https://doi.org/10.25038/am.v0i28.591

Ozan Yavuz
Middle East Technical University, Ankara, Turkey

Temporality and Spatiality in In-game Photography

Abstract: This study delves into the intricate relationship between temporality and spatiality within the realm of in-game photography, aiming to dissect its unique methodology and uncover its vast potential. While in-game photography shares fundamental elements of temporality and spatiality with classical photography, it carves out a distinct niche by virtue of its association with virtual environments. Temporal considerations reveal commonalities between in-game and classical photography, as both capture specific moments in time, akin to the concept of the decisive moment. However, the arresting of temporal progression within the game, accomplished by halting or pausing the gameplay, introduces a novel facet to photography. In-game photography's capacity to exist within the 'extended present' creates a more manageable and distinctive approach to temporal freezing, redefining the notion of the decisive moment, which posed technical, aesthetic, and philosophical challenges in modernist photography. Spatiality, intricately intertwined with temporality, assumes an ergodic structure within in-game photography, offering a multitude of photographic possibilities. Within this framework, photographer can navigate along x, y, and z axes, transforming the camera into a mechanical eye that unveils the invisible and alternative facets of the subject. This newfound freedom introduces an additional layer of engagement between the photographer and the virtual environment, a feature scarcely attainable in classical photography.

Keywords: in-game photography; temporality; spatiality; ergodicity; decisive moment.

Introduction

In-game photography, whose boundaries are quite unclear but also needs to draw its own boundaries, stands in a methodologically different perspective. This perspective, in terms of time and space, has the feature of documenting, objectivity and index of photography, and on the other hand, it forces these features. The change of these features attributed to photography by light, of course, has been expressed by the discussions that have arisen with the digital, artificial, virtual and coded. Scholars

*Author's contact information: ozyavuz@metu.edu.tr

such as Mitchell,[1] Manovich,[2] Rosler,[3] and Lister[4] have noted its ability to embrace and evolve with rapidly advancing technology. Photography has moved beyond the limitations of its past, not concerned with labels like 'post-'[5], 'after-'[6], or 'non-'[7]. Instead, it has entered the era of dematerialization, cybernetics, algorithms and video-games. While photography used to be primarily associated with documenting reality or expressing emotions, it now has the capacity to create and depict non-existent pasts and experiences. Modern photographic technologies allow us to capture images within computer games, incorporate them into virtual reality environments, and even generate them through artificial intelligence. Some scholars argue that these shifts represent the emergence of a 'new visual regime',[8] while others see them as opening up possibilities for new forms of subjectivity.[9]

The prevailing and contentious threads in the realm of photographic expansion today revolve around three key domains: Artificial Intelligence (AI), Extended Reality (XR), and In-Game Photography. The incorporation of photographic attributes within popular video games such as Tom Clancy's Ghost Recon Wildlands, Death Stranding, Cyberpunk 2077, The Last of Us and Watch Dogs 2 has sparked extensive discourse on various dimensions of in-game photography, including its (non)diegetic nature, its remediation of visual media, its affective qualities, its aesthetic considerations, its isometric aspects, and its integration within cybernetic systems. Nevertheless, owing to the rapid evolution of the video game industry itself, in-game photography continues to generate novel aesthetics and modalities, such as the emergence of screencast and screenshot photography as distinct practices.

Applying this line of thought to in-game photography, we can understand it as a form of photography that maintains the efficiency and function of classical photography,[10] while presenting it in an unfamiliar or non-traditional manner. As Nitsche

---

[1] William J. Mitchell, *The Reconfigured Eye: Virtual Truth in the Post-Photographic Era* (Cambridge, MA & London: The MIT Press, 1992).

[2] Lev Manovich, "The Paradoxes of Digital Photography," in *Photography after Photography: Memory and Representation in the Digital Age*, ed. Amelunxen von et al. (G+B Arts, 1995), 57–65.

[3] Martha Rosler, "Image Simulations, Computer Manipulations", in *Decoys and Disruptions*: *Selected Writings 1975–2001* (Cambridge Mass: MIT Press in association with International Center of Photography New York, 2004), 259–317.

