rapid build-up of noise, which consequently exacerbates the disappearance of areas colloquially referred to as quiet, inherently acceptable. Since the beginning of the 21st century measures have been taken, known as the revitalization of public spaces and the state of the

[33] W. Furmanek, *Ogólna charakterystyka przemian cywilizacyjnych*. „Dydaktyka Informatyki”, 2004, nr 1, s. 17-27 (http://bazhum.muzhp.pl/media//files/Dydaktyka_Informatyki -r2004-t1-s17-27.pdf [dostęp: 17.06.2019]).

environment[34], green spaces, squares, pedestrian streets and walking alleys have been cleaned up and created, which, through implemented formal and functional solutions of an interdisciplinary nature, are associated with an improvement in aesthetics, thereby increasing the attractiveness of places and improving the acoustic quality of public spaces. The problem has been raised, but it still requires spectacular holistic action, not grassroots initiatives, because, on the one hand, **public space is starting to sound multi-voiced** and, on the other hand, the increasing globalization is causing the **unification of traditional sound landscapes characteristic of specific places**, followed by the loss of the so-called "distinguishing sound features of the landscape of space", which determine the identification of man with space and place, known as "identity elements".

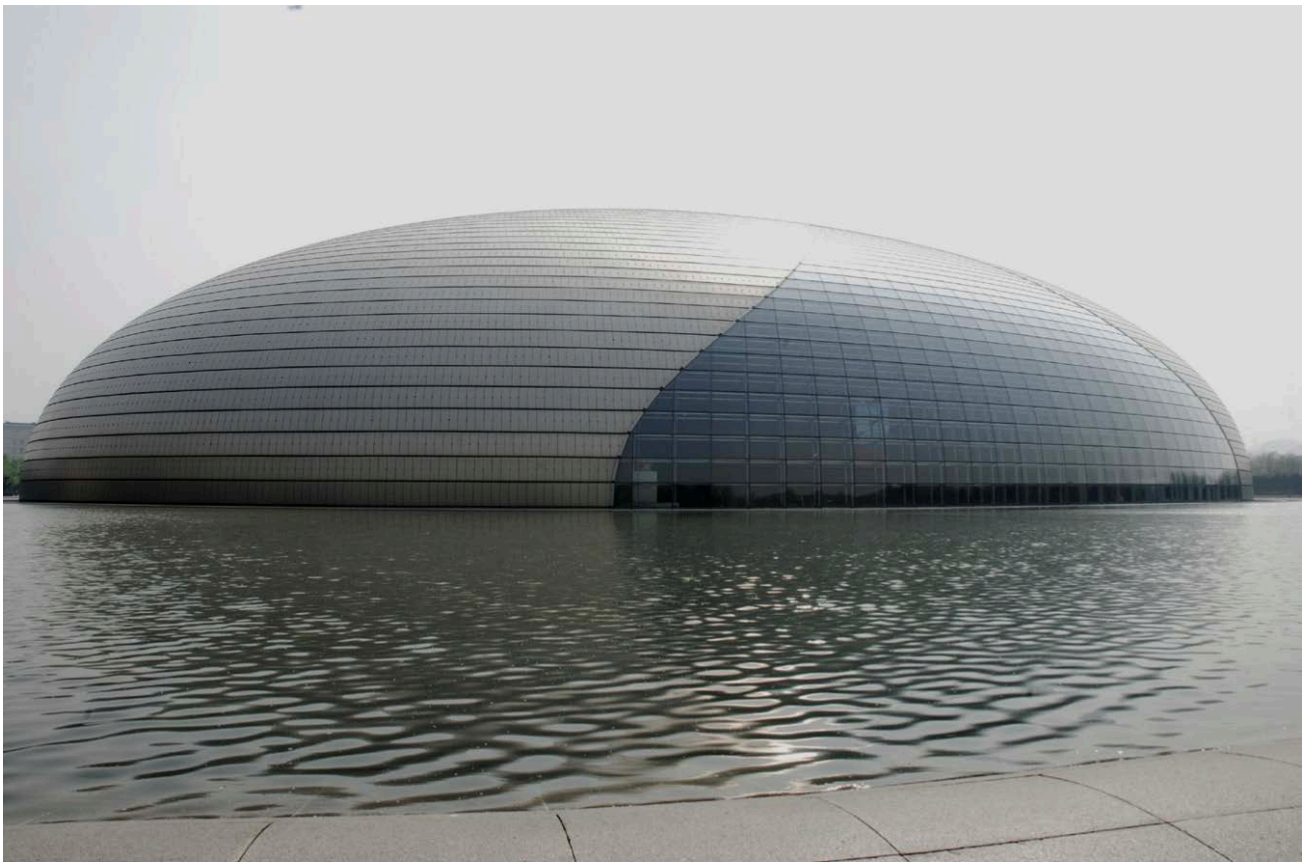
The research and design problem is now recognized so widely that there is a growing interest in creating detailed graphical acoustic maps included in the set of tools used for interdisciplinary research into the **broadly** considered creative shaping of space for human life, based on the experience of interior architects creating designs of public spaces and residential interiors. The essence of the comfort of human life lies largely in the satisfaction with functional solutions and qualitative formal (aesthetic) changes made, which make up to a large extent the feeling of social and mental state of one's own life. The list of basic conditions of well-being ranks very highly, inter alia, the cultural pattern which includes the above creations of **material culture**, as well as the established way of behaving and thinking, together with "assigned cultural characteristics characteristic for a given community". They can consist of surrounding unique sounds and noises, *soundmarks*[35] that make up the recognizable mood of places and objects. When field-recorded, they are phonic situations which are archived as a source of sound landscapes (R.M. Schafer).

Recording and analyzing recorded audio phenomena serves us, interior architects, to make transformations in public spaces, reconfigure their structures taking into account different zones and places, also in diachronic terms, for recognizing changes taking place. Perpetuating audio phenomena characteristic of the sound landscape of a given interior proves useful due to the needs of acoustic revitalization of architectural interiors. The nature of the reproduced architectural structure of the interior, the elements of its equipment and dictated by the function performed, are at

[34] S. Bernat, *Wizualizacja dźwięku w krajobrazie na mapach „dźwiękowych". Visualising Sound in Landscape on Sound Maps*, „Prace Komisji Krajobrazu Kulturowego. Dissertations of Cultural Landscape Commission", 2015, nr 28, s. 81-97 (http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.baztech-86b36b5e-bf81-40bd-9a67-71c4ca5c178a/c/PKKK_2015_28-6.pdf [dostęp: 12.03.2019]).

[35] Soundmark: a unique sound known to, and recognized by, a given community.

the same time guidelines for acoustic designers when making **acoustic reconstructions**. Sound maps (sound space maps) are also accompanied by auditory maps which complement the suite of tools used to shape the space. They can also function as a stand-alone criterion for phenomena. Sound is used as an alternative to vision for blind or visually impaired people, it is an interpretation of numerous phenomena specified on maps, characterized for example by such data as "location, volume, altitude, pace, duration, articulation. For example, a metallic sound can be used to present urban phenomena while a warm or mild sound can be used for rural phenomena"[36]. It is thanks to hearing, receiving sounds, that we are able to experience invisible situations. Sound gives you the ability to refer in a suggestive way to quality that would not be read and recognized in visual form. As it turns out, however, sound also needs visualization[37] to achieve greater sensory reality because auditory information may not be conclusive due to similarities of sounds emitted by different sources. Therefore, surveys on the sound landscape use drawings, mental maps or visualizations in descriptions and evaluations. In the course of the studies carried out it became obvious that visualizing the sound landscape of places in the form of drawings is easier – it shows a perspective closer to man.



PBeijing, the National Theater, Paul Andreau (photograph by T. Kapecki)

For the purpose of highlighting the sound layer of the landscape, so far, in addition to the verbal description taking into account **echoisms**, symbolic terms are also used, using **musical signs** or drawings. They present the shapes of things or objects, which represent the sources of sound, or shapes enclosed in forms of **wavy lines**, emphasizing the dynamics of sound or landscape elements, including colors that determine the location of the proposed elements and actions in places of their audibility. Of course, the most commonly used tool is photographic documentation. To enable the perception of a sound in an even broader context, you can use a moving image, i.e. a video recording or computer animation. Visualizing the sound landscape, however, is not an easy task. It seems obvious to say that no graphical image of sound presented in the form of color or linear compositions at present will replace its sensory experience in a given place and at a particular time. Justin Winkler even claims [38] that this way of imaging, presenting sound events is at most in the dimension and character of a "sound postcard", unfortunately it is not yet a visualization of sound landscapes. As always, the experience of researchers on the same issues is different. Bernie Krause believes that in the description of the sound landscape photos are certainly a much more valuable message than words. An important element in education is the acquisition of creative skills, including those aimed at developing various forms and methods of visualizing sounds in the process of "mapping" the sound landscape, recording the classification of sounds (alarming, focusing attention, warning, and finally also pleasant or unpleasant ones), and consequently creating from them to implement compositional systems of soundscapes.

Urban space

Urban space in the form of the interdisciplinary "NEW SPACE" project is considered as **a place with a multiplicity of multiple structures** which are the subject of various expressions and experiences, symbolic interpretations, ritual references (both religious and secular), exclusionary adaptations, practices usurping the right to appropriate these places to a greater extent than allowed. **The aim is to participate in the formation of diverse (inclusive) spaces of general interest as democratic spaces of general interest, while drawing attention to the holistic view of the problem of human relations with his surroundings**. In order not to impoverish our environment, it

[38] Winkler J., *Space, Sound and Time. A choice of articles by Justin Winkler in Soundscape Studies and Aesthetics of Environment 1990-2003*, Basel 2004 (http://www.iacsa.eu/jw/winkler_space-sound-time_10-09-19.pdf [accessed on 14/04/2019]

should take into account the widest possible spectrum of cultural stimuli, involving the participation of all senses, contributing to its physical and sensual character. Excessive focus on the intellectual and conceptual aspects of space contributes to the disappearance of answers to questions about human existence. Interdisciplinary tools and methods linked to spatial models are therefore necessary to analyze the shaping and revitalization of urban space, taking as a starting point cultural, aesthetic and psychological guidelines, including those taking into account the experiences of its inhabitants and users.

Juhani Pallasmaa, forcing us to reflect philosophically and culturally on the condition of modern civilization, both in *The Eyes of the Skin* and especially in *The Thinking Hand*, draws attention to the "existential and embodied wisdom" contained in architecture, in the wider space, recognizing that it grows out of the experience of architecture and general reflection on man, what role the human body and senses play in this cognitive process. An equally important component of spatial experience alongside visual aspects is, besides, the auditory dimension. Michael Bull, editor of "Sounding Out the City" magazine[39], says that "none of the urban theories work, starting with Georg Simmel's theory of the early 20th century, through the study of the sound landscape of R. Murray Schafer, major urban theorists such as Walter Benjamin, Michel de Certeau, Max Weber, Marshall McLuhan, Theodor Adorno, Herbert Marcus, Michel Foucault, Jacques Attali, Michel Chion, Gaston Bachelard and, more recently, Peter Szendy because they rely to a large extent on the visual epistemology of urban behavior" while in urban space projects and their research he always had to deal with significant dimensions of sound matter, **the sound area**. Together with Les Back, dealing with possible future ways of developing *sound studies*, they say that "when they think with their eyes, they are given an opportunity to broaden their critical imagination".

Denis Cosgrove attributes to the Renaissance the giving of a fundamental importance to mastering the possibilities of the human eye, justifying his view of the need for society to become more efficient in controlling space and urban fabric at this stage of development. As a result, this led to an escalation of the development of different urban planning concepts, clearly aimed at introducing a formal order in order to gradually reduce the visual chaos (spatial entropy) that was a natural

[39] *„New opportunities for listening". Sensory culture in the digital era and the sustainability of utopia*, the interview with Michael Bull, Violeta Nigro Giunta et Nicolò Palazzetti (https://journals.openedition.org/transposition/1580, (accessed on 21/02/2019). Theorists important for the discipline, mentioned in the interview: Michel de Certeau, Walter Benjamin, Max Weber, Marshall McLuhan, Theodor Adorno, Herbert Marcuse, Michel Foucault, Jacques Attali, Pierre Schaeffer, Michel Chion, Peter Szendy, Gaston Bachelard and Brian Kane.

consequence or result of urban forms developing organically. It seemed obvious, therefore, that chaos was subordinated to geometric compositional systems, seeing in them the possibility of efficient surveillance of urban communities, thus providing the basis for strategic urban planning.

> Ideas confronted to reality often turned into their own caricatures. Social relations and politics were the most common drivers of urban change. They set the directions of the transformation of space, they brought new structures to life or led to the ruin of the existing shape of space. In any case, however, the idea of the city was, and is, its plan. It is fascinating to discover the ideological layers of the city hidden, or perhaps enchanted, in their geometry, spatial systems and meandering history of urban development[40].

The death and life of America's great cities is a collection of Jane Jacobs texts published in 1961, which turned out to be one of the fundamental works about architecture and the city, which were published in the 20th century. It started the fight against the radical ideas of Le Corbusier and, thus, also against modernist urban planning, with the domination of blocks and shopping centers, parking lots and high-speed routes, while presenting specific solutions for the regeneration of cities, fostering the natural and harmonious development of their inhabitants as well. "By arranging cities, as in other activities, we need art to help us understand life, to show us the meanings, to illuminate the relationship between our lives and life beyond us. Perhaps we need art the most to assure us in our humanity. Although art and life are intertwined, they are not the same"[41].

At the turn of the 20th and 21st centuries two important documents were produced: "Carta Megaride" (Naples, 1994), which provides basic guidelines for the planning of modern cities, and "The New Athens Charter", subtitled *Visions of a 21st Century City* (2003), which in turn corrects the effects of the guidelines contained in the CIAM's Athens Charter of 1933 and points to the need to restore forgotten values such as the scale of the city and the paradigm of coherence of its various elements. Since then alternative ways of social sustainable cohabitation, such as smart grow, "new urbanism", or slow cities, have been developed, negating, above all, the development model of accelerated urban development. An opening was initiated for humanistic reflections, for urban research focused on sensory issues, which gained paradigm status in the 21st century. Hence the desire to **revaluate listening** as an activity that is an essential component of man's ecological relationship with his spatial and cultural environment. Also, the concept of "aesthetics beyond aesthetics" by Wolfgang Welsch, created under the influence of the latest technologies, inspired to

[40] Z. Paszkowski, *Miasto idealne w perspektywie europejskiej i jego związki z urbanistyka współczesną*, Universitas, Krakow 2011, p. 9.

[41] J. Jacobs, *Śmierć i życie wielkich miast Ameryki*, Fundacja Centrum Architektury, Warsaw, 2014, p. 383.

consider the problem of “the functioning of visual metaphors as the most adequate representation of thought processes”.

Against the background of these reflections it can be seen that the concept of sight-centrism does not refer only to the dominance of one sense over the others but describes a broader stream of reflection (*sensory studies*) that have opened art and humanities to forgotten and consequently overlooked aspects of sensory experience, mediated not only by sight but also, alongside touch, sense of sense and taste, by hearing. In this way, the field of research has been broadened, as it is impossible to understand sound in a single discipline. It continues to concern urban planning with architecture, technical sciences, history with literature, has become an essential part of art and culture, sociology, social sciences and humanities. Today, sound research also includes human geography and *media by proces*, the practice of everyday life in the city. It became multisensory, which resulted in an in-depth awareness of the quality of the living environment.

Aural architecture. The auditory architecture of interiors

Steen Rasmussen asks if architecture can be heard[42]. He compares sound to light which objects reflect, revealing their qualities (**form and matter**), even though they do not radiate it. The architect points to the analogous influence of sound which also reflected from the object and completes the impression of its form and matter. These sensations provide us with spaces and interiors in a diverse dimension, because they depend on their formal shape and substance content. So we experience space and its objects aurally. Through audible, characteristic sounds, as a result of perceived acoustic effects giving the impression of the length of the structure, the types of surfaces that resonate with the sounds of different times and stories, the cylindricality of the form, the thickness of walls, they become powerful instruments on which people learned to play – “Those gathered in St. Mark’s Basilica heard not only two orchestras. They also heard two dome-covered rooms, one of which spoke with silver tones and the other responded with powerful gunmetal sounds”[43]. Rasmussen refers to Hope Bagenal[44] who clearly proves that the polyphonic music performed today at the Westminster Cathedral is directly due to its architectural form and the “open vowels of Latin”. Bagenal also demonstrated relationships between the interior architecture of St. Thomas’s Church in Leipzig, its

[42] S. Rasmussen, *Odczuwanie architektury*, Murator, Warszawa 1999, s. 224.

[43] Tamże, s. 230.

[44] P.H.E. Bagenal - teoretyk architektury i akustyki, który wprowadził naukowe podejście do projektowania akustycznego budynków.

Gothic structure, and the compositions created by organist Jan Sebastian Bach. He recorded his works in several tones due to "the absence of tone, that is, the area of response in the church"[45].

Biennial of Architecture in Venice, 2010, Olafur Eliasson: "Your split second house", the installation combining light, water and sound (photograph by B. Gibała-Kapecka)

[45] S. Rasmussen, *Odczuwanie architektury*, dz. cyt., s. 231. We wnętrzach kościoła średniowiecznego dźwięk trwał od sześciu do ośmiu sekund, dzisiaj - od dwóch do pięciu.

