Art Inquiry. Recherches sur les arts 2023, vol. XXV
ISSN 1641-9278 / e - ISSN 2451-0327 / https://doi.org/10.26485/AI/2023/25/13

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EXHIBITION OF WORKS BY GRZEGORZ SZTABIŃSKI AT THE UNIVERSITY OF ŁÓDŹ, *ENTITLED HOMMAGE À GRZEGORZ SZTABIŃSKI – "CONTINUED..."*, AS A CONTRIBUTION TO THE ANALYSIS OF WAYS OF LOOKING AT A WORK OF ART

Motto:

The artist, therefore, does not produce beauty; by painting a picture and giving it certain characteristics, he only creates the opportunity for it to give itself. Beauty itself, on the other hand, remains unchanging, imperishable, whether or not anyone recognises it.[1]

Grzegorz Sztabiński

1 G. Sztabiński, *Inne pojęcia estetyki*, Universitas: Kraków 2020, p. 13.

Abstract: The article addresses the issue of confronting theoretical thought in the field of aesthetics with the results of apparatus measurements. The exhibition of works by the painter and installation artist Professor Grzegorz Sztabiński (1946-2020), presented in Łódź from 20.05.2022 to 20.07.2022 at Wozownia Gallery, became a pretext for conducting an experimental study related to the distribution of visual attention of its audience. Two people were surveyed: a layperson in the field of visual arts and an expert art historian. The intimate exhibition seen through their eyes provides a pretext for comparing theoretical complexities associated with the reception of a work of art (by such thinkers and philosophers as Aristotle, Hannah Arendt, Rudolf Arnheim or Władysław Strzemiński) with the results of objective analyses obtained using portable eye-tracking devices – Pupil Labs Invisible.

Keywords: Grzegorz Sztabiński, exhibition, modern art, eye tracking, experimentation

Introduction

The exhibition *Hommage à Grzegorz Sztabiński – "Continued..."* (*Hommage à Grzegorz Sztabiński – "Ciąg dalszy nastąpi..."*) was presented at Wozownia Gallery, the new exhibition space of the University of Łódź in the Alfred Biedermann Palace at Franciszkańska Street 1/5 in Lodz. The opening took place on 20.05.2022 and the exhibition was presented in the gallery's interior until 20.07.2022.

Fig. 1. The opening of an exhibition of works by Grzegorz Sztabiński, Łódź 2022, photo: Maciej Andrzejewski

Fig. 2. The opening of an exhibition of works by Grzegorz Sztabiński, Łódź 2022, photo: Maciej Andrzejewski

Just before the opening of the exhibition devoted to the presentation of works by the Łódźbased conceptual artist Grzegorz Sztabiński, an experimental study of the distribution of viewers' visual attention[2] was carried out. This is not a strictly scientific study, as the research sample is not large enough even in the context of qualitative research. It is rather an experiment indicating a new field of inquiry for aestheticians pondering the ways in which a work of art is received by viewers in a gallery.[3] For, traditionally, as Stanisław Czekalski notes: "The figure of the viewer is entangled in the communicative model of the circulation of art as one of the three, or more precisely: the last member of the triad: sender – work – viewer".[4] This model of reception of art generates some implications concerning the role of the protagonists indicated here and

2 See: Jan Młodkowski, *Koncepcja uwagi wizualnej*,"Acta Universitatis Lodziensis, Folia Psychologica"12, 2008 pp. 23-25.

3 This issue has been considered by, e.g.: U. Eco, *The Open Work*, transl. A. Cancogni, Harvard University Press, Cambridge, Massachusetts 1989; *Co z tym odbiorcą? Wokół zagadnienia odbioru sztuki*, ed. J. Ryczek, M. Kędziora, W. Nowak, Wydawnictwo Naukowe Wydziału Nauk Społecznych UAM: Poznań 2012.

4 S. Czekalski, *Dzieło w perspektywie odbiorczej: między historią sztuki, kulturą wizualną i egzystencjalną hermeneutyką*, in: *Co z tym odbiorcą? Wokół zagadnienia odbioru sztuki*, ..., p. 27.

the relations that bind them together. It also assumes the primacy of the creator of the work, who initiates and launches the broadcasting process directed at the addressee – the viewer. According to this model, the artist's intention is to deliver certain content through the work of art (as a medium of communication). At the same time, it should be noted, as Czekalski also emphasises, that under the influence of research and an accurate deconstruction of this triad by Jacques Derrida, the importance of the act of reception is rather emphasised now. Each time, this act is the actualisation of the meaning of the work as a certain potential that generates specific content in a dialogical relationship with what the viewer contributes to it. Thus, we can now assume that: "the work is a catalyst for meanings that are as much read from it as projected onto it".[5]

Therefore, a reflection on how a particular work of art is viewed by the viewer, who is inevitably in dialogue with the artist, seems a necessary addition to the volume: "How do artists think?". Before going into a detailed description of the experiment and its conclusions, let us look at the figure of the artist himself and the subject of the exhibition.