[4] Martin Lister, *The Photographic Image in Digital Culture*, 2nd ed., (London: Routledge, 2013).

[5] Joan Fontcuberta, *The Post-Photographic Condition* (Montreal, Bielefeld: Mois de la Photo, Kerber Verlag, 2015).

[6] Fred Ritchin, *After Photography* (New York: W.W. Norton, 2009).

[7] François Laruelle, *The Concept of Non-Photography* (Cambridge, MA: The MIT Press, 2011).

[8] Daniel Rubinstein, Johnny Golding and Andy Fisher, *On the Verge of Photography: Imaging Beyond Representation* (Birmingham: Article Press, 2013).

[9] David Bate, D. (2014), "The Emancipation of Photography," in *The Versatile Image: Photography, Digital Technologies and the Internet*, ed. Alexandra Moschovi, Carol Mckay and Arabella Plouviez (Leuven: Leuven University Press, 2014), 37–52.

[10] The approach I call classical photography here is a form of production created after the use of an analog or digital camera. This includes straight photography, street photography and other fields of photography where a camera is used.

states in his comment on the necessity of the camera, the camera creates both a technical and contextual space for gaze and narrative in any form:

> It is in the nature of a camera (virtual or real) to select, frame, and interpret. Through this selection, the moving image infuses the virtual world with a perspective. It narrates the space to the player. Because every video game space needs a camera, there can be no 3D video game without such a narrating. Even if this camera strategy is limited to a single viewpoint throughout the whole user experience – as seen in the first-person shooting genre – it still constitutes a particular perspective that uses a specific expressive range and features a genuine narrative force.[11]

Hence, it becomes evident that in-game photography, with its photographic perspective and accompanying narrative potential, warrants exploration and investigation within various contexts. Thusly, Giddings[12] suggests rethinking the nature of photography rather than lamenting its transformation into simulacra. Emphasizing the distinctions between in-game photography and classical photography is important. These forms of photography can mutually enrich each other. In-game photography, inspired by real-life photography, offers creative possibilities within the virtual world. Game world photographs, derived from virtual spaces, constitute a unique and mechanical reality. They should be appraised from a different perspective, one that considers the virtual world's peculiarities rather than real-world norms. What can in-game photography, which converges with classical photography but also creates its own methodology, offer us ontologically and methodologically? The subject I want to examine with this question is how spatiality and temporality are in in-game photography and what potential it can reveal. More specifically, a comparison will be made between the 'decisive moment' methodology specific to classical photography and the 'decisive moment' methodology of in-game photography. Naturally, this distinction is not made to glorify the capabilities and features of in-game photography, but to understand its methodology.

Perspective on temporality and spatiality in photography

The diverse techniques employed in the transference of imagery onto surfaces, while having traversed a trajectory punctuated by various transitional phases until the 19th century, should deem the technique executed by Joseph Nicephore Niepce in 1826 as constituting a pivotal qualitative transformation. Within this context, the advent of photography, as an outgrowth of the organic progression from the operational principles of its precursor, the camera obscura, embodies a departure from an insular

[11] Michael Nitsche, *Video Game Spaces: Image Play and Structure in 3d Game Worlds* (Cambridge Mass: MIT Press, 2008), 77.

[12] Seth Giddings, "Drawing Without Light: Simulated Photography in Videogames," in *The Photographic Image in Digital Culture*, ed. Martin Lister (London: Routledge, 2013), 46.

observer, detached from corporeal exigencies, to the construction of a novel observer model that reintegrates ocular perception with corporeal presence. This transition, manifesting during the nascent epoch of the 19th century, emerges as a concomitant outcome of the overarching modernization movement.

The objective realm, which manifests as a delineated vista within the camera obscura, finds itself inscribed by the photographic apparatus. It constitutes a material vestige akin to the photonic imprints cast upon sands, thereby enshrining a distinct ontological demarcation from alternative representational modalities. Photography, facilitated through the agency of this operation of optical rendition, proffers an envisage surpassing the realm of perception's attainments in objectivity. As such, it becomes tenable to encapsulate the quintessence of photographic praxis as an assertion of 'that has been'[13]. In this new way of representation, where photography takes over the effort of painting to represent temporality, the methodology of photography will make the visible more possible and establish a causal link with the physical.