Today, it is Barry Blesser and Linda-Ruth Salter, scientists and theorists of **auditory architecture**, who raise the question of the need to consciously and intentionally shape the audiosphere considered on a macro scale, that is, especially with regard to the development of urban space, in the planning of new investments, because, as it turns out, the sound reality surrounding us still remains outside the area of interest of urban planners. The researchers prove that by designing the sound landscape of individual places in advance, it is possible to improve the nature of space and its objects, and significantly that "the acoustics of a given space models its experience to a large extent." **This means that responsible shaping of the space for human life is planning in a holistic sense**, so that the sound of a particular area with its backgrounds and symbolism of characteristic importance together with the local architecture "expresses **the identity of the community** to the extent that the inhabited areas are recognizable and characterized by their **sound landscapes**". American scientists transposed Schafer's demands into architecture, thus formulating auditory architecture reverences, including the above design guidelines for emerging buildings, along with thoughtful planning of the sound nature of their surroundings. The idea is to re-raise awareness of the auditory reception of the everyday environment, and the idea itself was born of the modern necessity of the successive elimination of the growing range of acoustic sensations, which we are subjected to independently of us.

In our Polish realities the current process of architectural interior design takes into account only acoustic design within the compliance with the requirements of standard **soundproofing in so-called "building partitions"**, and in practice it is limited to this. The auditory aspect raised by interior architects in the design of the most important spaces for human life, which are multi-family buildings, for obvious economic reasons, is fully realized only at the finishing stage, when only half-solutions can be applied. **Most often, however, only after a certain period of use of space, object or interior, due to psychosomatic symptoms and as a result of recognized causes, such as irritability, a feeling of anxiety, prolonged state of denial**, users discover a reluctance to stay in the space and use it, as a consequence human relationships become disturbed.

Unfortunately, the process of influence of sounds in the psychological or psychophysical dimension is completely overlooked, because it requires a significant individualization of design work. Such a socially sanctioned reduction approach causes the growing architectural autism to take root in our common reality, thereby depriving architecture of one of its most important tasks: giving a person a sense of security, an existential backing in the world. However, it is necessary to examine

the problem from the side of the liberally understood right to privacy ("my home is my castle"[46]) – **the privilege**, although regulated, but allowing you to make noise within his own apartment or house. As early as the 19th century, the reception of all stimuli, including sound, was considered to be individual sensations, such as individual things, against which objective measures are difficult to apply.

The research on noise and, consequently, conflicts that arise from it, carried out by Karen Bijsterveld and Emily Thompson as part of English legislation on noise, has shown that they are strongly marked by social realities, to the extent that they reflect interclass divisions, and the final regulations on its inclusion and exclusion from the fields of everyday life, that is, attempts to "discipline" sound or channel it, were left to local communities, i.e. bottom-up community regulations.

The acoustic environment in a transdisciplinary perspective

Interdisciplinarity is necessary here because in the so-called "visual culture" one forgets about public space, and with it about coexisting, especially visual, architecture and interior architecture, that is, design art. It would seem that John Cage in his performance *4'33"* (1952) and James Graham Ballard in the short story *The Sound-Sweep* (1959) reopened spaces of art for sound in terms of a wide spectrum of impact as something elusive but giving a sense of time and space, albeit hidden inside our minds. Raymond Murray Schafer dealt with what is outside almost in parallel, in the late 1960s. He started the "World's Sound Landscape" project with a novel action in the field of sound ecology. In the case of musicology, medicine, philosophy, later acoustics and the theory of cinema, it can be said that reflections arise from the dawn of time but theorists of sound studies are of the opinion that the spectrum of references is disintegrated and, consequently, parceled out. **That is why it is so important to deepen the understanding of sound from an interdisciplinary point of view on issues related to the wide-ranging multidimensional space, architecture**[47] **and design arts**, as well as to present architectural reflections on opened and closed interiors including objects contained therein, taking into account social aspects of these phenomena. Sound, penetrating and filling space and architecture, not necessarily in an organized way, constitutes their integral, even the same

[46] The concept is strongly established also in the Polish tradition.

[47] Architects dealing with the subject of sound include Georges Teyssot, Steen Eiler Rasmussen, Klaus Schuwerk, Bernhard Leitner, Buckminster Fuller and Juhani Pallasmaa.

element and, at the same time, defines, and becomes an obvious carrier of, social relations, both in the private field and in the public sphere.

Efforts made are essentially aimed at appealing to conscious generation around a proper phonosphere, which means planned management of sound waves. It should be stressed that the investigations and analyses are carried out in the both directions. When interpreting space and architecture, with its interior structure, with the help of sound properties, sound is also presented from a new perspective with the accompanying scientific reflection, for example in terms of performative character, such a significant aspect of modern reality in its various cultural variations. From the point of view of designers of space and its interiors, sound, through the practice of in-depth listening, becomes a tool for creative learning, analyzing and creating new formal, aesthetic values and, thus, the mental comfort of the user, recipient or participant. It can therefore be a research method in which there is creative potential to initiate these qualitative changes in the way space and places are experienced and conceptualized. What is important about the practice of in-depth listening to the research process is "the sensitivity of the researcher himself and, what is most important, that it contributes to understanding the importance of his reflexivity in the process of generating knowledge"[48]. This form of self-reflection, called **autoethnography**, leads directly to performative ethnography, a **methodological approach**, one of the few types of art-based research in which not only data collection activities play an important role but also how they are presented in the form of artistic messages, such as an installation, painting, piece of poetry, song, visualization, drawing, film or project.

Tranquility Rating (TR) – evaluation of the calm of the environment

Every day, sounds along with contextual functions and visual qualities regulate our presence in space. They inform, instruct, warn, incite, allow, bring to mind, identify with a place to fully understand them. Their repertoire is constantly expanding. We remember space, city and place through images. Characteristic sounds corresponding to them tell us their old and everyday stories, they speak with their own voices. If recognized, they become necessary and useful, locating, give us a sense of safety and peace. The philosophy of the authors of the "WELL Building Standard",

[48] A. Kacperczyk, *Autoetnografia – technika, metoda, nowy paradygmat? O metodologicznym statusie autoetnografii*, „Przegląd Socjologii Jakościowej", 2014, nr 10/3, s. 32-75.

expressed by the certification system created by the IWBI™ International WELL Building Institute™, focuses on aspects that are of specific importance for the health, comfort and awareness of users. Research and regulation is undertaken for functions grouped into ten categories, setting the necessary and optional conditions: Air, Water, Nutrition, Light, Movement, Thermal Comfort, Acoustics, Materials, Mind and Community. It is the first system that focuses solely on the health and well-being of users of architectural spaces. It is based on the assumption that the physical environment has a significant impact on people, benefits the health, productivity and well-being of users, which is supported by numerous scientific and medical studies analyzing this relationship. The certification is a proof that the way their space is designed promotes health and well-being[49].

[49] https://plgbc.org.pl/szkolenia-well/ accessed on 26/12/2018].

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DOMINIKA SOBOLEWSKA

CLUSTER AS KEY ARCHITECTURAL CONCEPT OF EXPO 2015

Research processes and the practice of collaborative design

Source:
PUBLICSPACE RE/IN/VENTING, ed. B. Gibała-Kaceka, Kraków 2018.

ABSTRACT

The article presents an innovative concept of the exhibition environment, the so-called Cluster, born in the context of the World Exhibition Expo Milano 2015. The plot focuses not only on the originality of the architectural model, but also on the specific course of design development. The content describes the following topics: the idea and definition of Cluster pavilions, the organization of architectural space, collaborative design processes, as well as contemporary theories relating to socio-cultural phenomena important for today's design. The aim of the article is to consciously compare the design practices carried out in connection with the development of Clusters with contemporary cultural trends and new design paradigms.

KEY WORDS

Cluster; Joint pavilion ; World's fair; Expo; Milan; Collaborative Design; Multidisciplinarity; Pavilion; Theme; Model; Process; Politecnico di Milano/ Polytechnic University of Milan; Research; Cluster International Workshop; Design; Techne; Integrated design; Concurrent engineering; Krebs Cycle of Creativity; Krebs Cycle; Intellectual digestion; Paradigm; Luisa Collina; Carlo Cracco; Buckminster Fuller; Matteo Gatto; Walter Gropius; Marti Guixe; Kengo Kuma; Stefano Mirti; Neri Oxman; Michael Radtke

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Cluster as key architectural concept of Expo 2015
Research processes and the practice of collaborative design

SOURCE:
***PUBLICSPACE RE/IN/VENTING*, ed. B. Gibała-Kapecka, Kraków 2018.**

Idea and definition

Cluster[1] is a spatial grouping or a systemic combination of smaller objects into the larger one. In the context of Expo 2015, from one hand it is an innovative model of multifunctional architectural environment, enabling multidimensional promotion and involvement of participating countries, from the other: the effect of innovative design process, the so-called **collaborative design** engaging in the creative process a group of entities from different fields.

The cluster treated as a new model of participation in Expo is a hybrid born on the basis of two needs of the World Exhibition 2015:

[1] https://dictionary.cambridge.org/dictionary/english/cluster

- Organizing space for countries that for various reasons cannot afford SELF BUILT PAVILION, an alternative to JOINT PAVILION

- Emphasizing the theme of Expo 2015:'Feeding the Planet, energy for Life' (through the theme of individual clusters).

The cluster developed as part of Expo 2015 is an area of promotion of poorer countries that did not have a chance to appear on the previous World Exhibitions, or - as it was in the case of Expo 2012 in Shanghai - they were presented in one unrepresentative, so-called. Joint Pavilion.

Organizers of the Milan edition, trying to learn from mistakes made by their predecessors and in order to meet the global problems of the exhibition, they decided to design a space that will visibly display less developed countries. Especially those that have a significant impact on the global economy and the ecological balance of the Earth globe.

The keystones complementing this idea were thematic threads given to individual cluster units, developed thanks to cooperation between Expo and the Faculty of Agriculture from Università degli Studi di Milano. The committee, selected for this purpose , following the spirit of the 2015 World Exhibition according to which all initiatives were built around the main theme[2], generated the

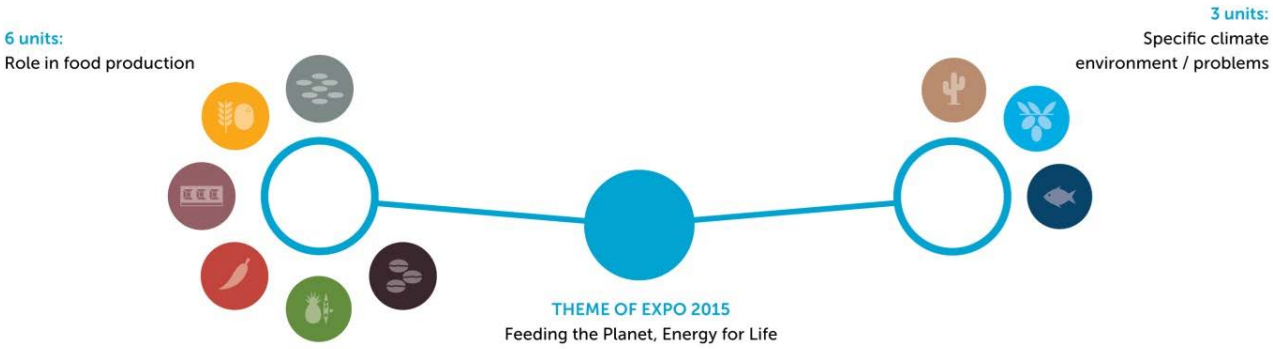
following 9 topics: *Rice, Cocoa, Coffee, Cereals&Tubers, Fruits&Legumes, Spices, Biomediterraneum, Islands* and *Arid Zones.*

The hosts of the Clusters were grouped according to a type of food production, which has been identified here as *energy for Life*. In this way countries were united in their diversity.

Cluster thematic motifs can be divided into 2 groups. The first, referring to the problem of global planet nourishment, also including cultural issues, contains the following topics: *Rice, Cereals and Tubers, Fruits and Legumes, Spices, Coffee* and *Cocoa*. The second, indicating the specific

2 The TOPIC played the primary role in Expo 2015. The best testimony to this is the fact that the Expo S.P.A. established The Thematic Space Department (DTS) and the Theme Guide for the participating countries.

climatic conditions of the Earth includes: Biomediterraneum (understood as referring to the Bio-Mediterranean climate), *Islands and Arid Zones*.



The idea of a story, a plot interwoven with the construction of architectural artefacts was the main dominant feature of Expo 2015, so it easily found its place in cluster spaces as well. Being a reference point for large-scale promotional activities it was also a driving force for all creative activities and design decisions, as evidenced by the unconventional architectural realizations of individual Clusters (attachment Architectural realizations of individual Clusters - photographic documentation).

Model of the organization of architectural space in Clusters

CLUSTER is an architectural space focusing on specific modular pavilions dedicated to the countries that are directly involved with the keynote of Clusters. The idea of organizing the space was inspired by the model of social housing with a well-organized common space, where residents have the opportunity to organize various activities. The architectural model of the Clusters offers the participating countries great opportunities for self-promotion. The largest area of maneuver the participant gains in the inner space of his own pavilion, where apart of the space for individual exhibition (about 60 sqm) there was also a tasting-restaurant (20sqm) and office zone (80 sqm). In addition, there are a number of areas with a variety of functions available to the participants, including: promotional and commercial zones, restaurants, relaxation, cultural events and exhibitions.

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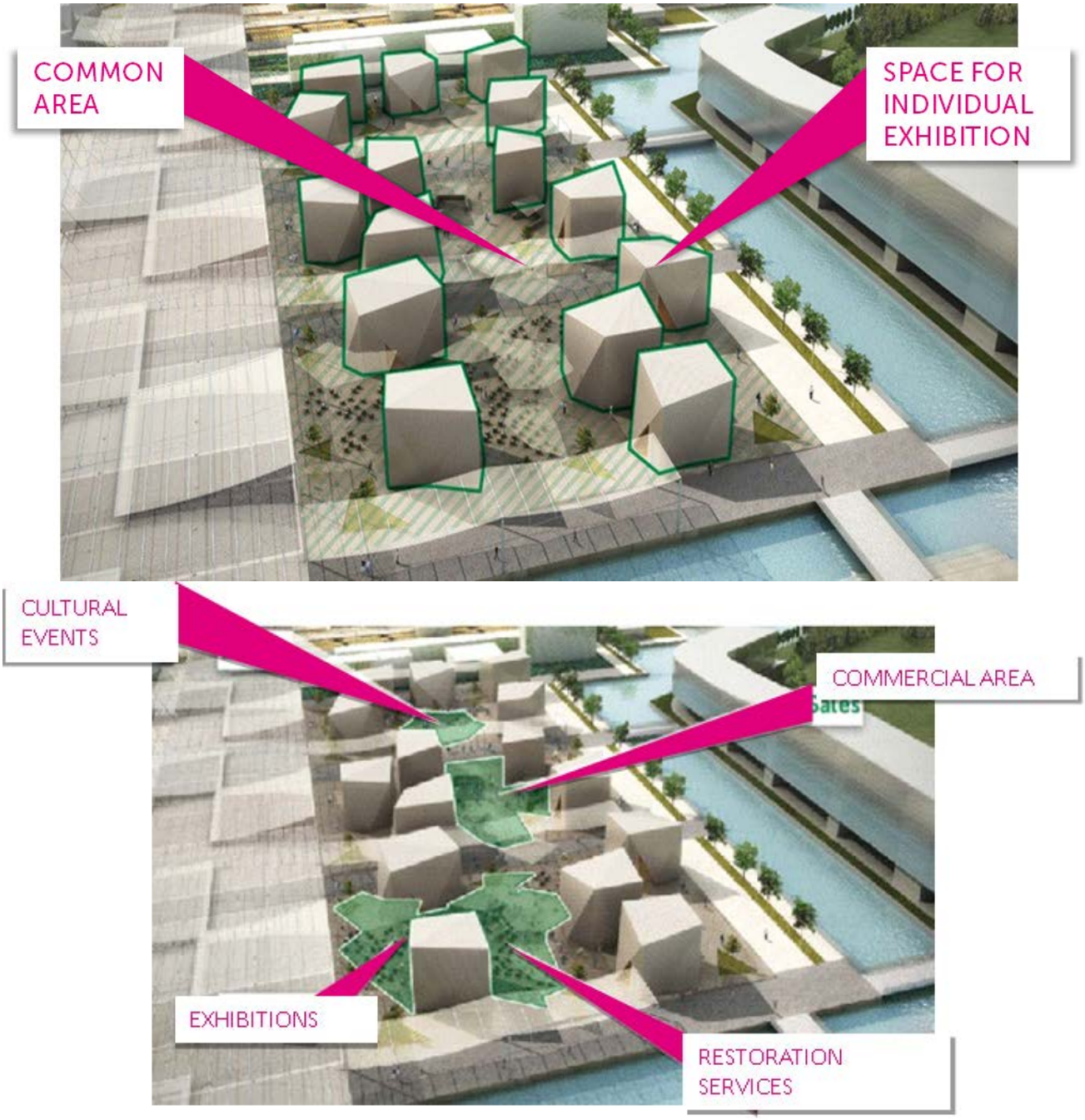