Grzegorz Sztabiński – artist and theoretician

Professor Grzegorz Sztabiński was born in 1946 in Łódź. He received his artistic education at the State Higher School of Fine Arts in Łódź between 1964 and 1970. At the same time, between 1967 and 1972, he studied philosophy at the University of Łódź. In 1980, he obtained his doctorate in the humanities and, ten years later, his habilitation in philosophy with a specialisation in aesthetics. In 1998, he was awarded the title of Professor of Visual Arts. For many decades, Professor Sztabiński was associated with the University of Łódź as a researcher and an academic. He began his career at the university in 1974 and actively maintained his connections with it until 2020. During this period, he held several leadership positions. He was head of the Department of Aesthetics from 1993 to 1999 and from 2009 to 2013, and headed the Department of Art History from 1999 to 2009. At that time, his academic activities focused on the problems of contemporary aesthetics and the methodology of art history. He also dealt with modern art, especially the history and theory of the 20th century avant-garde, and contemporary artistic issues. Since 1994, he was a member of the AICA (Association Internationale des Critiques d'Art). In his long academic career, Professor Sztabiński combined the qualities of an artist-researcher, an intellectual and an artist-philosopher. As an artist and researcher, he focused on the problems of contemporary aesthetics and the

5 Ibid. p. 29.

methodology of art history, with a particular interest in avant-garde art of the 20th century and issues related to geometric art. From 1987, Sztabiński also worked at the State Higher School of Visual Arts (now the Władysław Strzemiński Academy of Fine Arts) in Łódź, where he taught art history and theory. He was also an active head of several units at this university. He supervised the studio of plastic composition (later intermedia composition), from 1992 to 2008 he headed the Department of Art Theory and History, and from 2016 to 2020, the Institute of Art Theory and History. At both universities, Sztabiński was also a highly respected academic who consciously referred to the experience of the researcher, theorist and artist in his lectures. His lectures on modern and contemporary art were eagerly and widely attended by successive student generations. We should add that these lectures, carefully prepared, guaranteed structured knowledge that broadened the boundaries of understanding and the horizons of reception of contemporary art.[6]

As an active artist, Grzegorz Sztabiński was involved in painting, drawing and installation art. Occasionally, he also undertook activities related to performance. He divided the works he produced into thematic cycles: *Logical landscapes* (*Pejzaże logiczne*), *Symbolizations* (*Symbolizacje*), *Objects* (*Obiekty*), *Self-citations* (*Autocytaty*), *Writing of nature* (*Pismo natury*), and *Between-things* (*Między-rzeczy*). He was the creator of more than 60 solo exhibitions in Poland and abroad. The artist died in 2020.

His close associates, Eleonora Jedlińska and Piotr Gryglewski, who knew Sztabiński well as an artist and scientist, concluding his activity in both creative fields, note in a text entitled *Pro memoriam. Grzegorz Sztabiński (1946-2020)*:

> Professor Grzegorz Sztabiński belonged to a group of relatively few conscious art researchers who formulate their conclusions while drawing on the experience of a practising artist. This two-sided view was certainly a great advantage and opportunity, but it also had to encourage research responsibility.[7]

Therefore, it seems that undertaking a novel study on how a viewer in a gallery space looks at an artist's work would also be extremely interesting from the point of view of Professor's theoretical investigations.

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6 Sztabiński's biography based on: E. Jedlińska, P. Gryglewski, *Grzegorz Sztabiński (1946--2020)*, „Przegląd Nauk Historycznych" R. XX, no. 1 (2021), pp. 383-387 and A. Pawłowska, P. Sztabińska-Kałowska, *Hommage à Grzegorz Sztabiński - „Ciąg dalszy..."*. Exhibition catalogue, Galeria Wozownia: Łódź 2022.

7 E. Jedlińska, P. Gryglewski,..., p. 386.

Exhibition

Works presented at the commemorative exhibition *Hommage à Grzegorz Sztabiński – "Continued..."* came from two cycles: "Cuts" and "Between-Things". In addition, there were photographs documenting the series "Reflecting nature's handwriting". One of the exhibition curators[8] was Professor Sztabiński's daughter, Dr Paulina Sztabińska-Kałowska, who had supported her father on many occasions since the beginning of the 21st century in the preparations he undertook when arranging exhibitions of his paintings or artistic objects. Therefore, it can be assumed that the works were displayed in a way that would probably have satisfied the artist.

Wozownia Gallery, where the exhibition took place, is a rectangular space with a small square annex. The eastern wall of the room features double-paned window doors, which results in very strong sidelight illumination of the interior. Its walnut-coloured terracotta tile floor combined with white walls create a cosy display space of approximately 65 square metres.