According to Batchen,[14] the phenomenon in question can be seen as an early representation of what he terms the 'desire to photograph' – an inherent yearning to capture the fleeting passage of time and halt its elusive nature. This impulse, along with its visible manifestations, was prompted by a disruption of previously established notions of time's stability. In essence, Batchen argues that the very concept of photography is intricately tied to, and even embodies, a distinct modern anxiety about time that became pronounced during the late eighteenth and early nineteenth centuries. Batchen delves into the notion that 'time holds significance within several discourses that gave rise to the longing for photography.'[15] Continuing his inquiry he proceeds to assess writings penned by Talbot, William Gilpin, Samuel Taylor Coleridge, and Thomas Wedgwood. He then establishes a connection between these textual compositions and the artworks of Constable, putting forth the assertion that these endeavors constitute "as much a study of the temporal exigencies of human observation, and thus of human subjectivity, as a picture of a cloudy sky."[16] Drawing upon primary-source materials authored by some of the foremost pioneers of the medium, Batchen[17] discerns a shared impetus among these early practitioners in their endeavor to articulate temporality. This collective motivation, as evidenced through historical texts, underscores their concerted aspiration to encapsulate the intricate nuances of temporal experience within the evolving realm of photography.

Expanding this analysis, an extension is promptly undertaken to encompass the domain of early photographic artifacts. Early photographers sought to express temporality through a convergence of technical innovations, like the motion studies of Eadweard Muybridge (1870s and 1880s), and Étienne-Jules Marey (1880s–1904). In addition,

[13] Roland Barthes, *Camera lucida: Reflections on Photography* (New York, Hill & Wang, 1980), 77.

[14] Geoffrey Batchen, "Desiring Production," in *Each Wild Idea: Writing, Photography, History* (Cambridge, Mass.: MIT Press, 2001), 2–24.

[15] Geoffrey Batchen, *Burning with Desire: The Conception of Photography* (Cambridge: MIT Press, 1997), 90.

[16] Ibid., 99.

[17] Batchen, "Desiring Production," 10–12.

since the early 1950s, electrical engineer and photographer Harald Eugene Egerton became the pioneer of stroboscopic photography by reducing temporality in photography to the level of microseconds and showing the aesthetic and scientific unity of the decisive moment. However, these developments mostly proceeded with semi-scientific and semi-artistic expressions. From this point of view these works exemplify a sequence of chronological and positivistic methodologies employed by a cohort of innovators who diligently pursued incremental technological enhancements. These advancements were primarily geared towards augmenting the light-sensitivity of photographic plates and negative chemical compositions. The overarching objective was to expedite the image production process, facilitate the capture of motion, and mitigate, if not eradicate, the occurrence of blurring. Besides, preceding the advent of photography, stereograms and Daguerre's dioramas can be regarded as early manifestations of virtuality. Therefore, what we basically encounter is the examination of a kind of contemplative art that emerges from the image production mechanisms that develop upon the experience of virtuality. This examination now takes place in virtual environments where the experience is at a higher level by involving more than one sense. Slater proposes that the scenario uncovered by diroma exceeds modernity's goal of objectively explaining the world's mysteries. Rather, it reignites fascination, blurring the boundary between reality and representation. Paradoxically, it aims to enchant the world anew through natural magic, rather than rational analysis. The environments crafted by Daguerre were not just representations; they were simulations filled with immersive virtual experiences.[18]