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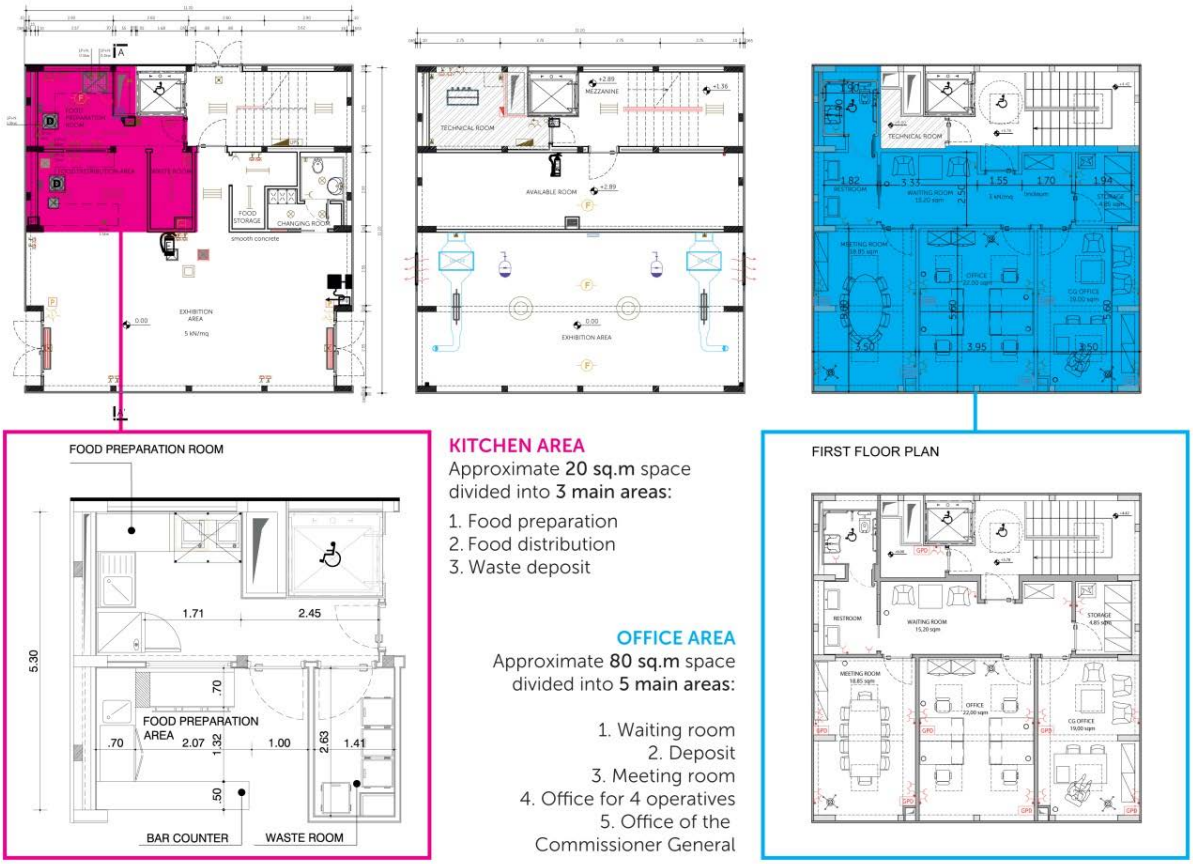
PLAN - GROUND FLOOR (0.00)
EXHIBTION AREA

PLAN - MEZZANINE FLOOR(+2,89)

PLAN SYSTEM + 5.78
OFFICE LAYOUT



KITCHEN AREA
Approximate **20 sq.m** space divided into **3 main areas:**

1. Food preparation
2. Food distribution
3. Waste deposit

OFFICE AREA
Approximate **80 sq.m** space divided into **5 main areas:**

1. Waiting room
2. Deposit
3. Meeting room
4. Office for 4 operatives
5. Office of the Commissioner General

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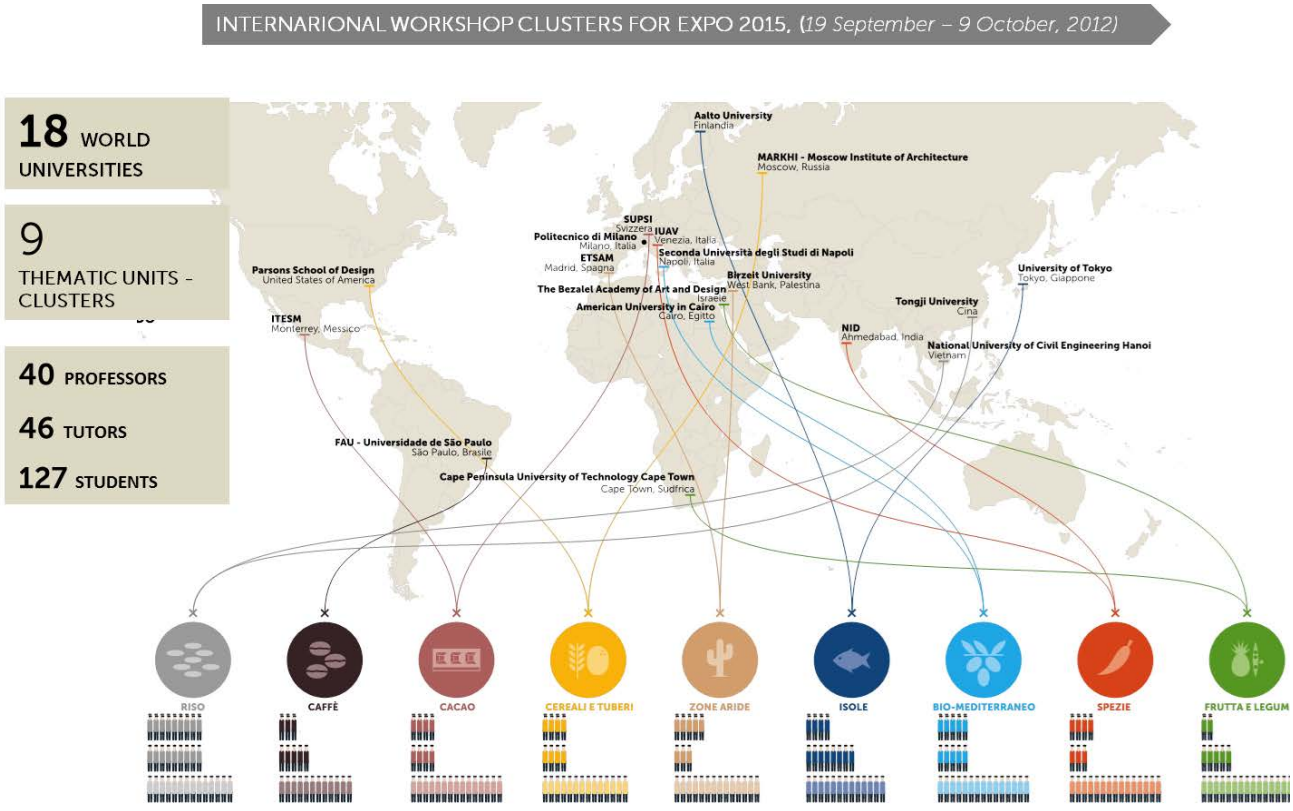
The origin of Clusters – creative processes on the platform of the collaborative design

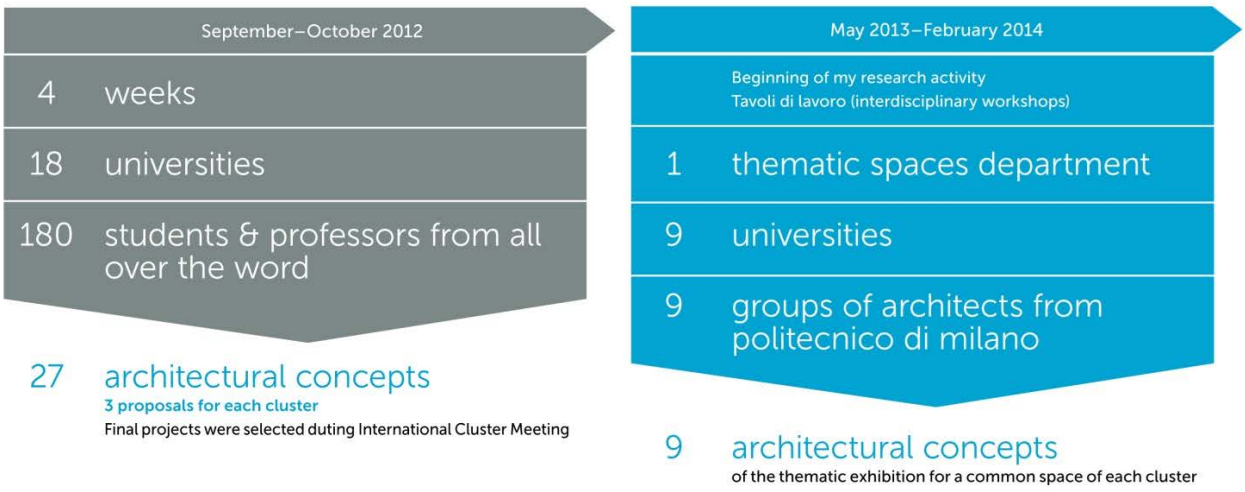
The principle of organizing activities around the construction of specific ideological and functional aspects of individual cluster entities, so called design of designing from the beginning was based on the principles of collaborative design.

Collaborative design is a notion which emerged on the basis of a contemporary theory in relation to a new way of conceiving project assignments. This paradigm applies to research conducted in this field as well as multidirectional design strategies. The research on collaborative design go beyond the traditional frames of conceiving its function only in a technical sense, being open to unconventional methods of observation and creation of new design processes. In an academic context it means the collaboration with researchers representing different disciplines, merging them into research teams and also being open to interaction with external units.



This methodology was fully used by the organizers of Expo 2015. The organizers of Milan world Exhibition set out to implement an experimental, multilevel design scenario involving not individual architects but groups of students and teachers of architecture from all around the world. To this end, by formally cooperating with the Polytechnic in Milan, in summer 2012, they organized a three-week workshop involving 18 universities from different parts of the globe, selected not only with regard for their reputation, but also for their geographic affinity with the subject of Clusters.

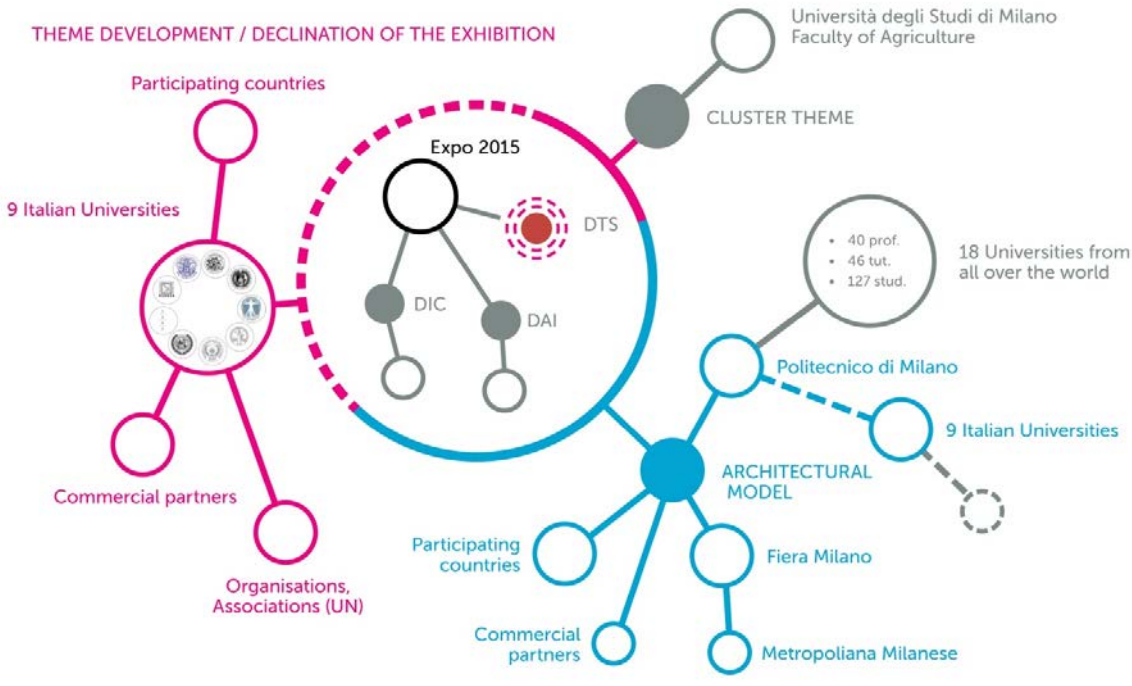
During the workshops, as part of the multidirectional cultural exchange, the individual participants mixed, which resulted in the formation of 9 project teams consisting of students and teachers of different nationalities, including the lecturers from the Polytechnic Institute of Milan. In total there were about 200 participants (127 students, 40 professors and 46 other instructors). The task of distinguishing project groups supported by various experts (Marti Guixe, Kengo Kuma, Carlo Cracco, Davide Rampello, Michael Radtke, Stefano Mirti) was the development of architectural concepts for individual Clusters. As a result, 27 projects (3 for each cluster) were presented during the Cluster International Workshop which took place between the 10th and 12th of October of 2012. During this time, the international jury (composed of professors and architectural experts) selected one project for each cluster in the competition. The winning ideas were afterwards processed by 9 teams of architects from Polytechnic Institute of Milan and Fiera di Milano.



From the moment of defining the architectural concepts for individual Clusters, the attention of the organizers has been focused on exploring particular design problems within the common space of each of the 9 modules (modular pavilions, common space).

Also this time they focused on multi-disciplinary cooperation with scientific units. The Polytechnic Institute of Milan played a significant part and after setting relevant agreements with Expo 2015 it undertook to provide the staff needed to coordinate research on the various project themes of Clusters. The university set up a competition for 4 research positions under the supervision of prof. Luisa Collina – each with a different task profile.

According to the previous methodology, the organization of all processes was based on the guidelines of collaborative design, with the constellation of task teams focused around the Department for Thematic Spaces. DTS (Department of the Thematic Spaces) under the direction of Matteo Gatto served as a buffer, moderator of all creative processes. Research groups from 9 Italian universities were responsible for the substantive aspect of the research, while teams of architects from the Polytechnic Institute of Milan were to handle the technical aspect (one for each Cluster).The participating countries represented by the Department of International Affairs (DAI), Fiera di Milano, various associations (eg. UN) and commercial partners of individual Clusters (eg. Illy) constituted the additional units involved in the project.



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Clusters in the context of contemporary civilizational and cultural phenomena -new design paradigms

Multidisciplinary design methodology of Clusters can be treated as a model of good practice, study case for the emerging definition of collaborative design. Analyzes of the applied procedures and project mechanisms lead to contemporary theories describing the socio-cultural phenomenon relevant to contemporary design.

What characterizes today's reality is a return to the Greek techne identified with both crafts, art, technology and the skill itself[3]. This is by no means a tendency from recent years, but rather strengthened by the intense development of civilization, the result of postulates already announced at the beginning of the 20th century.

One of the initiators of restoring the old meaning of techne was Walter Gropius. In his lecture in 1923, Art and Technology: *a new quality*, he drew attention to the values that flow from the synthesis of art, science and technology[4]. He dreamed about ubiquitous aesthetic functionality for many users. It is thanks to Bauhaus' achievements that attempts at multidisciplinary approach to teaching were born, where design was to obtain the status of artistic activity[5].

Today, the impact of technology on art and design is even stronger and more obvious. Initiated in the 1960s, it created a solid foundation for the birth of the so-called New Renaissance. The ubiquitous occurrence of online communication platforms, simpler technological solutions with accompanying software, give new room for maneuver when it comes to creative activities. Hence new design paradigms, such as *integrated design* or *concurrent engineering*. This methodology, focused on optimizing solutions while reducing production and operating costs, although slightly different from experimental *collaborative design*, is also based on multidisciplinary teamwork.

Design, art, science and engineering are approaching each other in search of common areas. Targeted on multidirectional cooperation, they constitute new patterns regulating both artistic and

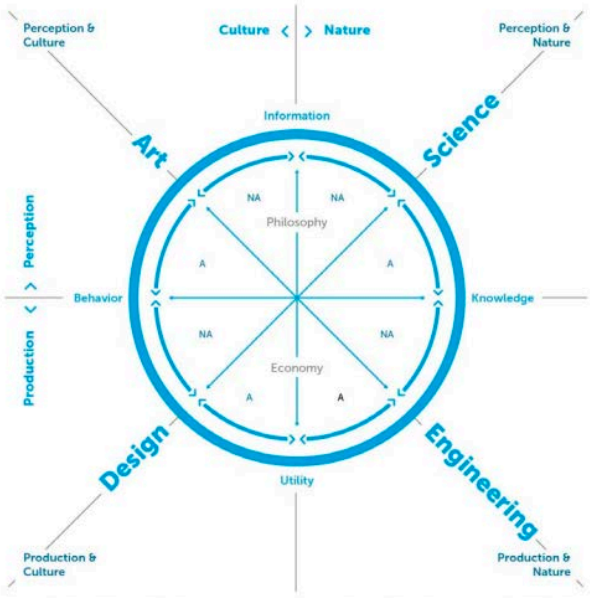
[3] K. Krzysztofek, *Zdekodowane kody*, [in:] *Kody McLuhana. Topografia nowych mediów*, ed. A. Maj, M. Dery-Nowakowski, Wydawnictwo Naukowe ExMachina, Katowice 2009, p. 24.