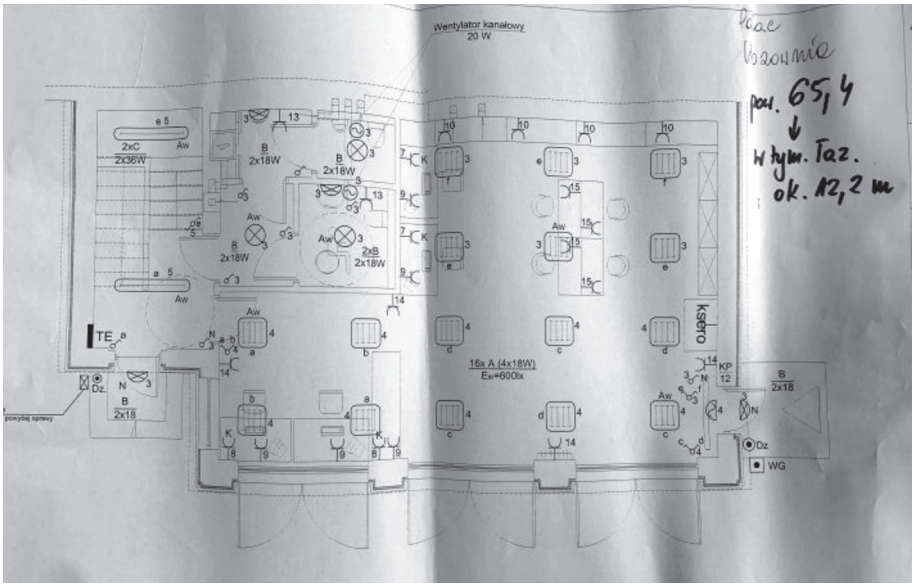

Fig. 3. A hall plan of Wozownia Gallery in Łódź, 2020, photo: Wioletta Każmierska-Jerzyk

8 Aneta Pawłowska, co-author of the article, was the second curator of the exhibition.

The specific location of Wozownia Gallery next to the early twentieth-century Alfred Biedermann Palace makes this object different from a typical minimalist gallery of the "white cube" type with a neutral background for the presentation of paintings. It is rather a specific, individual space, creating a field for dialogue with the works.

During the central part of the exhibition, seven works in the nature of oil paintings on unprimed canvas with charcoal-painted elements were shown, complemented by two ready-made spatial objects exhibited on the floor, one white, spatial, geometric object (a work from the series *Transcendence III – Intertriangles* (*Transcendencja III – Międzytrójkąty*)) exhibited on a black cube and two anti-frames with author's grouped photographs documenting the series *Reflecting Nature's Writing* (*Odzwierciedlenie pisma natury*). In addition, three small painting works from Grzegorz Sztabiński's studio were presented, located on the eastern wall of the room, between the large open windows. The annex contained a spatial installation entitled *Disappearance* (*Znikanie*) from 2017 – the artist's personal gift for his daughter, Paulina Sztabińska-Kałowska and her spouse, Michał Kałowski.

All the paintings and objects grouped in the exhibition were maintained in a brown-grey-white colour palette, possibly with elements of black, and subjected to strict rigours of geometry.

Despite the apparent similarity of the works, they were diverse. As Sztabiński himself wrote: "The effect of the similarities was apparent. The differentiation of the beams consisted in the cuts and intersections introduced into them".[9]

Grzegorz Sztabinski's art appears to be more than a reflection of the artist's intellectual musings in the context of the exhibition. It is rather a material construct containing specific visual motifs. This work is governed by its own rules of shaping both images and artistic objects. Although the aesthetic qualities of the resulting paintings and spatial compositions are unquestionable, the works are dominated by subtle visual actions, and aestheticisation of form occurs almost accidentally. Thus, there is rarely a definite overriding aesthetic factor. Instead, arrangements of elements inspired by mathematical and logical laws, created by the artist and not reflecting the visible world associated with the observation of reality are important.

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9 G. Sztabiński, *Grzegorz Sztabiński – tautologii i powtórzenia*, Galeria Wozownia: Toruń 2010, p. 14.

Eye tracking

Eye tracking is a technique for tracking eye movements that has been known and used in scientific research for more than a century. The first observations of visual activity were made without instruments and focused mainly on visual physiology, but by the end of the 19th century, apparatus began to be used to record and measure changes in the position of eyeballs and points of gaze focus on presented visual stimulus. The growth in popularity of this research technique has been greatly influenced by the research of psychologists who show that eye movements may reflect cognitive processes that are difficult to measure, such as information acquisition and processing or visual attention.[10] The activity of visual attention is realised through different categories of eye movements, determined by the exploratory or penetrative type of the attentional process.[11] In both cases, there is a selection of visual stimuli received through the visual system and hence it becomes important to know the basic characteristics of eye movements. These include fixations and saccades.