Photography's transformation of temporality into a representation of modernity has enabled temporality to emerge as instantaneous. Following these, the once pressing positivist technological and scientific challenge that the visual manifestations of the fragmented second embodied underwent a transformation, leading to a shift away from its initial sense of urgency and character. At this point, the art historian Gilles Mora speaks of a split in the photographic expression of temporality. Mora postulates that the emergence of the 'aesthetic of instantaneity' within the domains of both mass-produced and fine-art photography, arising from the aspiration to adeptly control exposures lasting a fraction of a second, exhibits a range of distinctive attributes: firstly, it fosters a proclivity for capturing the ordinary facets of human existence, mundane objects, and everyday activities; secondly, the veracity of reality becomes subjected to meticulous documentation, driven by the pursuit of encapsulating life's 'decisive moments'; lastly, the perceived 'imperfections' inherent to such visual compositions are embraced as an emblem of genuineness and are revered as an artistic 'virtue.'[19]

In this context, serving as an emblematic representation of a significant paradigm shift in the portrayal of temporality and standing as a trailblazer in both contemporary and classical photographic realms, Bresson's concept of the decisive moment holds a pivotal role as a noteworthy photographic approach. Of course, this understanding of modernist photography's discourse of temporality and spatiality

[18] Don Slater, "Photography and Modern Vision: The Spectacle of 'Natural' Magic," in *Visual Culture*, ed. Chris Jenks (London: Routledge, 1995), 218–37.

[19] Gilles Mora, *Photospeak: A Guide to the Ideas, Movements and Techniques of Photography, 1839 to the Present* (Abbeville Press, 1998), 180.

leads to a crisis of representation on reality. While artists such as Gerhard Richter, Jeff Wall, Thomas Demand and Hiroshi Sugimoto work with the crisis of representation of time and space (and reality) in classical photography, temporality and spatiality evolve towards another form of representation with the adaptation of photography to the digital and virtual world. In parallel, digitality, computer technologies and new media have brought the existence of photography as a material to virtual environments and enabled the emergence of significantly new methods and representations in photographic production. In the digital game as a new media, photography provides a transition to hyperspace and hypertime. Although there are often debates that the causality that gives the ontological definition of photography's power of proof has been 'shaken'[20], this new field, on the other hand, serves as a document for the temporality and spatiality in which it is formed.[21] What we encounter here is the belief that the same methodology that analog photography revealed in temporality and spatiality will continue or should continue. The methodology of in-game photography related to video games as new media will inevitably be similar to its predecessors such as analog photography and the decisive moment. Because there is a 'subtractive process'[22] in both. The process of selection (selecting the main subject), extraction (i.e., leaving it out of the frame), and framing is basically the same in both approaches. However, the temporality and spatiality in which the virtual environment and the video game exist depend on another representation. In line with Vasselau's assertion, simulation models, rather than replicating the natural world, dismantle a naturalized metaphysical perspective and substitute it with systems that generate a world-order based on quantifiable and manipulatable outcomes. She discusses how a particular computer graphics model for subsurface scattering is used to control the appearance of inner light within materials. It transforms the previously ambiguous quality of translucency into distinct and adjustable translucency effects, challenging traditional metaphysical perspectives by providing a controllable and believable representation of materials.[23] Here, it can be said that in-game photography has a structure that can 'refer to itself'[24] due to its unique temporality and spatiality arising from the virtual space.

---

[20] Michael Punt, "'Well, Who You Gonna Believe Me or Your Own Eyes?': A Problem of Digital Photography," *The Velvet Light Trap – A Critical Journal of Film and Television* 36 (1995): 3.

[21] Gerling explains the relationship between photography, in-game photography and reality as follows: 'It is a double simulation: if photography simulates a view of the world, then in-game photography is simulating a simulation.' Winfried Gerling, "Photography in the Digital: Screenshot and In-game Photography," *Photographies Journal* 11, 2–3) (2018): 160.

[22] I use subtractive process as a term that can refer to the opposite of additive process of the painting. Photography is more about the act of exclusion, it references absence. That is, the process of curating, isolating, and composing. Apart from this technical definition, see Barthes's idea of photography as the sign of an absence. Barthes, *Camera lucida: Reflections on Photography*.

[23] Cathryn Vasselau, "Simulated Translucency," in *Digital Light* ed. Sean Cubitt et al. (London: Open Humanities Press, 2015), 174.