[4] M. Oslislo, *Old and New Dreams*, [in:] *Kody McLuhana*…, *op. cit.*, p. 230.

[5] K. Krzysztofek, *Zdekodowane kody*, *op. cit.*, p. 25.

scientific strategies, as well as all activities related to new technologies used both in one and the other area. Inspired by each other, they often change the point of view of a given issue.

This phenomenon can be called **intellectual digestion**, and to confirm its presence on the ground of contemporary scientific theories it is enough to refer to the idea of the Krebs Cycle of Creativity developed by prof. Neri Oxman from MIT Media Lab. Referring to the assumptions of the Krebs Cycle, it describes the contemporary dependencies between the main areas of human activity and the resulting profits[6]. **The Krebs Cycle** is a series of biochemical reactions that are the final step in the metabolism of aerobes, oxygen-breathing organisms. Without it, these organisms would not be able to function. Within the Cycle through the oxidation of nutrients, chemical energy is produced, carried by the cell in the form of adenosine triphosphate (ATP) which can therefore be treated as a molecular currency unit for energy transfer. The Krebs Cycle is a type of metabolic clock that first generates, then consumes, and eventually (additionally) regenerates the ATP currency. Putting it shortly, the better the metabolism, the better the results.



Krebs Cycle of Creativity diagram according to professor Neri Oxman from MIT Media Lab, published in Journal of Design and Science (JoDS), January, 2016.

However, following this trail, moving on to the plane of widely understood multi-disciplinary design, we can assume that the aforementioned so-called intellectual digestion, (often requiring a total change of point of view), carries an invaluable potential for creation. As proof of the validity of

[6] http://jods.mitpress.mit.edu/pub/AgeOfEntanglement.

this claim may serve the work of Buckminster Fuller, a "versatile anticipating scientist and designer", whose "geodesic" dome (developed in 1967 for the American Expo pavilion in Montreal) has played an important part in identifying the third carbon molecule[7]. The opportunities arising from the dialogue on art and design on the one hand, and science and engineering on the other, are increasingly tempting not only for individual artists but also larger organisms, such as scientific or commercial institutions.

A manifestation of such ambitions implemented on a global scale is the above-described process of building Clusters. Rooted in the idea of collaborative design is a reflection of contemporary hypotheses, born in connection with a new understanding of design tasks. The organizers of Expo 2015, and all entities involved in building the Cluster concept using collaborative design research have demonstrated an open attitude towards multi-directional design strategies. A new design paradigm practiced during the elaboration of the Clusters' architectural model is the expression of the demand for unconventional methods of observation and modeling creative processes.

Clusters themselves, being a symptom of global problems of modernity and collective responsibility for overcoming them, are a kind of forum for social debate. Design in this case is nothing else than building a multidimensional language between society and the surrounding reality. It is a design capable of shaping thought patterns, behaviors and even arranging all kinds of services and political systems.

[7] K. Pakuło, *Interaktywne przestrzenie – pomiędzy sztuką, technologią i nauką*, „Arteon", 2011, issue 5, p. 13.

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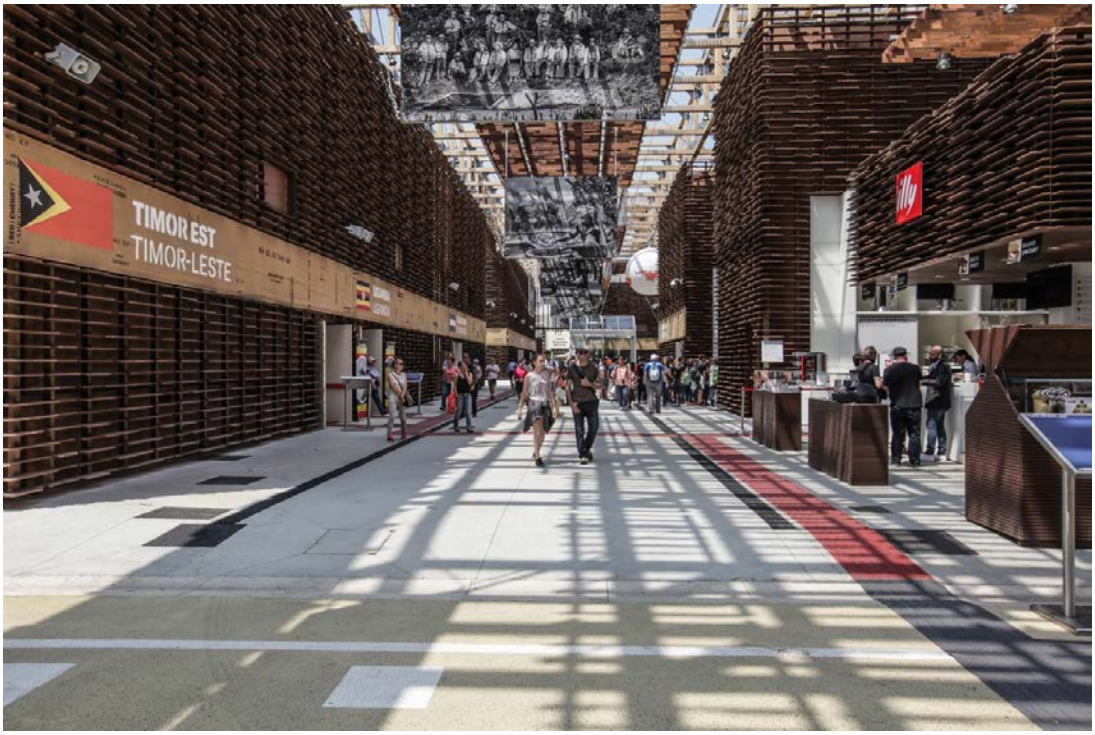

Internal hall in the Cluster of Coffee. Photo by Pietro Baroni, 2015

Internal room in the Cluster of Biomediterraneum. Photo by Daniele Mascolo, 2015

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Internal room in the Cluster of Arid Zones. Photo by Daniele Mascolo, 2015

Cluster of Rice. Photo by Pietro Baroni, 2015

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Internal room in the Cluster of Cereals and Tubers. Photo by Pietro Baroni, 2015

Cluster of Islands. Photo by Pietro Baroni, 2015

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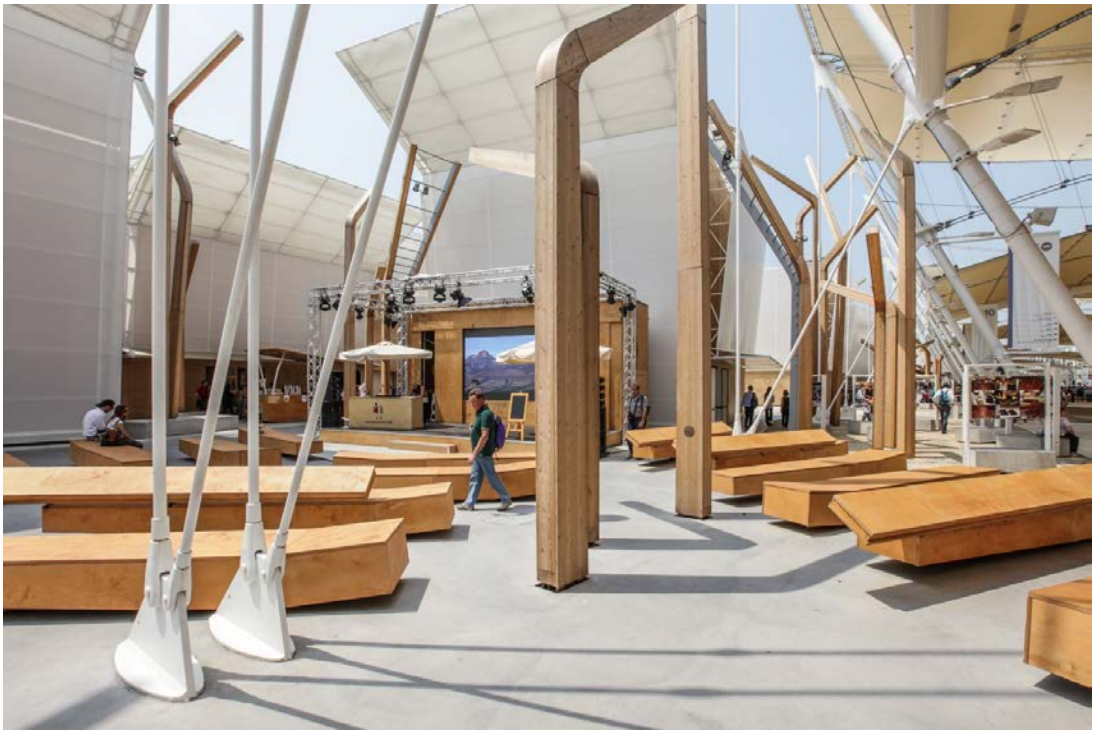

Internal room in the Cluster of Cocoa. Photo by Pietro Baroni, 2015

Internal room in the Cluster of Friuits and Legumes. Photo by Daniele Mascolo, 2015

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Frontal facades of the Cluster of Spices. Photo by Pietro Baroni, 2015

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KAJA CZAJCZYK

AUDIOSPHERE OF INHABITED SPACE

SOURCE:

Alternatywne przestrzenie publiczne: Mateczny–Borek Fałęcki. Przyszłość dźwięku w mieście, red. B. Gibała-Kapecka, T. Kapecki, Kraków 2019.

ABSTRACT

The following text is an attempt to draw attention to the importance of sounds in the perception and construction of our intimate sphere of residence, being an inseparable element of the auditory landscape of the place where we stay temporarily or permanently. My illustrations included in the text are a supplement and my interpretation of the city's audiosphere from the point of view of an artist, interior architect and resident of Krakow, showing the influence of sounds on the perception of the space around us.

According to Heidegger's theory, inhabitation goes beyond the sphere of the object already at the moment of construction. Therefore, the audiosphere of inhabited space should be considered in a broader context, going beyond the walls, i.e. the visible borders of our comfort zone, which is an integral part of the city space. Sounds, just like objects, build up the space around us creating an aural landscape, which we perceive multi-sensorially, usually overlooked by us because it is habituated and we do not think about it every day, but it plays an important role giving our space character, identity of place, and also influences the memory of it. It is an important part of our lives by defining for us our place in the space of the city, the home, the universe.

The role of sounds is of great importance in the world in which man functions. Often tamed, treated as insignificant and invisible, they build us specific places, both those in public space and those closest to man - spaces to live in. They have an enormous impact on the emotions and character of these places and the values associated with them. Thus the auditory sphere of places of habitation - permanent (home and surroundings), and temporary (staying, e.g. at a railway station, in a gallery, park is also an element of inhabiting a given place), creates an important and inseparable element of the soundscape of a given place. It is an important acoustic phenomenon in the experience of that space.

KEYWORDS

inhabitation ; sound ; audiosphere ; space ; city ; place ; home ; comfort ; discomfort ; sound absorber ; auditory networks ; audiosphere density

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Jan Matejko Academy of Fine Arts in Kraków

Audiosphere of inhabited space

SOURCE:

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Sound landscape of the place

WThe multitude of stimuli which reach us from the outside world shape our individual perception of the world. It is therefore obvious that we experience and feel the city polysensorically. The audiosphere of urban space is an unusual and diverse collection of acoustic impressions that form our surrounding space. It is a multitude of sounds, hums, voices and vibrations, which we perceive subjectively, making us aware of the peculiar character of places.[1] Urban spaces are networks of infrastructure, sounds, relations of both places and people living in them. They are like constantly developing tissues, which are supposed to have a positive influence on the social life of the city, to influence and shape our senses and ourselves. Man as a rational being shapes his space around him.

[1] Robert Losiak, Renata Tańczuk, *Pejzaż dźwiękowy miejsca zamieszkania w doświadczeniu Wrocławian*, Wydawnictwo Uniwersytetu Śląskiego, Katowice 2015, Studia Etnologiczne i Antropologiczne, p. 193

According to Yi Fu Tuan (*Space and Place*)[2], who differentiates and presents in opposition both terms of **space** and **place** in his considerations, defines space as abstract and indefinite, vast and untamed. The sense of space is made through the sense of sight and touch, but the sense of hearing also plays an important role in experiencing urban spaces, helping us to know and experience our surroundings. Yi Fu Tuan, on the other hand, defines place as being close to man, intrinsic and of great value and importance to his being. It is built, and above all, identified and inhabited by man. It is his habitation place.

According to the dictionary, the meaning of the word **city**[3] from the Slavic language means "*place*", i.e. a settlement unit characterised by dynamic buildings and a high density of people. The diversity and opportunities offered by a city encourage development and the establishment of contacts between people. Thus, one can see how close the city and the place are to each other. Man organizes and shapes a separate place from an indefinite space of the aforementioned Yi Fu Tuan, where complexes of buildings and streets are created. A space of interaction in which sounds, objects and the environment influence the human psyche.

Heidegger, on the other hand, sees the essence of habitation in building in his essay *Budować, mieszkać, myśleć*[4]. While various buildings not always associated with habitation such as a bridge, a railway station or a market hall, they are nevertheless a temporary habitation of the human being. If we refer to the original meaning of the German word *buan*, "to build" it means to dwell, to stay. Heidegger also says that place has a strong connection with a thing[5], which by designating its position creates a spatial area. Thus this thing constitutes a place in great detail rather than in general, thus emphasising its subjectivity and relativity. A place is a concrete space always existing around a person, filled with content, close and familiar. The essence of inhabitation is the centre around which man orientates himself. Thus, habitation begins at the moment of construction and is not limited to the walls of the house - it goes beyond this space.

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[2] Tuan Yi-Fu (1988). *Przestrzeń i miejsce*. Transl. A. Morawińska. Warsaw: PIW.

[3] https://pl.wikipedia.org/wiki/Miasto

[4] Martin Heidegger, *Budować, mieszkać, myśleć*, Teksty : teoria literatury, krytyka, interpretacja nr 6 (18), 137-152

[5] Hanna Buczyńska-Garewicz, *Język przestrzeni u Heideggera (cz.1)*, RCIN

Such a space full of relations, multidimensionality, which orientates man around objects that define him, is his place of residence. This is not a term limited only to man's closest intimate sphere, i.e. the home, his place of refuge, but also his closest surroundings - the space in the city. Man inhabits it also by staying for a while, moving around. We can feel safe everywhere, "at home", if we achieve a state of security in a given space. The inhabitable space expands through our experience of it, becoming aware also of the identity of the place and the associated auditory sphere, we will be able to tame such a space and feel comfortable in it.

Audial networks

The term, first used over 50 years ago by Alvin Lucier, has given rise to a new concept of the of the acoustic environment as a study area or site with all its attendant circumstances.[6] Explaining after Robert Losiak in „Malowniczość

pejzażu dźwiękowego…" quoting a statement by Raymond Schafer, a Canadian composer, who continued to spread the notion of *soundscape*, which, according to him, "(...) the *notion of soundscape, regarding it as a specific sound environment ("a separate acoustic area"), subject to research*.(...)" he explains that the audiosphere is experienced individually, also in the aesthetic context, as "pleasure" or "pain" in the perception of environmental sounds. However, human experience can also depend on perspective, as confirmed by Barry Truax's definition, which states that soundscape is the *sound environment* as perceived by an individual or a community, so that it is supra-individual in nature and depends on the relationship between recipient and any sound environment.[7] Soundscape in the context of landscape is understood as a culture-creating process[8], through the attribution of meanings and values that are expressions of intersubjective image experiences, which are given individually but relate to community experiences. One could compare the relation of the recipient with the sound to the one that takes place in man in relation to his existence in the world. We experience it with all our senses, and the recording of sound, music becomes materialised in a specific space-time, in a landscape of sounds the collection of all the