Fixations are moments of relatively stable concentration of the gaze on an element of the viewed image (the so-called visual scene). It is assumed that during this phase of immobility, lasting on average from about 0.15 to 1.5 seconds, the reception of a visual stimulus takes place, i.e., the perception of information[12] (it has been established, for example, that an average of three fixations occur per second during reading, which means that they last c.a. 250--300 milliseconds each). Research indicates that the longer the mean fixation time, the deeper the sensory processing. It has also been shown that shorter average fixation times are associated with extraction of information from more complex, more detailed images. The time after which the first fixation occurs is also an important indicator for researchers, as it allows them to assess the ability of a given visual scene element to focus attention.

The number of fixations is also an indicator of interest in the image and may indicate either an increase in the difficulty of recognising the elements placed in it, or the particular importance of this area for grasping the meaning of a given visual content. It is also thought that a higher fixation frequency may be an indicator of emotional arousal, resulting, for example, from performing a task under time pressure or a strong need to identify a difficult-to-recognise item in the image fragment being viewed.[13]

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10 I. Krejtz, K. Krejtz, M. Bielecki, *Zastosowania analizy ruchu oczu w badaniach społecznych*, „Psychologia Społeczna", 2008, vol. 3, 1(6), pp. 73-86.

11 J. Młodkowski, ... pp. 23-44.

12 K. Rayner, *Eye Movements in Reading and Information Processing: 20 Years of Research*, "Psychological Bulletin", 1998, 124(3), pp. 372-422.

13 P. Francuz, *Imagia. W kierunku neurokognitywnej teorii obrazu*, 2015. http://afterimagia.pl/book/okoruchowe-korelaty-piekna, [accessed: 30.06.2023].

Contrary to colloquial intuition and, above all, subjective perception, vision is not a continuous process, but occurs in "Moments of a Discrete".[14] The visual system extracts fragmentary information from the visual environment, sampling it several times per second. These fragments are then fused in the central nervous system in the process of reconstructing the spatiotemporal continuum. This unique modus operandi of visual perception involves the rapid transfer of lines of sight to points in the environment that contain the needed information for the current cognitive task. This jumping eye movement is called a saccade.[15]

Saccades are the second important eye movement in eye-tracking studies and are triggered either intentionally or reflexively. During saccades, visual sensitivity decreases (visual information is not retrieved). Saccades are the fastest movements our body can make (the maximum speed is up to 500 degrees per second). The analysis of saccades makes it possible for researchers to infer decision-making processes involved in deliberately exploring the environment for useful information. The number of return saccades, i.e., repeated jumps of the gaze to previously viewed parts of a visual scene that in-dicate difficulties in reading the meaning of the image, is also analysed.[16] Saccades are also an indicator of sensitivity to changes in cognitive load – it has been noted that the maximum speed of saccades decreases as the number of stimuli processed increases.[17]

To add to this, seeing an image or, more broadly, a visual scene consists of two main phases. The first one is decomposition, which involves analysing and examining different features of the visual scene independently of each other. The second phase is composition, which is a combination of the analysis results from the first phase with the consideration of information stored in visual memory. Both phases occur during each act of vision, which means that what the viewer ultimately perceives differs from the recorded source data. The human visual system not only reproduces images that arrive on the retina, but also actively creates the content of the visual experience. In other words, vision is a creative process during which an image of reality is created based on data from photoreceptors in our eyes.[18]

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14 The term „Moment of a Discrete"refers to a single, separate point in time at which the value of a discrete signal or other discrete phenomena is defined. Unlike continuous time, which is fluid and unlimited, discrete time is divided into separate, finite time intervals.

15 J. Ober, J. Dylak, W. Gryncewicz, E. Przedpelska-Ober, *Sakkadometria - nowe możliwości oceny stanu czynnościowego ośrodkowego układu nerwowego*,"Nauka" 4, 2009, pp. 109-135.

16 P. Francuz, *Imagia. W kierunku neurokognitywnej teorii obrazu*, Poznań 2015,http://afterimagia.pl/book/okoruchowe-korelaty-piekna[accessed: 30.06.2023].

17 Based on: A. Stolińska, M. Andrzejewska, *Metodologiczne aspekty stosowania techniki eyetrackingowej w badaniach edukacyjnych*, „Przegląd Badań Edukacyjnych / EducationalStudiesReview", no. 24 (1/2017), pp. 259-276.

18 P. Francuz, ..., https://afterimagia.pl/widzenie/, [accessed: 30.06.2023].

For the study of human visual activity, the so-called eye trackers are used. An eye tracker is a device that is used to record the position of the eyeballs and thus determines the direction of a person's line of sight (gaze). It determines the instantaneous position of the centre of the pupil in relation to light reflected from the cornea. Based on these measurements, eye tracker software estimates the direction of gaze and/or the fixation point.