[24] Nöth utilizes Jäger›s framework to classify digital images and conventional non-referential photographs as follows: digital images are classified as 'Concrete Photography,' as they create images without any abstraction, whereas non-referential conventional images are categorized as 'Abstract Photography,' as they abstract from the referent Gottfried Jäger, "Abstract Photography," in *Rethinking Photography I+II: Narration and New Reduction in Photography* ed. Ruth Horak (Salzburg: Fotohof Edition, 2003), 178.

Decisive moment and temporality

Henri Cartier-Bresson is one of the most influential photographers of the 20th century. The concept and methodology of 'decisive moment' developed by him has deeply affected many photographers. Cartier-Bresson, who created the philosophy of 'decisive moment' by feeding from many different sources, presented us a new way of seeing, in which he showed different possibilities of photographic vision. He was heavily influenced by the philosophy of a Zen archer, surrealism, and modern art. The book '*Images à la Sauvette*',[25] is the photographer's manifesto. There are some explanations about temporality in the book, and these discourses formed the building blocks of classical and documentary photography. His most well-known motto, which reflects his methodology and philosophy, is "the joint operation of the brain, the eye and the heart"[26]. As per Cartier-Bresson's perspective, the compositional essence within a photograph materializes through the harmonious alignment of concurrent visual components. He contends that disentangling content from form remains an impracticable endeavor within his framework. What he means by this is the geometrically formal arrangement of the elements that make up the compositions of the photograph. John Szarkowski[27] conveyed that Cartier-Bresson's statement of moment of decision was misunderstood; he asserted that what happened at the decisive moment was not a dramatic zenith (unusual) but a visual climax. The main issue here is not a mechanical capture of the moment, but rather the taking form of the moment. There are two things that make up the form, determine the form (composition-space) and content (narrative-time), which are the two basic elements that make up the summit that Szarkowski points out: temporality and spatiality. Cartier-Bresson's methodology is actually a visual definition and expression of modernist definition of time, which takes us directly to Augenblick.[28] Cartier-Bresson's question is how I can capture and express the temporal present. It is a moment in flowing time and it is necessary to stop the flowing time in a meaningful way. According to Heidegger's perspective, the present doesn't manifest as an unending procession of instantaneous occurrences that I passively observe drifting past. Instead, the present is an entity I can actively grasp and decisively mold to my own purpose. The future's anticipatory realm unveils the phenomenon of our past existence, which unfurls itself into the immediate instant of action. Heidegger designates this occurrence as 'the moment of vision'[29].

---

[25] Literally French meaning is, '*images on the run*'. Henri Cartier-Bresson, *The Decisive Moment* (New York: Simon & Schuster, 1952).

[26] Cartier-Bresson, *The Decisive Moment*, [ii].

[27] John Szarkowski, *The Photographer's Eye* (New York: Museum of Modern Art, 1966) 4.

[28] Augenblick, literally translating to 'glance of the eye'.

[29] This expression, borrowed from the lexicon of Kierkegaard and Luther, can be interpreted as a rendition of the Greek term 'kairos', signifying the fitting or opportune moment. Martin Heidegger, *Basic Writings: From Being and Time (1927) to The Task of Thinking (1964) / Martin Heidegger,* edited, with general introduction and introductions to each selection by David Farrell Krell, (New York: Harper & Row, 1977).