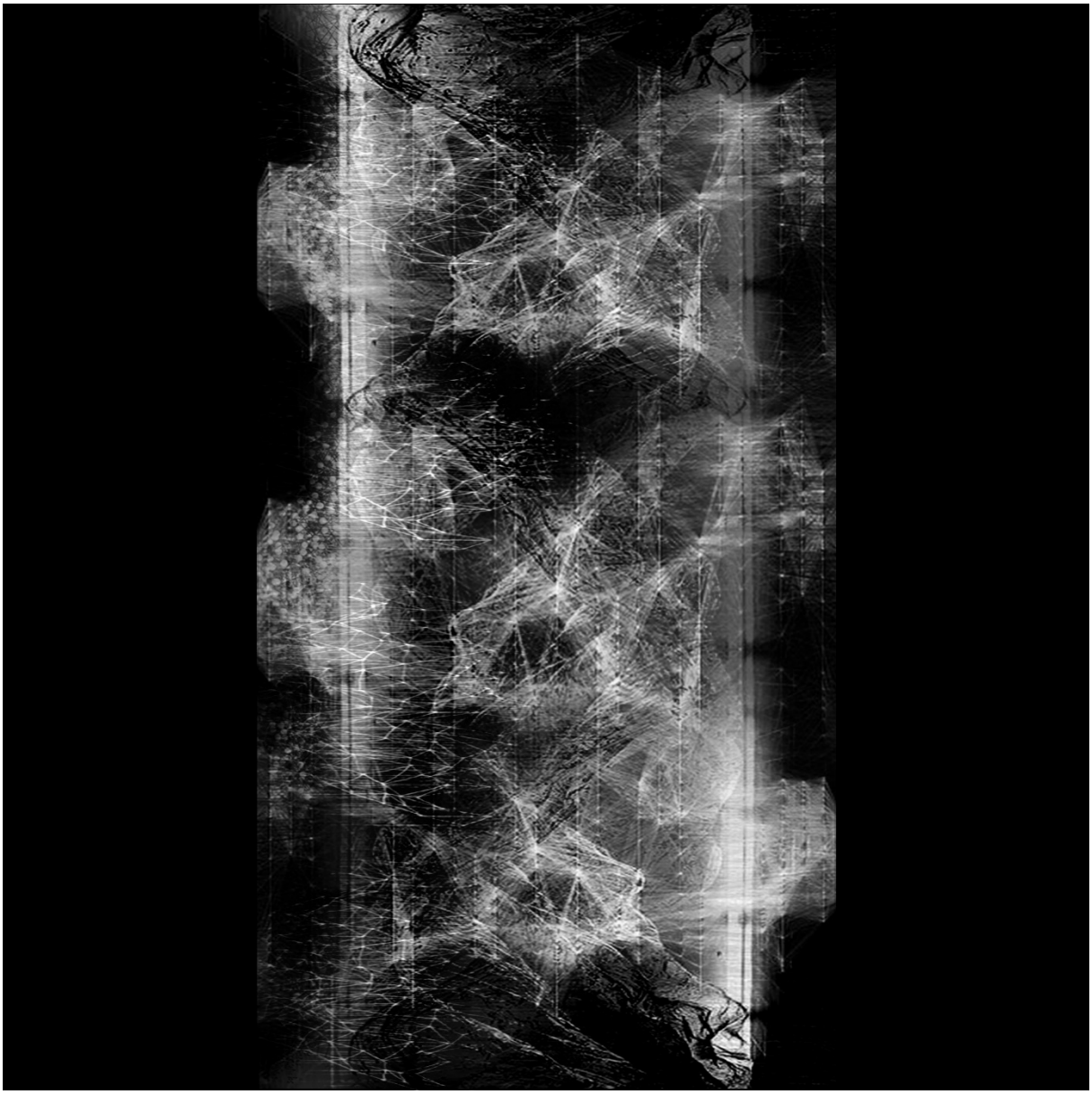
[6] Marcin Dymiter, *Pejzaż dźwiękowy*, Instytut Pejzażu Dźwiękowego, http://ipd.org.pl/pejzaz-dzwiekowy/

[7] Robert Losiak, *Malowniczość pejzażu dźwiękowego. O pewnym aspekcie estetycznego doświadczenia audiosfery*, Teksty Drugie, 2015, 5, str. 46

[8] Robert Losiak, *Malowniczość pejzażu dźwiękowego. O pewnym aspekcie estetycznego doświadczenia audiosfery*, Teksty Drugie, 2015, 5, str. 47

components experienced when experiencing the space of a place. The way we perceive it is determined by that particular physical space.

Interpretations of audial networks, author: Kaja Czajczyk



Source: author's archives

The sense of sight is considered the most important, it allows us to assess a situation, to order space, to release emotions in us. Without a doubt, sight is the dominant sense, like a radar, thanks to which we receive information, see colours, signs, symbols, and move around in space. In conjunction with the brain, it projects the most beautiful images to us. But what would a picture be without sound? When we watch a movie without sound, we find it unattractive and unclear. Sound builds images for us, imagines them. It is similar with landscape. At first we perceive it with our eyes, not realizing that it is the sounds of the surrounding reality that are an important element of this space and build us an image full of audiovisual aesthetic sensations. The sounds give the character and uniqueness of the place, but the sound image is constantly changing, it is alive, therefore our perception is different every time, it updates itself, it also changes depending on our interaction, focus of attention. The environment evolves, changes, so do we and our consciousness, therefore the fact of perceiving sounds is unique and individual. Sometimes, or even often, we do not realize that conscious listening and perception of sounds does not need an image, that we can treat sound as a carrier of musical information. Sound is pure content.

Sound absorber of the city

> *„We shape our inner space in the likeness of music, its polyphony. And at the same time, music creates in us spaces within which we move."*

Szymon Uliasz in his essay *Muzyka i przestrzeń* [*Music and Space*]. Places without borders draws attention to the essence of music in architecture, which over the centuries has left its mark on culture and tradition and had a significant role in its reception. We very often associate places with sounds, completely subconsciously, we recognise them through previous experience, through taming things nearby. Their location in space and dependence on our perception makes them close, which Sz. Uliasz mentions, quoting a fragment of Bogdan Pociej's text *O przestrzenności dzieła muzycznego* [*On the spatiality of a musical work*], in which the author prejudices the work, which has its sound, density and mass. Uliasz seeks references in musical compositions to places as memories which are described ... *spatially by means of sounds like literary narratives arising from impressions* [9]… Landscape in the sense of a musician is nothing but a record of the memory of a place. It is another spatial record that becomes an improvisation, a momentary but timeless form.

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[9] Szymon Uliasz, *Muzyka i przestrzeń. Miejsca bez granic*, Inne przestrzenie, inne miejsca. Mapy i terytoria, Wydawnictwo Czarne, Wołowiec 2013, p. 89

The space of music of a place of residence can also be considered in the category of dreams,

spiritual existence. Marianna Michałowska in *Kształt niezamieszkania*[10] quotes

Gaston Bachelard's thought, , who metaphorically treats a house as the shelter space of a shell The shell is not only a sound absorber, a resonator, inside of which sounds from the environment, e.g. the wind, are collected, so that the air particles from inside intensify and amplify the sounds, and are then reflected. The individuality and diversity of the shells means that each one has a different frequency, making it unique, with sounds of different pitch. The inside of a shell, therefore, can be compared to our safe world, which is home. Each different, specific, around which our memories are centred. Through imagination and childhood memories, we can inhabit different places, intermingled in our dream sphere, which are full of sounds, smells, colours accompanying a given moment. Recurring memories allow us to move to the inhabited space, the intimate one, as well as the one we inhabited 'temporarily', which are built through ephemeral sensual phenomena.

[10] Marianna Michałowska, *Kształt niezamieszkania*, Formy zamieszkiwania. Publiczne i prywatne przestrzenie miasta, Uniwersytet Artystyczny w Poznaniu, 2010, p. 11

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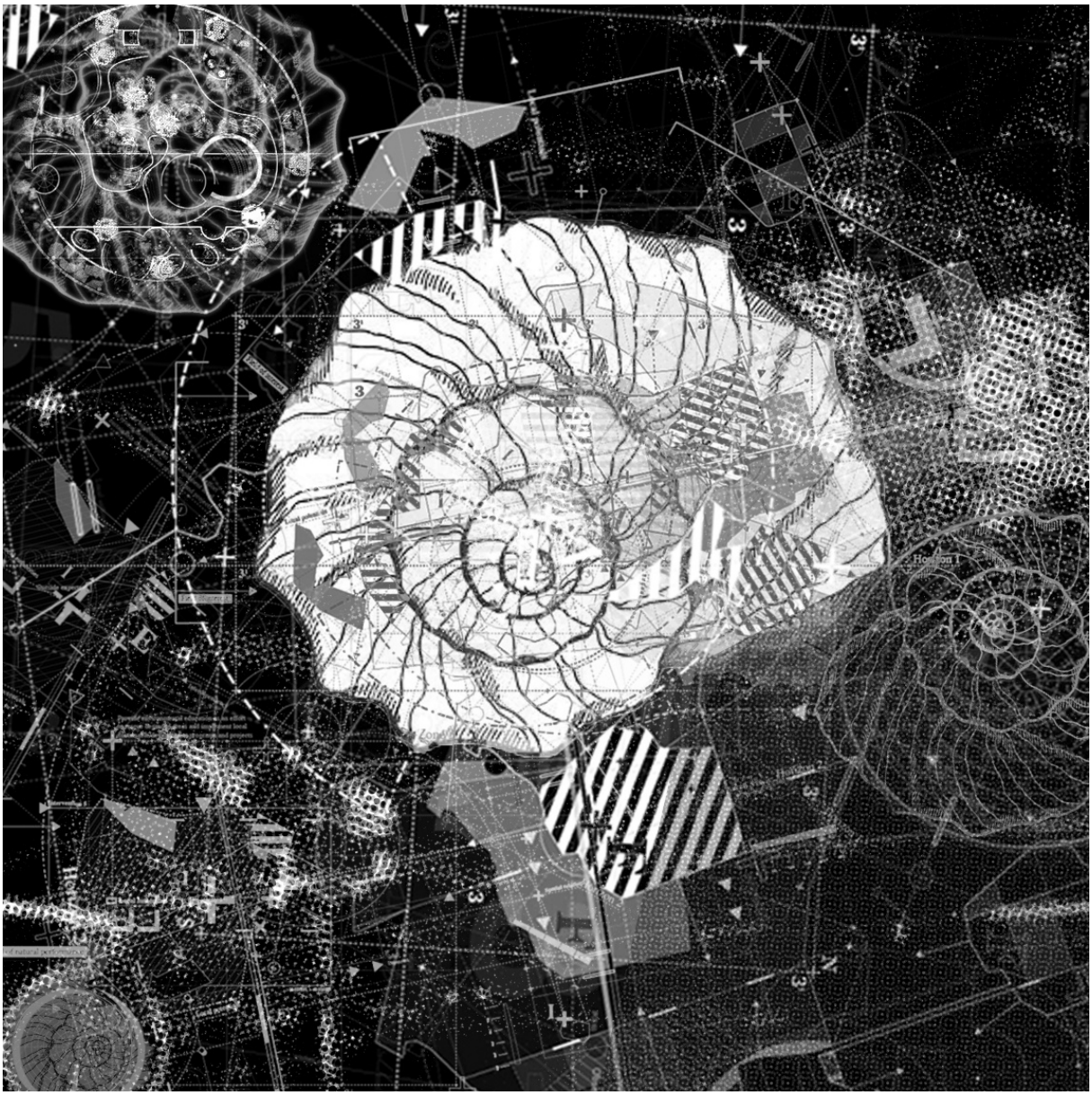
The Sound absorber of the city, author: Kaja Czajczyk



Source: author's archives

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Density of the city's audiosphere

The city is a collection of buildings, streets, human emotions, it is a network of information, signs, symbols, including sounds, which fill and build our space around us. The sound of a city is very diverse, as there are both sounds, e.g. of nature, classified as pleasant, and unpleasant, negative ones, e.g. the sound of a passing train, which are troublesome. Most often we associate cities with noise, which can be regarded as environmental pollution, both external and internal. The intensity of ambient sounds, through their acoustic properties, stimulate our senses to the point of physical sensation of pain. This is why we divide our sensory experiences into pleasant and unpleasant ones. Noises and vibrations resulting from a bustling city have a huge impact on the comfort of our homes, green spaces and private areas. Density of development, reduction of distances between buildings affects acoustics and sounds, so that the emission of technical noise or traffic noise resulting from the intensity and density reduce our quality of life.[11] That is why we often, if we have the possibility, when looking for places to live, choose areas away from the centre, on the outskirts of cities, because the amount of sound stimuli accompanying us every day with every activity, affects our living conditions and comfort. Depending on where we live, the occurrence of sounds and their acoustic character varies, and they may violate our intimacy and sense of comfort in private home spaces.

[11] Jacek Nurzyński, *Zagadnienia akustyczne w kontekście równoważenia rozwoju w gospodarce przestrzennej i budownictwie*, Prace Instytutu Techniki Budowlanej, Kwartalnik nr 3 (135) 2005, p. 46

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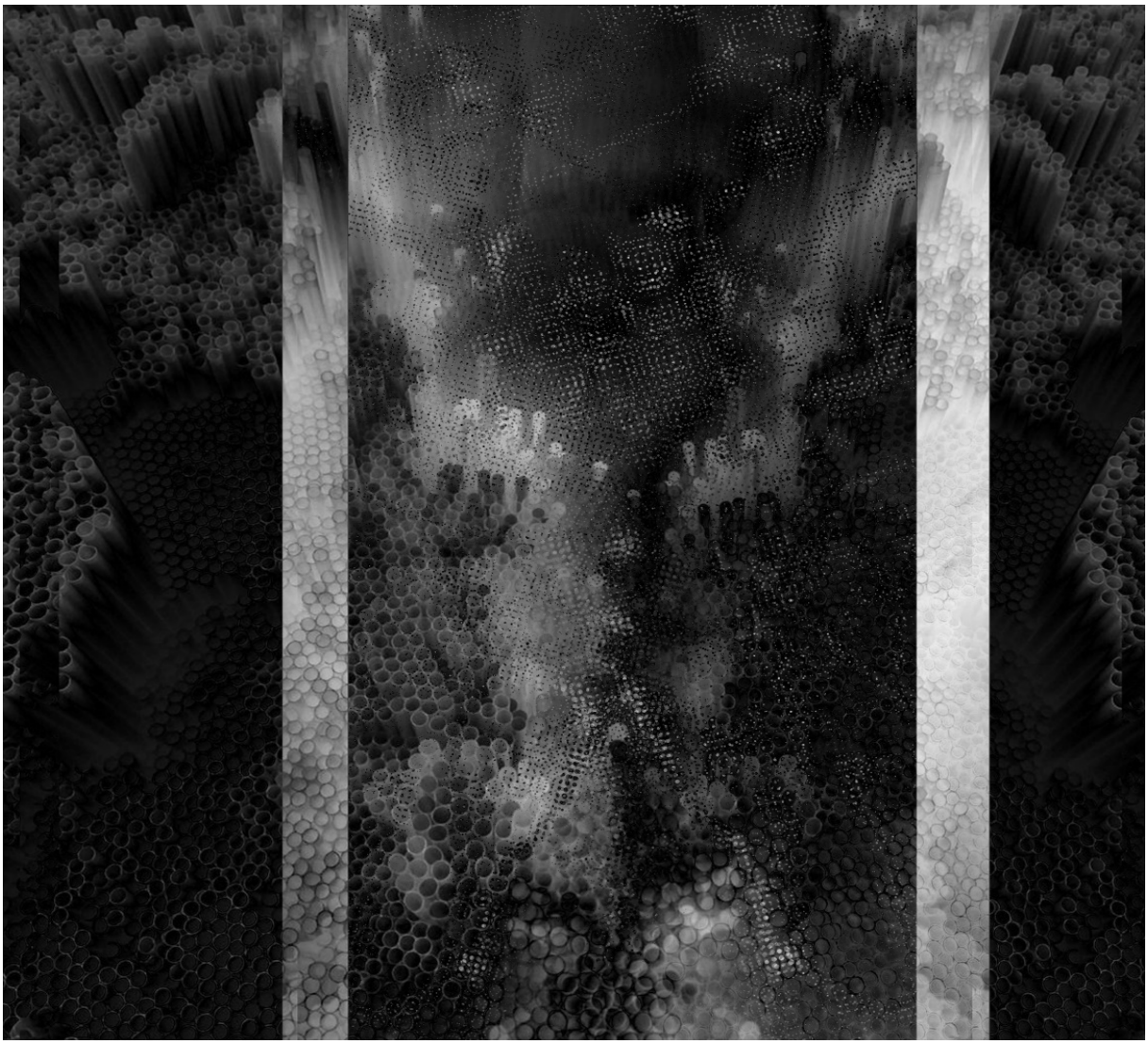

Source: author's archives

We inhabit not only our homes, but the interiors of cities, which do not exist without sound, people and nature. And they do not exist without architecture. These two relationships, which complement, shape and absorb each other, give us the opportunity to feel and experience the city's phonosphere filling the spaces between structures. Urban space is a complex and multi-layered organism that is constantly subjected to various processes. The city is the place where we live, work, spend time and develop on various levels. We choose and tame our place of residence with its spatial and functional values, which force us to behave in a specific way, and which translates into our

emotional relationship with the environment we live in. The acoustics of a place also has a great influence on the choice of our space for permanent or temporary residence. The amount and variety of sound stimuli that reach us from the environment litter our perception of space. We hear not only the sounds of nature but also those produced by technology.

Research on sound in urban space or the phenomenon of echo, depicted in the form of engravings, which was conducted as early as in the 17th century by a Jesuit, inventor and constructor Anasthasius Kircher, became an inspiration for Katarzyna Krakowiak[12], the author of the Polish Pavilion at the Architecture Biennale in Venice in 2012. The project entitled „*Making the Walls Quake…*" is a specific *sound sculpture*,[13] which is a response to the ecology of the audiosphere of public and private spaces, where sounds mix and blur the boundaries between these zones. The idea of the installation was to create an architectural space built with sound, which will draw attention to the problem of acoustics in the interior by shaping, reflecting or deforming sound, analogically to the experience we gain by hearing others and being heard by others. Architecture, which should guarantee us "inaudibility" and intimacy, in fact intensifies sound co-presence in this residential or public architecture.

The closest space to a man

The domestic space is the most intimate, private and close to man. Tamed, filled with the emotions of its inhabitants. And the space around the house - is an extension of the living space, being its inseparable part, so it also influences and is influenced by "emotion". Around our residence there is a specific audiosphere, characteristic, phonically recognisable in its message, evoking subjective aesthetic sensations. Characterised by a multitude of sounds, which we can resolve, according to S. Pietraszko also in the ethical contex[14] - because the soundscape is also semiotically characterised. Recognizable and present in the urban space sound elements, such as church bells - are sound symbols. And architecture is a carrier of memory, to which we assign meanings, roles, it evokes certain associations.