Examination

The visual attention of two people (a layman and an art historian) was tested using mobile Pupil Labs Invisible eye trackers.[19] These are small and lightweight devices resembling ordinary glasses that the viewers wore during the examination. These glasses are equipped with sensors: two cameras that track the path of eye movement, a stage camera and a microphone. The glasses connect to an Android-based companion device running the Pupil Invisible Companion app, which allows real-time evaluation of the eye track, recording, and streaming to the Pupil Cloud for data storage, visualisation, and analysis. These types of ophthalmoscopes use optical noncontact (independent of the test subject) methods to measure eye movement. Rays are reflected from the eye and then recorded by a special camera. The collected data is analysed in such a way as to extract signal changes characteristic of eye movement. Infrared light is invisible to humans, does not distract them, and facilitates pupil identification and location of corneal reflections. The experiment was carried out as part of collaboration between the SWPS University of Social Sciences and Humanities and the University of Łódź (leader of the activities) within the project "Friendly City: Supporting the independence of visually impaired people in the use of public transport networks in Lodz, including the application of location information and local architectural monuments".[20]

During the study, two people wearing Pupil Labs Invisible eye trackers that looked like ordinary glasses moved freely for about seven minutes around the exhibition of works by Grzegorz Sztabiński. Although the expert was generally

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19 The study was carried out by Katarzyna Wisiecka, M. A. – a doctoral student of Prof. Izabela Krejtz from the University of Humanities and Social Sciences (SWPS) in Warsaw.

20 The project „Friendly City" is funded by the Polish National Center of Research and Development (NCBiR), grant „Rzeczy są dla ludzi /0106/2020" awarded to the consortium of University of Lodz and SWPS University of Social Sciences and Humanities, led by Aneta Pawłowska. More on the subject: K. Krejtz, P. Szczeciński, A. Pawłowska, D. Rutkowska-Siuda, K. Wisiecka, P. Milczarski, A. Hłobaż, A. T. Duchowski, I. Krejtz, *A Unified Look at Cultural Heritage: Comparisonof Aggregated Scanpaths over Architectural Artifacts Between Exp Non Experts*, Symposium on Eye Tracking Research & Applications (May), 2023, Tübingen, Germany, ACM, New York, NY, USA.

familiar with Grzegorz Sztabinski's artistic work, he had never seen the works presented in the gallery. The layman knew neither the creative output, nor the figure of the artist. The experiment took place after the final installation of the works with labels describing them, but before the official opening. Both people were relaxed and in a good mood, positively interested in the concept of the study. The room was illuminated by the diffuse early afternoon light of a long June day. All the conditions indicated above guaranteed peaceful contemplation of the works.

Fig. 4. An expert art historian during the contemplation of works with eye-tracking glasses, 2022, photo by Aneta Pawłowska

Let us note that, according to Roman Ingarden's theory,[21] aesthetic values are treated as objective entities immanent in the object, and a specific attitude is required on the part of the interpreter to perceive them. This was definitely favoured by the circumstances of the study. Moreover, the perceptive observer must be prepared to perceive and experience them, i.e., must be able to use aesthetic categories. For as intersubjective as they are, these categories make it possible for us to objectify the interpretation of works.[22] From the viewer's perspective, form is that which is perceived through the senses. In this case, the sense analysed is sight, which, by the way, is naturally preferred when dealing with works of visual art. Ultimately, the viewer explicates the content of the work from the form, building it up in the mind.

Thanks to videos recorded on small (smartphone-sized) portable devices connected to the glasses, the fixation points of the people taking part in the study were recorded in real time. The videos make it possible to pinpoint exactly where the viewer is looking at any given time. On the digital recordings made while observing the exhibition, we can observe a blue point corresponding to where and how long the person is looking. A longer relative pause means deeper intellectual processing of the image. What distinguishes the visual exploration of an exhibition by an art historian (expert) and a "novice" (layman) is not only the path of gaze (where the expert and where the novice looked in turn), but also the length of fixation. From the recordings and the example visualisation of the gaze, we can deduce that the expert processed the works more globally, by following the lines that construct the canvas with his eyes. Here we find confirmation of Imdahl's concept of "the Iconic" with its lines of directional tension.[23] In contrast, the novice focused his visual attention longer in central parts of the images. This probably means that the expert looked at the paintings from a broader perspective, as it were, "scanning them with his eyes", while the novice tried to focus on details, attempting to understand and interpret the works. Moreover, the expert looked at individual parts of a painting from different angles, e.g., by coming closer to the object, as opposed to the layman, who generally looked at individual paintings while standing in one place. In addition, the expert paid attention to the angles and edges visible on the works of art. It is also worth mentioning that the layman's visual attention often went beyond the works of art that were part of the exhibition. For example, he looked out of the window, which may indicate less interest and general distraction.

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21 R. Ingarden, *Przeżycie. Dzieło. Wartość*, Wydawnictwo Literackie: Kraków 1966.

22 Ibid., p. 68.

23 See: M. Imdahl, *Giotto: z zagadnień ikonicznej struktury sensu*, transl. T. Żuchowski, „Artium Quaestiones"vol. 4, 1990, pp. 103-122.