The concept of Kairos embodies this control he wields. Through his deliberate self-examination, Cartier-Bresson attains the ability to seize upon a critical juncture. The photographer embodies the metaphor of a wanderer, in pursuit of something he cannot define until it manifests itself before him. During these moments of eager anticipation, he genuinely embraces a 'futural' state, receptive to the possibilities that may unfold. Cartier-Bresson has to be on the alert because he has to focus and foresee a brief and irreversible moment in time. This encapsulates the essence of kairos – the opportune instance for deliberate action, informed by experiential wisdom and technical proficiency, the moment of determination. Decisive action brings about a state of 'presence', unveiling the potential contained within this moment. In Cartier-Bresson's context, the concealed becomes unveiled. According to Cartier-Bresson, the immediacy of capturing an image 'on the run', framing it within the viewfinder the very moment it's seen, holds paramount significance in grasping the essence of the scene. He firmly opposes altering the image through cropping or darkroom modifications, considering the composition as framed by the eye during that precise instant to be unadulterated and authentic. However, this sense of immediacy encompasses not only temporal and spatial dimensions but also an intimate connection between the subject, which has come into existence, and the photographer, who is poised to capture it. If, in the darkroom, when it seems that a shot has 'failed' due to hesitation or uncertainty, Cartier-Bresson says it is usually "because your glance became vague, your eye wandered off".[30] To avoid this, the decisive moment, Kairos and Augenblick need to be considered together. Ward delves into the concept of being authentically future and suspended within the hiatus before the moment, emphasizing how this disposition leads to the Augenblick, possibly translating as the 'glance of the eye'. This glance of perception, directed toward an object, opportunity, or potential, carries a revelatory essence, offering a glimpse into the world's facets that one can then complement with personal knowledge and expectations. Cartier-Bresson's skilled eye adds a layer of anticipation, a premonition embedded within the atmospheric of the scene. Simultaneously, the Latin term 'momentum' holds a deeper connotation beyond the temporal instant – it imparts movement to the moment, accompanied by extraordinary future-bound prospects. The photographer's futural momentum, intertwined with the world's movements, implies an ongoing receptivity to unfolding possibilities within the environment, extending beyond the immediate 'now' instant. This perspective intertwines the philosophical contemplations of being 'futural' with the artistic anticipation embodied in Cartier-Bresson's photographic practice.[31]

[30] Henri Cartier-Bresson, *The Mind's Eye: Writings on Photography and Photographs* (Aperture, 2004), 25–7.

[31] For the 'decisive moment' concept and its in-depth investigation with Augenblick, see Koral Ward, *Augenblick. The Concept of the 'Decisive Moment' in 19th- and 20th-entury Western Philosophy* (Aldershot: Ashgate Publishing Limited, 2008).

In-Game photography and temporality

It is possible to say that temporality in in-game photography is close to classical photography and decisive moment philosophy to a certain extent. Of course, it is quite difficult to understand this from the result images. However, we can say that his methodology works quite differently. The decisive moment seeks to encompass one of the temporal intervals derived from the 'modernist concept of time'[32]. In classical photography, the taken photograph solidifies a particular moment, conserving it for the future. The time aspect becomes concentrated within this singular juncture, encouraging observers to ponder over the past even as the present remains immutable. Time becomes confined within the frame, eliciting contemplation and potential interpretations. In contrast, in-game photography grapples with a dynamic temporality. Virtual worlds are often designed with fluid timelines, where day turns into night, weather changes, and characters move through narrative arcs. In-game photographers must anticipate these shifts, capturing moments that not only align with their artistic vision but also synchronize with the game's evolving narrative. This intricate dance between time and photography adds layers of complexity to the craft. However, the most important aspect of in-game photography for temporality is that time can be stopped or paused as a phenomenon that changes temporality and even the story and events can be repeated.

Christopher Hanson[33] argues that games introduce novel forms of temporal control that significantly reshape our comprehension and experience of time. As shown by these diverse shifts in ludic temporality, game time stands out for its observable flexibility, navigational potential, and range of possibilities. Engaging in gameplay involves navigating through several temporal dimensions. One is the actual passage of time in which we function as individuals. Simultaneously, the game introduces its own temporal framework, marked by intervals in turn-based gameplay or a seamless flow in real-time experiences. Photographer can exert control over these temporal structures through actions like pausing and saving, or by interacting with gameplay elements that integrate temporal manipulation and navigation as essential mechanics. The following can be understood from Hanson's statements: multiple temporalities could create temporal manipulation and vice versa. The possibility of manipulating the temporality and creating multiple temporality in connection with it is possible by stopping, pausing or starting again from the previously saved place in the games. In gaming, pausing a game lets photographer momentarily halt gameplay, breaking the game's time flow. Unlike real life, where time moves forward uncontrollably, games present us with alternative time experiences that we can manipulate.