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[12] Agata Janikowska, Instytut Kulturoznawstwa, Uniwersytet Wrocławski, Katarzyna Krakowiak, Andrzej Kłosak (red.),
Słuchawy. Projektowanie dla ucha, Fundacja Bęc Zmiana, Warszawa 2009

[13] https://zacheta.art.pl/pl/e-sklep/katalog/making-the-walls-quake

[14] S. Pietraszko, *Studia o kulturze*, s. 109, AVA Publishers, Wrocław 1992

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The Invisible in the City Space, author Kaja Czajczyk

Source: author's archives

Our private space is limited not only to the closest one, the so-called "air bubble”[15], which according to Robert Sommer's definition is an unchanging space of fixed dimensions that we do not

[15] Marta Cobel-Tokarska, P*rzestrzeń społeczna: świat – dom – miasto,* Krótkie wykłady z socjologii. Przegląd problemów i metod, Wydawnictwo Akademii Pedagogiki Specjalnej, s.52

allow others to cross. Our intimate surrounding space is full of phenomena, objects, sounds that build our comfort zone. A house, which in its definition is a habitation place associated with warmth, security, releases as well as produces its own characteristic and individual sounds, which create a semiotic image of our home. These are auditory performances that are the sum of the sounds of the exterior as well as the interior.

> *„However, it is an acoustic house. You can hear not only the upstairs. But also other people. From the side or under the floor. For four weeks you couldn't hear, and now they must have come back from their summer holidays. Talking for two days. Especially one family can be heard: women and children. In the morning they tell stories, in the afternoon they tell stories. Not much radio or television is heard. Yesterday there were some songs, a lot of tapping somewhere and on the stairs. Name days with the singing of* Happy Birthday.*"*[16]
>
> Miron Białoszewski „*Chamowo*"

In his notes, Miron Białoszewski very aptly described the experience of an acoustic home. The sounds in the space of a block of flats have a huge impact on his sense of comfort and the feeling of living space, as this private zone becomes oppressive, even difficult to accept. The very term 'acoustic' stands in opposition to the meaning of the word *home*. In the case of a place to live, it brings with it negative emotions, and makes us not want to live in such a space. The sounds coming from the neighbours increase the feeling of "*not being at home*". The environment makes the flat not really mine, it is not an oasis of peace, and the communication zones - the common spaces are constantly disturbed by the noises of other inhabitants and, although they belong to the collective space, they become an integral part of our private space, even though we don't want them to. The boundary between the private and the public zone is blurred, and the term associated with cosiness and a sense of security is no longer real. Our intimate zone is constantly being violated, disturbed by sounds coming from beyond, which disturbs the private space, and the walls are only visible borders, not acoustic ones. The co-presence of others in our audiosphere becomes tangible.

Audiosphere of inhabited space

The inhabited space should be considered more broadly, going beyond the boundaries of the private zone and considering it more in the context of a place of residence that is part of the city. Conducting a survey among the inhabitants of Krakow concerning the sounds associated with

[16] http://topo-grafie.uw.edu.pl/miron/chamowo/blok-mirona/akustyczny-dom-dzwieki-w-przestrzeni-blokowiska/

experiencing the audiosphere of their home and place of residence, I became convinced that both physical and auditory comfort are inseparable elements, and sounds are an invisible, constant component co-creating and significantly influencing the character of a given place and its experience. Respondents described in considerable detail the sounds associated with the neighbourhood in which they live, both the sounds of the city and those more subjective, resulting from living in houses and flats. It was important for me to draw the inhabitants' attention to what is natural and trivialised in everyday life, that we do not notice the presence of certain phenomena.

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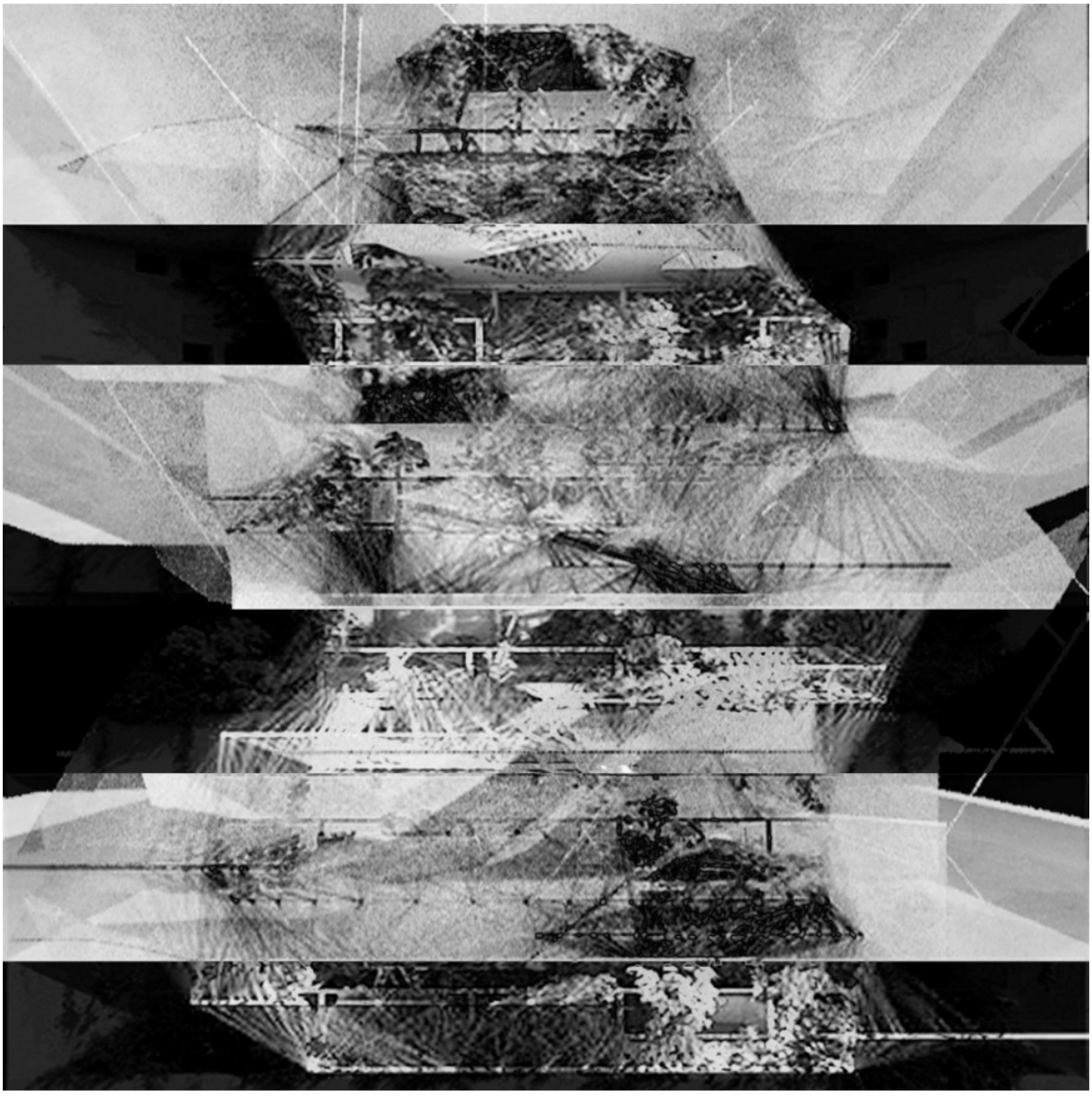
The audiosphere of inhabited space, author: Kaja Czajczyk



Source: author's archives

Being aware that the inhabited space is shaped and co-created by the activities of its inhabitants, resulting from the experience of this space, as well as the permanence of relations between the inhabitants and public buildings and objects, it gives us a fundamental principle of feeling safe by taming the external world, as well as our private, intimate one. Therefore, by directly experiencing the sphere of inhabitation, the sensory perception of space is more emotional and represents an

important value for the residents, which was noticeable in the answers to the questions about comfort and discomfort related to the sounds of the city in their living area.

We are strongly connected to the places of our being, temporary or permanent through our activities, work, social and private life. Like objects, buildings, the soundscape causes a strong bond in our memory. The sounds of a soundscape are specific to the areas where we live, hang out, or walk around, creating the character of a place. Urban sounds permeate, mix and invade our living space creating a diverse and colourful soundscape. Sometimes pleasant, sometimes tiring and causing discomfort, it is a background or orientates us in space. When asking the residents of Krakow if the sounds of the city space influenced their choice of location, the answers were very divided, some people clearly stated that they did not like silence and preferred the city "noise" so they chose to live in the city centre, while many people suggested that the influence on their choice of location due to sounds was "Very great. I appreciate the peace and quiet from the hustle and bustle of the city centre". When asked whether sounds disturb or help in everyday life, they replied that the noise associated with Krakow's life does not bother them, they like the bustle of the streets, they are used to specific sounds which are unnoticeable, and the pace resulting from the rhythm of city life even drives them to action. The answers show a gradation of the intensity of sounds in relation to time of day and lifestyle. Respondents indicate that these sounds can be problematic at night when they fall asleep or when they work at home - then they look for silence which is good for concentration and relaxation. They are bothered by noises from neighbouring flats, which take away the intimacy of the residents and increase the feeling of "strangers" in our comfort zone, loud music from cars or shouting in the street. However, they cannot imagine the city without the sounds that build this space and identity. Total silence would be unbearable, and sounds give them a sense of security.

„When I close the window I want silence to surround me. I associate this with comfort”

The space of the house being the centre of 'our universe' and closest to us, we subconsciously extend this beyond the visible boundaries of the walls of the house or garden - all the way to the immediate neighbourhood. Among the answers concerning the sounds that make us feel "at home", the answers expressed that the experience of the audiosphere reaches further and is not limited only to the area of the house/apartment enclosed within "4 walls". It is not only related to the sounds of the inhabitants, such as "*...the bustle of the household, the dog walking around the flat*", favourite

music, the murmur of the television or the coffee machine, but the essential sounds of the landscape that give identity and a sense of rootedness are the sounds of nature, such as the rustling of trees, birdsong, the sound of water, the silence resulting from nature. These terms can be seen as aesthetically defining the soundscape of a place of residence , quote: "*the singing of birds, the sound of rain, the gentle hum of the city, the sounds of children playing in the yard coming from afar*". Analysing the statements, the comfort of living identified with sounds is most often the epitome of peace and quiet, quote: "*Silence with the windows closed, pleasant music, sounds of home life*", attention was also paid to the division of the sensation of the environment through sounds: gentle and rhythmic having a soothing and calming effect, noisy ones make us irritable and feel bad. Inherent in the comfort of habitation are the sounds of nature, while those indicative of the auditory character of the city space inhabited are more associated with discomfort - busy streets, car noises, ambulance noises, the ringing of church bells, or the bugle call from St. Mary's Tower. The main reasons for the feeling of sound discomfort among Krakow residents were given as the location of their place of residence - busy streets, proximity of tram or train tracks, ambulance noises, but the most common unpleasant experience is the sounds coming from the neighbourhood, presented as unacceptable and tiresome, affecting our intimate space, which results in the way we perceive our living area.

"Being at home" means accepting all the sound elements that affect the sense of comfort or discomfort of our habitable space. The auditory environment, less, sometimes more consciously perceived, constitutes the essence and individuality of our habitation place.

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KRYSTYNA PAPRZYCA

PLACE AND COMMUNITY OF PLACE IN THE STRUCTURE OF THE CITY?

SOURCE:

Places of meetings – afterimages : interdisciplinary workshop (Miejsca spotkań – po-widoki: interdyscyplinarne warsztaty), B. Gibała-Kapecka, T. Kapecki, T. Wesołowski, Krakow 2015.

ABSTRACT

Capitalism has radically changed people's attitudes. A fundamental transformation in the sphere of human values and attitudes, a new attitude towards nature, is causing a change in man today. Man is constantly living in a world of "places". Taking care of the human soul becomes the most urgent issue. Continuous human development is a synthesis of **to have or to be**[1]. The article focuses on the need to improve the quality of many places, the relationship between man and the urban environment. This is to be done by way of increasing and improving the utility, cultural, emotional, aesthetic values of places, creating places that are adaptable, safe, known, and recognized as one's own – all of this in order to create conditions for human identification with the place, a sense of human responsibility for the environment, to create, in places, a variety of forms of social life, and social activities all of which make it possible to meet people, form opinions, make acquaintances, or carry out tasks. In the places, an important task is to create a "spirit of the place" as a determinant of urban-architectural impressions, by introducing symbols and signs, which are understandable for people living in a given place. The resurgence and rediscovery of values and places – both in the cultural and spatial and social terms – are positive responses to globalisation and unification of space.

[1] E. Fromm, *To have or to be?*, Dom Wydawniczy Rebis, Poznań 2012.

KEY WORDS

place; quality and value of places; people; humanisation of places

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Place and Community of Place [2] in the Structure of the City?

SOURCE:

***Places of meetings - afterimages: interdisciplinary workshop (Miejsca spotkań – po-widoki: interdyscyplinarne warsztaty)*, B. Gibała-Kapecka, T. Kapecki, T. Wesołowski, Krakow 2015.**

Introduction

Shower [man] with all earthly goods, plunge him into happiness up to his noseholes, so that only the bubbles pop on the surface of happiness as on water; create for him such material prosperity that he

[2] Community (after: *Słownik języka polskiego PWN*, sjp.pwn.pl/sjp/wspolnota;2537996.html)
1. "being marked by common characteristics, having or experiencing something in common";
2. "what unites, unites";
3. "a group of persons bound together by common descent, common culture or common interests, common property".

has nothing else to do but sleep, eat delicacies and take care of the continuity of the universal history […][3].

Modern man is fascinated by the development of technology, science and engineering. He has built a system of production which leads to the destruction of nature and the "man himself". Today, as never before in history, man has an influence on the nature of spatial structures in cities, the manner, style and quality of life in them. Meanwhile, he lives in a trap, thinking that prosperity will help solve all the pressing problems on Earth. The pursuit of prosperity is evident in the unprecedented growth of cities, which results in a poisoned environment, the pillaging of resources, the uncontrolled development of many cities and many other phenomena.

Getting rich has become the overriding aim of man and the world. Globalisation, privatisation, deregulation of financial institutions and market forces have become phenomena over which man no longer has any influence. The effects of these phenomena are the devastation of public resources, the spread of differences between extreme poverty and wealth, and the result is the "fall of man", his failure to see the meaning and purpose of life and the loss of his value system.

The philosophy of materialism and the global consumer culture are gradually leading to the decline of the “public man”[4], the collapse of the public culture, and thus the **collapse of community**. “The new coming world”, the new reality has a huge impact on the sense of social engagement in places, in urban spaces, also on our safety, our perception of the reality around us. Relationships with the places, objects, people around us are becoming increasingly fleeting and short-lived. We are moving away from people, fascinated by prosperity, science, research. Population growth and the growth of wealth, consumption, their scale, are in clear contradiction to human nature.

Future changes can have serious psychological and sociological consequences, which are reflected in the shaping of places in urban spaces. People still have a certain freedom of “choice”. They should be aware of these changes. Otherwise they will experience a “future shock”. The “future shock” - is what Alvin Toffler calls “the shocking stress and disintegration that engulfs people exposed to too much change in a very short time”[5].

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[3] J. Baudrillard, *Społeczeństwo konsumpcyjne, jego mity i struktury*, Sic!, Warszawa 2006, s. 5; cyt. za: F. Dostojewski, *Notatki z podziemia; Gracz*, tłum. G. Karski, Puls, Londyn 1992, s. 28.

[4] R. Sennett, *Upadek człowieka publicznego*, Warszawskie Wydawnictwo Literackie MUZA, Warsaw 2009.

[5] A. Toffler, *Szok przyszłości*, Wydawnictwo Kurpisz, Przeźmierowo 2007, p. 8.

The city has always been built for people, being a centre for active social life, experiencing contacts and interests. Towns and cities have historically been a coherent whole, integrated into the landscape and built on rules, which have been created over millennia. They were a refuge for people living there from generation to generation, rooted in place. Ethnic identification was one of the characteristics of the formation of spiritual values, of spatial and social selfhood. Places shaped space. The atmosphere of a place, the smell, taste, sound or images still have many spiritual meanings for the receiver of space (photo 1).

“Life” and “dwelling” of a man in space - in a given place - gives him a certain dynamics and value. Man provides places with drama, romance of experiences, experiences of emotional, aesthetic, spiritual, utilitarian character, etc. Man connected to a place uses the advantages of given places - but also their disadvantages - to shape himself. Because places determine our behaviour (photo 2).

Many European cities and towns from the past (e.g. Italy - Alberobello, Miranda, Gubbio, Calascio; Greece - Santorini, Amorgos, Paros, etc.) have retained their personality, are pleasant places to live, and are popular to visit. They are places where people breathe fresh air, create and promote local arts and crafts, serve traditional dishes, shops sell local products. People who live in such places identify with them very well.