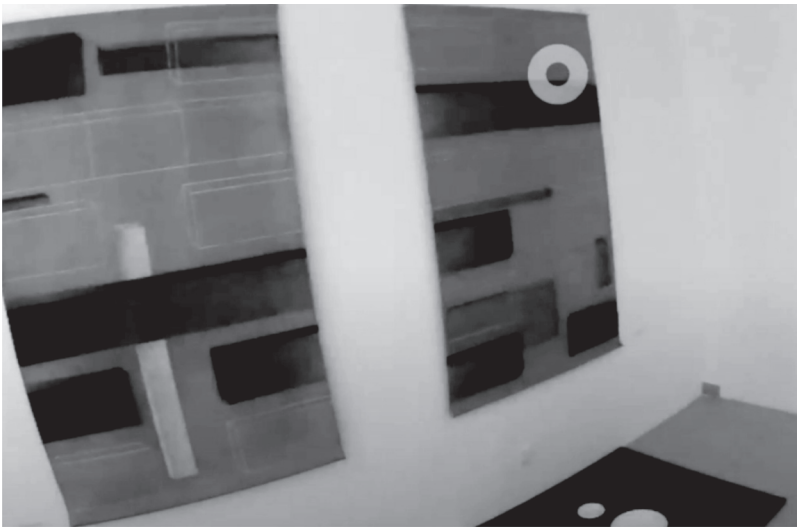

Fig. 5. A view of the distribution of attention (green circle), novice viewer, a frame from an eye tracker video, 2022, ed. Katarzyna Wisiecka

Fig. 6. A view of the distribution of attention (green circle), subject-prepared viewer (expert), a frame from an eye-tracker video, 2022, ed. Katarzyna Wisiecka

Sight versus vision or sight and vision?

The study presented here is one in a series of studies that seek to answer the question of what principles the human brain uses to create a perfect representation of the external world, defined as one that allows us to recognise a face, reach an object or appreciate a work of art. At this point, it should be noted that both thinkers and scientists have been trying to explore these questions for centuries. The fact of the relevance of vision has been pointed out by numerous philosophers, especially in the first half of the 20th century. Hannh Arendt (1906-1975) emphasised:

> "[From] the beginning of philosophy one has thought [about thinking] in terms of seeing, and since thinking is the most fundamental and most radical activity among the activities of the mind, so seeing >>became the model of all perception and the measure of the other senses<<."[24]

A similar phenomenon was also pointed out by Martin Buber (1878-1965), writing about the dominance of sight over the other senses, so that an optical image of the world, "built up from optical impressions", is created in people's minds. He believed that "the sense of sight is responsible for this fact, and the sensations of the other senses are applied [...] later".[25]

Let us add that the very concept of the distinction between "looking" and "seeing" appears already more than two thousand years ago in Aristotle. The Stagyrite separates the first act (the power to see) and the second act (seeing) by saying "The eye is matter for sight" and "The object of sight is the visible". Furthermore, the Greek philosopher claimed (he wrote about this in his treatise *On the Soul* (*De Anima*)) that:

> To perceive then is like bare asserting or knowing [...]. To the thinking soul images serve as if they were contents of perception (and when it asserts or denies them to be good or bad it avoids or pursues them). That is why the soul never thinks without an image.[26]

Much later, in the 19th century, this idea was developed by Hermann von Helmholtz (1821-1894), including in his work *Physiological Optics*.[27] He argued

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24 H. Arendt, *Thinking, Judging, Freedom*, ed. Gisela T. Kaplan, Clive Kessler, Sydney: Allen & Unwin 1989, p. 163.

25 M. Buber, *Problem człowieka*, transl. J. Doktór. Warszawa 1993, p. 12.

26 Aristotle, *De Anima*; 431a, 431, quote from: http://psychclassics.yorku.ca/Aristotle/De-anima/de-anima3.htm, [accessed: 30.06.2023].

27 H. Helmholtz, *Treatise of Physiological Optics*, Vol. III, 3rd edition, Dover: New York.

that perception involves unconscious inferences from incomplete information that we receive from the various senses.[28] It is also worth mentioning here the Gestalt theory initiated in 1912 with the publication of a paper by Max Wertheimer (1880-1943) on the illusion caused by two distant and alternately blinking lights. During subsequent investigations by a whole group of Berlin scientists, a theory initially related to visual perception became an important strand of modern psychology known as Gestalt psychology. The main idea of this movement is the assumption that the whole is qualitatively different from the sum of its parts.

The process of vision thus understood is therefore far from a simple (mechanical) reproduction of images striking the retina. It is rather the result of our unique interpretation of ambiguous sensory information. The most significant confirmation of this statement is the existence of visual illusions, in which assumptions made by our brain can deceive or distort our perception, even when we are fully aware that this is happening,[29] concerning delays and localisation errors in the way we see.[30] It is now known in the light of medical research that the process of vision begins in the eye. An image registered by the retina is pre-processed by the retina and directed to the brain via the optic nerve. There, it is registered, processed, and interpreted by the relevant centres in the form of objects or perceptual scenes. The images that a person builds in his or her mind depend on the influence of objective factors, such as the object's level of illumination, its structure and colours, combined with subjective factors, i.e., experience, mood or the culture in which the person grew up.[31]

One of the most subjective perceptual experiences is art, and perhaps it is this unique and highly variable personal experience that makes art so appealing. Here, variables involved in perceiving a work of art include even more prior knowledge of the art object.