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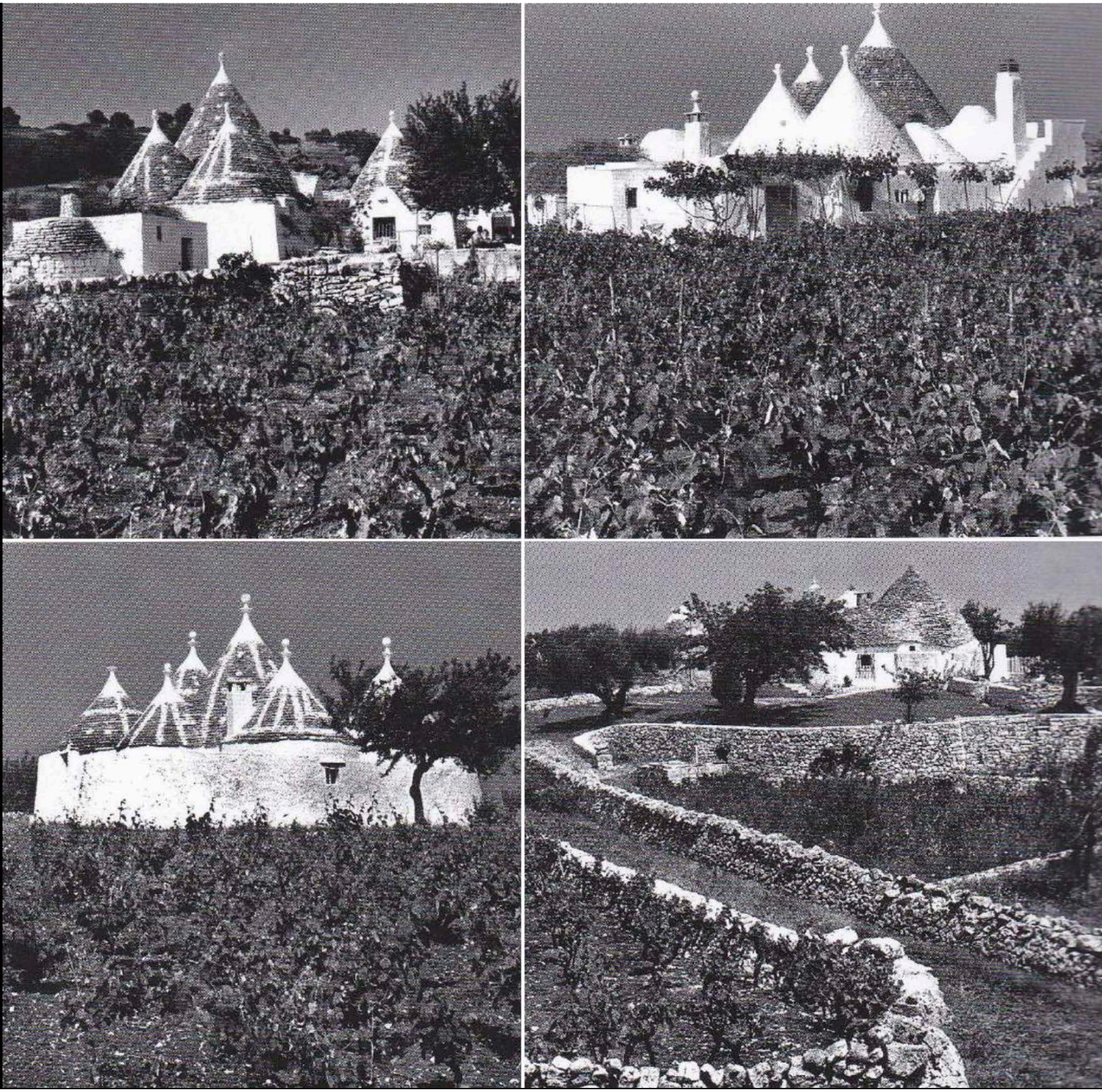

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Fot. 1. Alberobello (S. House, C. House, *Mediterranean Villages. An Architectural Journey*, The Images Publishing Group Pty Ltd, Australia 2004)

Territory - places

Man makes independent choices in his life, including about places. He thus influences who he is and expresses his freedom in this way. The humanistic motive manifests itself in man as a motive for existence. Hence the important role of places in human life especially places to live. There is no predetermined human nature.

The essence of a place is its qualities: spirituality, individuality, but also uniqueness. Places often have cultural values that are timeless and of intrinsic value. They are important places in our everyday life. They are the object of long lasting and intense human-place interaction. The cultural

values of a place are a source of identification for people, integration of groups and communities. Cultural areas - places, are a condition for the existence of a community of places. They play an important role in the existence of collective forms because it is in them that the processes of communication of the selected material and symbolic values take place. There are no identical places. Places themselves carry their own dynamics resulting from the unique, individual characteristics of a place. The cultural-semiotic features themselves carry a need for stability. They are the object of a long lasting and intensive interaction between space, place and man. They are spaces of "our common experience", they are spaces of places.

Two basic characteristics of a place should be distinguished. These are: the **structural components, also called the internal components** of a place, and the **environmental components**, called the external components of a place. The lack of mobility of a place means that it is strongly connected to its surroundings, to the place in question. The environmental components include: the characteristics of the location and the characteristics of the neighbourhood.

The context of a place can create a scene that is enriched by distant perspectives, enlivened by views of the sea and the azure sky. Location, climate, terrain, surroundings once had an impact on the urban fabric, places, but also on buildings, their appearance, character, material, detail.

T**he physical elements of a location - the natural features of a place -** contribute significantly to the attractiveness of places, making them unique, distinguishing a place/location.

The physical characteristics of a place, the neighbourhood of a place are man-made characteristics[6].

The neighbourhood of a place is the space that has a multidimensional character and surrounds a place. It consists of tangible and intangible objects as well as people and animals. The neighbourhood tells us about the surroundings of a place, the location of a place in the inner city or in a villa district or in the suburbs. It also tells us about the quality of a place, its man-made environment, and its architectural and cultural features. Depending on the character of the neighbourhood, we may hear street noise or birds singing, we may see the walls of a factory, a scraped wall of a neighbouring building or admire a beautiful view of the sea, mountains, forests, landscape. We can breathe in the stench of a nearby factory, industrial plant or air pollution from the street, or smell the forest.

[6] K. Paprzyca, *Harmonizowanie rozwoju urbanistycznego terenów miejskich – wybrane zagadnienia*, Monografia, no 417, Politechnika Krakowska, Krakow 2012.

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Fot. 2. Alberobello (S. House, C. House, *Mediterranean Villages. An Architectural Journey*, The Images Publishing Group Pty Ltd, Australia 2004)

Prawdziwa architektura jest tylko tam, gdzie w centrum jest człowiek z jego wszystkimi tragediami i komediami.
[Alvar Aalto]

The spatial order and the architectural qualities of the neighbouring buildings are not negligible in places. A neighbourhood offering more green areas, with dead-end streets in an irregular grid is very popular with its residents and provides a varied visual experience.

The urban spatial structure is considered as a spatial configuration; the arrangement and layout of streets, the physical dimension of urban drawing concerning the size, shape of urban forms, land use, shape and distribution of open spaces, which constitutes the physical characteristics of a place. The urban spatial structure is important for the traffic system: pedestrian traffic and roads leading to services, work; it is important for the functioning and activity of a place in a district or city; it affects the access to jobs and services.

The qualities that determine the feeling of safety in a spatial environment are the legibility and the spatial order; thanks to these qualities it is possible to find a place to live in the surrounding space.

The image of a location, its **architectural and urban qualities**, its cultural **and** historical ambience, are all important for the quality of a place. Poor qualities of a place, of the urban environment, surroundings, or poor technical condition of buildings contribute to the increasing problems of vandalism and hooliganism. Especially the physical surroundings influence the intensity of social contacts.

Offering a **variety of options to use space**, spatial experiences to widen the range of forms of contact between people in street spaces is invaluable. The quality of outdoor spaces in the form of spaces between buildings - streets, squares, parks - increases the out-of-doors activity both in terms of the duration of this activity and its type. It prevents and counteracts the phenomenon of people constantly rushing home and thus limiting their activities outside the home. It prevents social segregation, social exclusion and alienation.

Community of place - differentiation

The city exists for its inhabitants, and man today aspires mainly to develop an individual personality, to become an observer rather than a spectator of events taking place in certain places. This attitude leads to a situation where human contact has become impersonal, anonymous. The unification of life in urban spaces manifests itself, for example, in the replacement of the names of

merchants and craftsmen in the shop windows with brands and mass production, in the absence of colourful, individual clothing, in the personal, anonymous buildings of the tenement houses. The diverse, colourful society disappears from sight and in its place there is a “lonely crowd”[7]. . People rush home in silence, and the street bustle is replaced by silence. Behaviour in public has been reduced to mere observation, without participation in the life of the place. The reluctance to make acquaintances and to speak leads to the withdrawal of people from public life. People separated from each other do not see the need for mutual support and help. The idea of meeting strangers, who play an important role in the process of enriching impressions and experiences, is lost. An impersonal, solitary crowd can lead to the appearance of closed enclaves with people who control each other.

However, a city is inhabited by different groups of people. People constitute the “capital” that makes the functioning of a city – and of the places in a city - possible. The **social capital** is closely linked to a certain territory. The deep relations that people have with each other are mainly between people who live next to each other. The ability of people to cooperate, to organise themselves in order to pursue common interests, as well as to form and meet in groups or social clubs, forms the social capital. Strong ties between people and place can be observed especially among poor people in poor countries, where the material capital does not exist - it is often connected to clan, family or religious communities (photo 2).

Cities that invest in the “**human capital**” are characterised by creativity and innovation (which is the forecast to become the hallmark of the 21st century economy). Richard Florida[8] sees the city as a powerful system connected to the exchange of diverse information, in which the driving force of the urban development are the creative potential and creativity of inhabitants.

Richard Florida prefers a city with places that are open to diversity. Places in the city should attract people, involve them. They should remove barriers to creativity, which he describes as mediocrity, intolerance, poverty, social and economic degradation. Places should aim to attract young, creative, dynamic people who want to change the world. The climate of places is meant to encourage people to express their ideas. R. Florida writes about his book that “the main [character]

[7] D. Riesman, *The Lonely Crowd*, Vis-a-vis/Etiuda Publishers, Krakow 2011

[8] Richard Florida (born 1957 in Newark, New Jersey) is an American scientist, economist, university teacher at the University of Toronto, specialist in urban studies, creator of the term "creative class". In his research work, he focuses on social and economic issues related to urban planning. After: pl.wikipedia.org/ wiki/Richard_Florida

[of his book] [...] is PLACE as an element in our personal lives as well as in the global economy. [...] choosing a place to live is the most important decision we make. It has a huge impact on the job we find, our family, our choice of friends, our lifestyle and quality of life, in fact our overall happiness"[9]. Every person has some talents, we just need to be able to unleash them, to help bring them out. According to Florida, every person is a creative individual.

Talented, creative people are in constant motion. They make up the “human capital”; they need not only places connected to openness, entrepreneurship, culture, science, social connections, but also they need openness to new ideas, views, lifestyles, jobs, interests, passions. This is possible by **improving the quality of places and the quality of life of their inhabitants**.

Man in space - relationships

> Value is an invisible and intangible spirit, it comes and goes unexpectedly while visible and concrete things remain the same [10].

Places in cities have always been the sites where values important to the civilisational development are created: material, cultural, aesthetic-emotional and spiritual. They have also contributed to the processes of: communication, social exchange, identification, information. In the contemporary theories of place-making in urban spaces, **the mutual relations among value-needs-contact-conflict** play a particularly important role.

Urban spaces, that is, places, have specific values that have a significant impact on human assimilation, human behaviour and the use of these places and space. They are divided into:

– instrumental values;

– situational values;

[9] R. Floryda, Narodzina klasy kreatywnej (The Birth of the Creative Class), National Centre for Culture, Warsaw 2010, p. 229.

[10] A. Smith, *Bogactwo narodów*, Wydawnictwo Studio EMKA, Warszawa 2012, s. 26.

– existential values[11].

Once places are deprived of these values, they can never be recreated. Places will be deprived of their vitality - streets, squares, markets - in favour of the increased attractiveness of commercial spaces, places that are “intellectually and culturally empty”.

Chombart de Lauwe writes:

There are the following sources of difficulties:

- a growing sense of insecurity about overcrowding;

- environmental pollution and urban degradation;

- the disappearance of landmarks for orienting oneself in space and the social structure, which is caused by the information chaos and the formalised, abstract organisation of space;

- the inability of individuals and social groups to adapt to the rapid spatial transformations brought about by the technological developments;

- incompatibility between the culturally anchored archetypes and the current ways of creating space[12].

Living and dwelling in a given place, in a given space, in an urban environment, should provide a lot of experiences and should be assimilable for people.

Tange wrote: space is the terrain on which man creates or does physical work, but at the same time this space shapes and transforms man. Architecture and urban planning only fulfil their tasks if they become symbols of human values. I think that many a piece of modern architecture and many a city are devoid of these symbols[13].

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[11] The “instrumental values include the functional character of the space (division into streets, squares, fields, interiors, etc.), the ease of reading the architectural and urban layout and its socially perceived status (old-new, pretty-not pretty, etc.). Situational values include feelings of physical and psychological safety or threat, the possibility to identify with a given space in social and cultural terms, the feeling of openness or anonymity, the possibility to fulfil one's chosen social roles and the opportunity to realise one's own prestige and personality. Existential values include all those that are a source of emotions, provide aesthetic and intellectual impressions and induce us to discover the qualities contained in objects and items of symbolic significance, as well as in the architectural and landscape environment. A. Majer, *Sociology and Urban Space*, PWN, Warsaw 2010, p. 57.

[12] For more details, see: http://www.edukateria.pl/praca/przedmiot-socjologii-miasta-procesy-spoleczne-zwiazane-z-space-society-impact/.

[13] Z. Kósa, K. Tange, *Architektura i architekci świata współczesnego*, Arkady, Warsaw 1977, p. 21.

The senses are a very important intermediary between man and place. From the point of view of a human being as **a receiver**, a given space should sharpen and intensify his or her sensitivity, be helpful in gaining experiences, knowledge, contacts. All the sensations and experiences shape not only the human attitudes, but especially the social values. The **humanistic values of the city**, which shape man, are the most difficult to assess. They concern many aspects: comfort, satisfaction, convenience, aesthetic aspects, perceptual aspects[14]. The humanistic view of the city emphasises the condition of urban space, its beauty. Emotional and aesthetic values, their wide range - monotony, ugliness, power, overwhelm, soullessness and others - act on the human psyche in different ways.

The category of human reception is an essential feature of a place in space, it is a so-called transmitting and receiving act. Between buildings in given places we have the possibility to be with different people, in an independent, non-committal way. This possibility of talking to people, of meeting them, gives us a lot of information about the world around us, about the place, the urban environment, the social environment in which we live and work. It helps us to relate to the world around us, to become connected to a place. Experiencing the presence of people, offers a rich and varied sensory experience, offers a wealth of information, and develops a person spiritually and intellectually.

Dynamic adaptability of places by humans

A very important feature of places is their ability to adapt to diverse functions in space-creating tension between the diversity of people's needs and the diversity of how these needs are realised in spatial structures. The diversity of people is about diversity of age, education, status, income, interests.

The spatial arrangement of the multifunctional purpose and use of a place is an important argument for the potential of a place. Urban areas, places which have a dynamic capacity for adaptation, gather all kinds of people, offering a choice of different types of use. Accessibility is of considerable importance for the development of places in urban areas. It includes: the availability of services, utilities, local transport, the location of shopping and manufacturing centres, recreation, culture, etc.

[14] "According to psychologists, the four functions of the human psyche that determine purposeful human action in space are: thinking - relationships and consequences; feelings - emotions, including aesthetic ones; perception - perception and feeling of reality; intuition - spontaneous perception of moods, also a type of perception". E.Cichy- Pazder, *Humanistyczne podstawy kompozycji miast*, Politechnika Krakowska, Krakow 1998, p. 117.

We need to establish creative places, creative spaces that provide people with more than just pleasure, that are accessible and achievable, appropriate to the cultural attractions associated with the city.

The desire to enforce the meeting of different social groups should characterise places in cities that want to develop. Proximity between people is a moral good. The development of the human personality through contact with people, the experience of proximity, is crucial for the development of the human personality. It liberates the personality and creates expressive people. People rediscover the value of mutual support and direct contacts, which makes the city friendlier for them.

Conclusions

As a result of a series of transformations, capitalism has radically changed people's attitudes. People's behaviour has been separated from ethics and human values, it has become insensitive to human needs and values. The system requires people to be selfish, greedy. The lifestyle is pathogenic, resulting in a sick personality. Only a fundamental change in the sphere of human values and attitudes, a new attitude to nature will bring about a change in man. Man is constantly in the world of “places”. Being in the world, nurturing the soul, caring for the soul become most urgent needs. The continuous development of man is a synthesis of **to have or to be**. The rapid changes which are taking place before our eyes in urban spaces are caused by changes in public life, in people and in the changing, essential needs which are reflected in the use of places. The consequence is a crisis of use of places in urban spaces, places are being recomposed. In this difficult situation it is important to create places that are adaptable, safe, familiar and recognised as belonging - in order to create conditions for the identification of the human being with the place, a sense of responsibility for the surroundings, the creation in places of a variety of forms of social life, social activities, thanks to which it is possible to meet people, form opinions, make acquaintances and carry out tasks. An important task in places is to create a “spirit of places” as determinants of urban-architectural impressions by introducing symbols and signs, which are understandable for the people living in the place. The rebirth and rediscovery of place-related values: cultural, spatial, social ones, is a positive response to the globalisation and to the unification of space.

A revision of the value system and a change of objectives, both directed at the person and his living environment, should become the primary goal of human attitudes. Man should treat “place” as a specific good.