It is therefore difficult not to agree with Piotr Juśkiewicz's contemporary reflection on the subjectivity of the gaze. This thought may serve as a summary of the above considerations:

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28 S. Lapointe, *Introduction to Volume 5.Philosophy of Mind in the Nineteenth Century: The History of the Philosophy of Mind*, Vol 5, 2018, pp. 1-22.

29 R. L. Gregory, *Eye and Brain: The Psychology of Seeing*, 1998, Oxford: Oxford University Press.

30 J. Schlag, M. Schlag-Rey, *Through the eye, slowly; Delays and localization errors in the visual system*, „Nat Rev Neurosci" 3, 191, 2002. https://doi.org/10.1038/nrn750[accessed: 30.06.2023].

31 R. Quian Quiroga, Carlos Pedreira, *How do we see art: an eye-tracker study*, „Frontiers in Human Neuroscience. Cognitive Neuroscience", vol. 5 2011, https://doi.org/10.3389/fnhum.2011.00098, [accessed: 30.06.2023].

> Influenced by the development of knowledge on the physiology of perception and reflection related to the determinants of cognition, the immobile eye stuck at the top of the Albertian pyramid of vision was replaced by a cognitive instrument limited by its biological nature, consisting of a pair of eyes, embedded in a specific body, and connected by many ties to the receptors of other sensations.[32]

Conclusions

In the recordings made during the portable eye tracker experiment, we can observe a blue spot corresponding to the location the viewer is looking at in correlation with the length of that gaze. Longer relative retention usually means deeper processing.

What distinguishes the visual exploration of Grzegorz Sztabiński's exhibition by a layman and a novice is not only the path of their gaze (where the expert and the novice looked), but also the length of fixation. We can infer from the recordings that the expert processed the works more globally, while the novice focused his visual attention longer in central parts of the images. This could mean that the expert looked at the images from a broader perspective, while the novice tried to focus on details when interpreting the artworks.

Behaviours of this kind have also been captured by other researchers applying eye tracking to museum spaces. Here we can point to, among others, research conducted by Michael David Garbutt[33] and a major report entitled *How Do We Move in Front of Art? How Does This Relate to Art Experience? Linking Movement, Eye Tracking, Emotion, and Evaluations in a Gallery Like Setting*, which argue that laypeople are dominated by verbal interpretations of a work of art, associated with focus on the content of the image and its meaning, while experts focus on assessing its visual qualities, carrying out the formal analysis of the image.

Therefore, differences in reception of paintings between laymen and experts can be seen at the level of how the works are viewed. Experts use more global scanning of artworks and the socalled long view, compared to laypeople

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32 P. Juszkiewicz, *Regeneracja oka, regeneracja obrazu. Widzenie jako jednaz kluczowych kategorii modernizmu*, in: *Widzenie awangardy*, eds Agata Stankowska, Marcin Telicki, Agata Lewandowska, Wydawnictwo Poznańskiego Towarzystwa Przyjaciół Nauk, Poznań 2018, p. 28.

33 S. Garbutt East, B. Spehar, V. Estrada-Gonzalez, B. Carson-Ewart, J. Touma, *The Embodied Gaze: Exploring Applications for Mobile Eye Tracking in the Art Museum*, „Visitor Studies", (23) 2020, pp. 82-100, and Garbutt M.,Roenpagel N., 2018, *Developing a Mindful Eye*, in: Garbutt M., Roenpagel N. (ed.), *The mindful eye: Contemplative pedagogies in visual arts education*, Common Ground Research Networks, Champaign IL, USA, http://dx.doi.org/10.18848/978-1-61229-987-7/CGP.

who use rather local viewing strategies. Similar conclusions arise both from our experiment and from publications by Kir Eghbal-Azar[34] or Rodrigo Quian Quiroga and Carlos Pedreira.[35] Let us add that the complexity of reading a work of art has been pointed out by aestheticians for years. An informed viewer should be prepared to receive and experience artefacts, i.e., he or she must be able to use specific aesthetic categories.[36]

The result of the eye tracking examination is extremely interesting, not least because it draws heavily on the intuitive descriptions of how humans see contained in psychologist Rudolf Arnheim's (1904–2007) book *Art and visual perception. A Psychology of the Creative Eye* (first edition 1954) The American psychologist took the view that what we commonly call "looking" is an active activity. Among other things, he wrote:

> We proceed systematically, establishing an inventory of all the round shapes and all the angular ones. We hunt for parallel lines and for examples of super position and of figure and ground. In the higher grades we seek out systems of gradients. When all the items are strung in order, we have done justice to the whole work. It can be done, and it has been done, but it is the last approach an adherent of gestalt psychology would want laid at his door.[37]