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KATARZYNA STRYSZOWSKA-WINIARZ

MULTIDIMENSIONALITY OF PUBLIC SPACES

SOURCE:

Etyczne przestrzenie publiczne, red. B. Gibała-Kapecka, T. Kapecki, Kraków 2018.

ABSTRACT

By interpreting the landscape, we try to feel the places, to become aware of the space, to feel its openness and infinity. Each new perspective shot opens up a new view. The senses play an important role in defining the spatial situation. As one gets to know a given space, the landscape becomes more 'familiar'. Each pause of the gaze gives time to create one's own image of the place. A well known area becomes a place. Public spaces are places of social contact. They give the opportunity to actively experience space and to meet other people. There is an ethic in the very way we participate in social life. Mutual respect and understanding result from the ability to "read values". Ethical thinking is sensitive to the affairs of others, it is the thinking of man about man. Public spaces inscribed in the structure of the city engage the viewer to make him aware of his own role in experiencing the surrounding reality. The aim of this article is to show the multidimensionality of space, which carries a range of sensations and experiences. A space that is comfortable and looks inviting changes the meaning of city architecture. The abyss of the sea evokes feelings of anxiety and alienation.

The airspace is an immensity of height and an unreachable shell. Places supported by patriotic feelings are an element of identification with a given space. Public spaces provide an appropriate setting for the monotonous fabric of the city.

KEYWORDS

space ; place ; senses ; encounter ; value

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dr Katarzyna Stryszowska-Winiarz
Jan Matejko Academy of Fine Arts in Kraków

Multidimensionality of public spaces

SOURCE:
Etyczne przestrzenie publiczne, red. B. Gibała-Kapecka, T. Kapecki, Kraków 2018.

By giving the surroundings a new quality, it is impossible not to interact with the space. We are in dialogue with our surroundings. Man changes the world, believing that the more he changes it, the better he will know it. Enriching the landscape with new spatial compositions attracts people, brings them together, diversifies and enlivens the surroundings. It provides an opportunity for experimentation for the creative activities of designers and supports various social phenomena related to getting to know, experiencing and valuing new space. What experiences are attributed to spatiality? If space is associated with openness, how is it affected by the presence of other people? What makes a public space a friendly place to strengthen social ties?

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Sensation of space

Fundamental to human cognition is the fact that man synthesizes experience. The development of his spatial receptors - sight and hearing - explains his ability to adapt and make use of past experiences. The term 'experience' is important in view of the various ways of knowing reality and the sense of orientation in a given space. It is an important part of our everyday life. When interpreting a landscape, we try to feel the places, to become aware of the space, to feel its openness and infinity. The senses play an important role in this process, creating a spatially organised world. The sensory organs create spatial qualities specific to each viewer. Different experiences of space thus result in different interpretations of space.

The organisation of human space depends primarily on sight, but the other senses enrich and expand visual space. Sound, for example, dramatises the experience of space, extends the visual perspective to include what cannot be seen, but exists at the back of our minds. Sounds enrich the experience of space, although very imprecisely located, they can give a strong sense of size and distance.

> Human spaces are a reflection of the quality of human senses.

Space is constructed according to the mind's ability to go far beyond the sensory data. Human beings react emotionally to the features of his environment - he finds or does not find liking in it.

A definitional distinction between the concepts: place and space was proposed by Yi-Fu Tuan in his book *Przestrzeń i miejsce* [Space and Place]. We read in Tuan:

> In experience, the meaning of space often overlaps with the meaning of place. Space is more abstract than place. What is at first a space becomes a place as it is learned and given value. [...] The concepts of 'space' and 'place' need each other. The security and stability of place draws our attention to the openness, size and horror of space - and vice versa. Moreover, by associating space with movement, we experience place as a pause: each pause in movement enables the transformation of a situation (position) into place.

Constancy is the essential element of place. Space is transformed into place as it acquires meaning. By experiencing a place and reaching deep into memory, one can find remembered images, landscapes, phenomena. Each recall of these places evokes an intense feeling of satisfaction. Stopping in motion is a necessary condition for getting to know a place.

The quality and intensity of the reception of stimuli by the senses influence a person's spatial abilities and the way they experience space. The field of experience is much larger than the stimuli we perceive. Motor and observational experiences are necessary to identify space. Integrating a vast space into well recognisable places requires spatial skills. Spatial fitness related to our body's capabilities precedes our knowledge. "Man's sense of space is closely related to his sense of self, which is the result of his personal relationship with his surroundings. Man by his presence gives meanings, constructs and subordinates space to a scheme. It is a determinant of directions and positions. Space opens up to the vertical position of man's body, it becomes differentiated according to the structure of his body. As one moves around and gets to know the space, the landscape becomes more "familiar". Each pause of the gaze gives time to create one's own image of the place. A well-known area becomes a place.

A meeting place

Enclosing a space and giving it fixed values therefore creates a place. Both space and place are important in human life, in their daily movement between safe haven and adventure, attachment and freedom. Each new place requires familiarity with the landscape by remembering certain landmarks, getting to know the character of the city. During the process of familiarisation and settling in, images of the surroundings are memorised, which later become habitual and a daily humanised interlude of the day. With time they become commonplace and do not provoke any special reflections, they only come to light when something changes. The unexpected disruption is particularly noticeable when we return to familiar places years later. Changes and constantly flowing time create new places.

Public spaces support different social phenomena and mark places of social contact. They provide opportunities for active experience of space and for meeting other people. The experience of the encounter has an extraordinary persuasive power and is much more than a simple "encounter" with another person. An encounter is an event. Human beings are social creatures; we value company and contact with other people. Each person requires us to acknowledge and behave appropriately. Mutual respect and understanding reveals the full meaning of being with another. To behave appropriately, we must be able to "read values". The meeting of people should include the presence of truth. "All paths of human *ethos* pass through the gates of truth". Ethical thinking is sensitive to the affairs of the other, it is the thinking of man about man. To find oneself in the space of meaning is to find the other person:

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> […] I am in a particular place in the space of meaning, in which besides my own there are also other people's places. Just as the individual word has "its place" in the whole of the sentence, so I "have a place" among other people's places. By knowing what these places are, people can get to know each other before they have even met. We are to each other what our places in the space of meaning make us.

There is an ethic, a social *ethos*, hidden in the very way we participate in society. Ethics is the knowledge of the ways of being of people among people. Each community lives according to its own internal *ethos*, which is a carrier of values, ideas and influences social processes.

Public spaces should be inspiring and attractive to people, so that they find such places at the heart of every community together. This is an extremely important goal when a place becomes our favourite place, an area for meeting friends, where people feel comfortable interacting with strangers. Friendly places where people want to gather and return to again and again. Places that cater to everyone, regardless of profession, education or age, and become an ethical living space.

Many of our streets are not aesthetically distinctive. We often walk through a grey, monotonous space and wish to escape from it. Dull surroundings create a sense of indifference and alienation. The lack of emotional contact with such surroundings creates anxiety. Often public spaces: boulevards, squares, quays change the expression of city architecture by co-creating appropriate surroundings. Spatial enclaves introduce divisions, disturb the uniformity of architectural forms and create fascinating views.

An inspiring spatial solution is Yorkville Park in Toronto (Photos. 1-4), which has been inscribed into a dense structure of modern architecture. The park is divided into 11 sections, referring to different representations of the Ontario landscape. The plant compositions form a harmonious whole through careful spatial arrangement and the use of overlapping textures and colours. The park's main landmark and most distinctive feature is a huge massif of granite rock, excavated from the geological areas of eastern and central Canada. The granite rock invites tactile sensations, kinesthetic experiences, climbing on it and helps users create a stronger connection with the landscape. In another area, a metal structure creates a water curtain that borders a courtyard full of benches and chairs on one side. Prefabricated rings surround the trees and create places to rest. A space that is comfortable and looks inviting satisfies human needs. A sense of comfort is bound up with a sense of security, the availability of seating provides the opportunity to choose a place in different light.

The introduction of simple spatial solutions is to ensure that the surroundings do not distract users, but are a neutral space, a background for events. The application of the "third place" idea fulfils one of the main assumptions of Ray Oldenburg, the creator of the "see and be seen" idea in modern spatial-architectural solutions. Public spaces can encourage different activities and attract many people. It is important to observe the needs of users and create places to concentrate or create a pleasant atmosphere to activate young children to play during the day, places to attract young people after school, places for concerts, cultural initiatives to come in the evening.

Madrid's Pasarela de Arganzuela park (Photo. 5) is a key element of the programme to revitalise the banks of the Manzarnes River. The most recognisable element of the park is the bridge designed by Dominique Perrault. The bridge takes the form of two conical tubes spirally wrapped with metal mesh, which meet at the top of the park hill. Shields stretched over the steel structure protect users from the sun, wind and rain. Shaded during the day, the promenade is illuminated at night, becoming a beacon for its surroundings. The metal mesh gives the structure a variable appearance. Depending on the observation point and the light, it can appear transparent or completely opaque. The sophisticated form of the gate-passage is located just a few metres from the historic Toledo Bridge. Both sides of this symmetrical confrontation form a spectacular whole exclusively for pedestrians and cyclists.

Liquid space

Water is a fluid matter of changeable form. While remaining in a bodily relationship, it can be touched, experienced with the senses. By immersing ourselves in it, we are part of a different environment, we accept its rules. I mean the temperature, the force, the movement, the resistance of the water. Movement is slower in water because of its density. The dark, unsettling water evokes an ambivalent feeling of fear of being immersed in it. It is often treated as an analogy of time. The fluid image of water refers to something impermanent, elusive and constantly changing. Water enlivens public space. Cascades, fountains, water curtains increase the quality and attractiveness of urban spaces.

The phenomenal properties of water, the ability of water surfaces to reflect light, are shown in the works of the Danish artist Olafur Eliasson. The artist focuses on the problem of perception - especially the perception of colour. He often uses water as the medium of his expression. He is particularly interested in the relationship between light and colour. His projects inscribed in the

urban space engage the viewer to make them aware of their own role in experiencing the surrounding reality. We can find fascination with the power of the elements of nature in his works, especially earth, air and fire, interpreted as light, as well as the world of the senses: touch, smell, sight, taste and hearing. The artist experiments with and captures the phenomena in question. The project *Green river series* (photo. 6) from 1998 consisted in dissolving a bright, fluorescent green dye in the Fjakkabaksleid nedri river in southern Iceland, which completely changed the appearance of the water without, however, adversely affecting the natural biosystem. The experiment was later repeated in Bremen, Stockholm, Los Angeles and Tokyo. The dissolved dye looked frightening, but from a different perspective it also looked very interesting against the grey boulders emerging from the fluorescent green. The dyed water provided a strong contrast to the surrounding city. The artist draws attention to the multidimensional space. The flowing river is an analogy of time, it suggests a specific time. The water makes the tissue of the city realistic, tangible. Being there, we are present in the given space.

The essential feature of water is its definite time of falling. *The New York City Waterfalls* (photo. 7) is an experiment in public space on the properties of perception. Eliasson built four huge water cascades on both banks of the East River, at the famous bridge connecting Manhattan and Brooklyn. Three of them rose several metres above the water surface in the middle of the river, while the fourth emerged from under one span of the famous New York bridge. The main ideas of the project are space, distance, colour and light. When viewed from a distance, a waterfall gives the impression that the water is falling slowly. The closer you get to the waterfall, the stronger the impression that the water is flowing faster. The falling water marks the distance in the city. Eliasson did not want to bring nature into the city.

The waterfalls were seen by thousands of people every day. The viewer was to be part of the space, not just receive the image *en face*. Sensual effects, like salt fog spread by the wind, could evoke the feeling one gets when observing atmospheric phenomena. However, when we realise that the waterfalls are the result of a set, openwork steel structure housing powerful pumps that transport river water into a high bowl, with the water cascading down, we realise that it is impossible to experience the natural. The contact with nature is seemingly created, directed, as a simulated experience, through an installation that uses 'materials' unusual for sculpture, such as water, light, colour, space. The installation became a means of measuring distance.

Another example of space, this time in painting, is still water showing the relationship between surface and depth. The most fascinating property of the surface of standing water is its ability to reflect, to double. The effect of duplicating the same thing, but also the inverted image in the water maintains the tension between the two sides. The reflection in the water reduces the distance and brings you closer. The reflections, meeting, penetrate and attack each other. The emerging images carry a new meaning, which sometimes surprises with an unexpected solution, with colours.

Gerhard Richter's painting *Eis* (Ice) (photo. 8) shows an unobstructed sea space with stalls floating on the water surface. The frozen landscape shows no signs of life. It evokes feelings of anxiety and alienation. Most of the artist's works give the impression of a fluid reality in which everything is blurred, out of focus and fuzzy, like reflections on water. The artist expresses himself as follows:

> I blur things to make everything singularly important and unimportant. I blur things to make them look not artistic or craftsmanlike, but technological, smooth, perfect. I will blur to make all parts more customised. I may also erase excess unimportant information.

Between heaven and earth - airspace

Respect for the traditions of a place awakens in the population an awareness of regional national distinctiveness. Places supported by patriotic feelings constitute an element of identification with a given space.

An interesting example of respect for national values, bearing witness to the past, is the ensemble of outdoor sculptures in Târgu Jiu, Romania, created by Constantin Brâncusi commissioned by the city authorities in 1936 (photos. 9–11). A spatial composition made to commemorate the 20th anniversary of the great battle of Târgu Jiu during World War I, in which many Romanian soldiers died. *The path of the heroes* still continues to amaze art critics today. The main entrance to the park leads through the *Gate of Kisses*, which is a modern interpretation of the triumphal arch with the motif of a kiss, referring to the rite of passage, or entering another dimension of reality. Behind the gate, there is the *Avenue of Chairs*, which leads to the riverside to the *Table of Silence*, surrounded by 12 hourglass-shaped stools, which may symbolise the absence, or rather the invisible presence, of the guests. The famous *Infinity Column*, which Brâncusi himself called "the stairway to heaven" is outside the park, but on its axis. In this way, the artist creates the cultural value of the place and the need to be connected to the place of his birth, to the history of his ancestors and to the many

generations growing up in a common culture and tradition. The sculptures are a message, a symbol, a sign, in a complex space they enrich the identity of a place.

The Romanian religious scholar Mircea Eliade - in an essay dedicated to his compatriot Brâncusi - recognises in the *Endless Column* an element already known in prehistory and widespread throughout the world. The column of heaven is also a Romanian folk motif - the central column supports the celestial vault and serves to communicate with heaven. In other words, it is the *axis mundi* (axis of the world) appearing in various representations as the Irminsul column of the ancient Germans, as pillars of the peoples' world. The point of contact between heaven and earth was considered the centre of the world, a place imbued with the sacrum, the holiest of the holy. In many cultures it represented the basic concept of cosmogony.

Brâncusi, by erecting the support of the sky, by reproducing it in an infinite number of variants, brought to light the symbolism of ascent, contained the essence of flight in it. The vertical dimension of the column ascending into space gives such an impression that, climbing with the gaze, no boundaries are perceived. This ascent, flight into infinite space, "the symbolism of flight expresses the abolition of the human condition, transcendence and freedom". Flight is equivalent to the cancellation of a burden and is an ontological transformation of the human being. It is a sign of control over the element. Flight in the air forces a change of consciousness. Breaking away from the ground, we enter a different airspace. When the force of gravity is overcome, the perspective of vision, points of reference, and above all, feelings change. The celestial vault, airspace - how different it is from a small patch of earth. The higher spheres of the sky are an inaccessible dimension.

> […] the sky reveals its transcendence before there is even an attribution of religious values to it. Heaven "symbolizes" transcendence, power, immutability simply because it exists. Heaven exists because it is lofty, infinite, unchanging, powerful.

The space that connects heaven and earth creates a place where heaven can be the backdrop for events. When we look up to the sky, however, it ceases to be secondary. The perspective of looking up opens up the immensity of height, the unattainable shell, the structure of the openness of the sky. A space without borders, eternal and distant. A number of atmospheric phenomena reveal a connection to the supreme beings of primitive peoples and to the gods of the first civilisations. The sky is perceived as an area, an immensity of space.

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Summary

Public spaces inscribed in the structure of the city engage the viewer to make them aware of their own role in experiencing the surrounding reality. The multidimensionality of space brings a range of sensations and experiences.

The modern age has developed many psychosocial needs in society, for which the city as a whole should provide the right spaces, the right setting and the necessary elements to meet them. The needs of people are diverse and alternate between individuals and communities.

> We feel the need for variability and constancy, for silence and bustle, for calm and movement, for solitude and participation in the community, for anonymity and public performance, for individual expression and participation in collective undertakings.

An important need of urban communities is to have common unique values. These are works of architecture, urban planning, sculpture, gardening and landscape art. They give the city an individual face and are a factor of integration of the inhabitants into the city. The social space consists of many elements which create zones of different social character in the city structure, introduce gradation of social attractiveness of individual areas, create landmarks of the city in this space.

The city structure is of great importance in regulating the life processes of the urban community. The evolution of our culture and new phenomena in our surroundings require the development of appropriate new spaces and a suitable setting for city architecture.

The feeling of a given space by its inhabitants and the possibility of finding in it a place for the expression of small human affairs strengthens in us the feeling of belonging to the surroundings and bonds with other - known or potentially close - people.

Meeting places, where new ideas are born and where we gain distance to things. We create such places together by perpetuating and maximising the values that are important in a given environment.

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