In another passage in the publication, Arnheim emphasised the importance of a holistic approach to the artwork being viewed:

> If one wishes to be admitted to the presence of a work of art, one must, first of all, face it as a whole. What is it that comes across? What is the mood of the colors, the dynamics of the shapes? Before we identify any one element, the total composition makes a statement that we must not lose. We look for a theme, a key to which everything relates. If there is a subject matter, we learn as much about it as we can, for nothing an artist

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34 K. Eghbal-Azar, *Affordances, appropriation and experience in museum exhibitions: Visitors' (eye) movement patterns and the Influence of digital guides* [PhD thesis]2016, Universität zuKeoln; https://kups.ub.uni-koeln.de/7606/ [accessed: 30.06.2023].

35 R. Q. Quiroga, C. Pedreira, *How do we see art: an eye-tracker study*, "Frontiersin Human Neuroscience" 2011 Sep 12, 5:98. doi: 10.3389/fnhum.2011.00098. PMID: 21941476; PMCID: PMC3170918 [accessed: 30.06.2023].

36 See: M. Gołaszewska, *Zarys estetyki. Problematyka, metody, teorie*, Wydawnictwo Naukowe PWN: Warszawa 1984; B. Dziemidok, *Główne kontrowersje współczesnej estetyki*, Wydawnictwo Naukowe PWN: Warszawa 2002, pp. 180-301.

37 R. Arnheim, *Art and visual perception. A Psychology of the Creative Eye. New version*, University of California Press: Berkeley, Los Angeles, London 1974, p. 8.

> puts in his work can be neglected by the viewer with impunity. Safely guided by the structure of the whole, we then try to recognize the principal features and explore their do minion over dependent details. Gradually, the entire wealth of the work reveals itself and falls into place, and as we perceive it correctly, it begins to engage all the powers of the mind with its message.[38]

A careful reading of the above passage proves conclusively that experts in the field of art analysis use an intuitive method of scanning a work of art – "guided by the structure of the whole, we then try to recognize the principal features and explore...". The last sentence in Arnheim's referenced thought: "Gradually, the entire [...] work [...] begins to engage all the powers of the mind with its message" is linked to a view expressed at a similar time by Władysław Strzemiński (1893-1952), an artist and theoretician active in the Łódź milieu. He too was convinced of the importance of consciousness (mind) in the act of seeing. According to the Polish theorist: "In the process of seeing, it is not what the eye mechanically grasps that is important, but what a human becomes aware of from their seeing".[39]

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Every encounter with a work of art is different and every gallery or museum visitor's journey is unique. Individuals view the same work of art in different ways under the same circumstances. However, in the light of research into both aesthetic texts and contemporary physiological-behavioural inquiries supported by eye tracking, it is possible to identify certain models related to the visual reception of works of art. Identifiable (thanks to modern technology) eye and body movement styles, in fact, create an "embodied visual profile" of the viewer, doing justice to their actual involvement in the work being viewed. Awareness of the extent to which our own visual behaviour is similar to or different from that of others can point us to other ways of interacting with art and the world around us, revealing new ways of seeing and therefore understanding art.

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38 Ibid.

39 W. Strzemiński, *Teoria widzenia*, I edn, 1958, https://monoskop.org/images/3/38/Strzeminski_Wladyslaw_Teoria_widzenia.pdf [accessed: 30.06.2023].

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WYSTAWA PRAC GRZEGORZA SZTABIŃSKIEGO NA UNIWERSYTECIE ŁÓDZKIM PT. *HOMMAGE À GRZEGORZ SZTABIŃSKI – „CIĄG DALSZY…”* JAKO PRZYCZYNEK DO ANALIZY SPOSOBÓW PATRZENIA NA DZIEŁO SZTUKI (streszczenie)

Artykuł podejmuje problematykę konfrontacji teoretycznej myśli z zakresu estetyki z wynikami pomiarów aparaturowych. Zaprezentowana w Łodzi w dniach 20.05. 2022 -20.07. 2022 r. w Galerii Wozownia, wystawa prac malarza i twórcy instalacji - prof. Grzegorza Sztabińskiego (1946–2020), stała się pretekstem do przeprowadzenia eksperymentalnego badania związanego z rozkładem uwagi wzrokowej jej odbiorców. Badaniu zostały poddane dwie osoby: laik w zakresie sztuk wizualnych oraz ekspert – historyk sztuki. Kameralna wystawa widziana ich oczami stanowi pretekst do porównania teoretycznych złożeń związanych z odbiorem dzieła sztuki (takich myślicieli i filozofów Arystoteles, Hannah Arendt, Rudolf Arnheim czy Władysław Strzemiński) z wynikami obiektywnych analiz uzyskanych przy pomocy przenośnych urządzeń do eye-trackingu – Pupil Labs Invisible.

Słowa kluczowe: Grzegorz Sztabiński, wystawa, sztuka nowoczesna, okulografia, eksperyment

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