[32] For the relation of temporality to global standardization, see Stephen Kern, *The Culture of Time and Space 1880–1918* (Cambridge, MA: Harvard University Press, 2003); for the politics of modernist temporality, see Peter Osborne, *The Politics of Time: Modernity and Avant-Garde* (London: Verso, 1995); also for 'a near obsessive fixation with time' of modernist writers see Adam Barrows, *The Cosmic Time of Empire: Modern Britain and World Literature* (Berkeley: University of California Press, 2011) 1.

[33] Christopher Hanson, *Game Time: Understanding Temporality in Video Games* (Indiana University Press, 2018).

From the perspective of photography practice and methodology, stopping or pausing the game is a kind of photographic praxis specific only to in-game photography. As Hanson states: "[…] pause typically extra-textually interrupts a player's engagement in a digital game by visually ceasing all gameplay action […]."[34]

In the flowing time, Kairos cuts the time to the exact 'now' and at the same time can split the time into pieces. In classical photography, outside the frame, outside the moment that cuts like a knife, there is a time flowing. Temporality is then only capable of standing on a two-dimensional surface, as an image. In-game photography, we can also see the moment when time stops and what is outside. Kairos can interrupt time and see outside the 'moment'. A moment that we cannot see in the 'token of absence'[35] that Sontag defines for photography can be seen in the in-game photography. Cartier-Bresson knows he only has one chance to capture the decision moment, he can also predict the next time frame of the moment, but he can only see it after taking the photo. At the moment of taking a photo, he cannot see the moment when he is taking it. Considering the 'what happens next if I'[36], in in-game photography, there is a high probability of learning this, because the photographer has a chance to pause or stop the time. Photography is an inferential practice, and the methodology of Cartier-Bresson's inference and in-game photography's inferentialism is different in terms of temporality. In a way, this is a situation where the understanding of postmodern temporality versus modernist temporality emerges. Postmodernism rejects the linear and coherent view of temporality that is prevalent in modernist thought. Instead, temporality is seen as fragmented and non-linear. It is characterized by an array of overlapping and disjointed experiences, events, and narratives, rather than a unified historical progression. The postmodern view of temporality incorporates the concept of simultaneity, where different temporal layers or realities coexist simultaneously. This is closely tied to the idea of hyperreality, where the boundary between reality and representation becomes blurred, influencing how temporality is perceived. A possibility emerged over the playability of time. This has a different meaning from the fact that a moment is just one of a series of decisions. Heise views postmodern narrative experiments as a counter to the decline in temporal experience amid media-driven culture. Postmodern authors, distinct from their modernist predecessors, highlight time's complexity, contingency, and lack of linearity. This emphasizes the intricate, fragmented temporal patterns shaping society, which are expressed within the text as a whole rather than through individual experience. By challenging traditional frameworks, these narratives prompt readers to contemplate how science and technology shape modern time, encouraging them to envision alternative temporal expressions[37]. As an example of deconstructing modernist temporality in terms of

[34] Ibid., 72.

[35] Susan Sontag, *On Photography* (New York: Farrar, Straus and Giroux, 1977) 18.

[36] Barry Atkins, "What Are We Really Looking at?: The Future-Orientation of Video Game Play," in *Games and Culture* 1, 2 (2006): 137.

[37] Ursula K. Heise, *Chronoschisms: Time, Narrative, and Postmodernism* (Cambridge: Cambridge University Press, 1997) 53–74.

photography, the work of Jeff Wall can be exemplary. Wall brings temporality into discussion with his fictionalized snapshots that deconstruct the decisive moment of what he has called 'complex illusion of instantaneousness'[38]. Jeff Wall's body of work can be interpreted as an endeavor to capture the sensation of 'being present' within photography, striving to infuse photographic surfaces and textures with a painterly quality. The fundamental requisites for imbuing a photograph with the essence of a painting involve Wall leveraging technical capabilities that allow the photograph to embody the formal characteristics of a painting. However, this aspiration begins with a conceptual act of imagination. This pursuit revolves around challenging the prevailing judgments, a concept termed by Jeff Wall as "the most significant illusion spawned by photography."[39] This phase distinguishes Wall's photographic production timeline from conventional street and documentary photography, as well as his instantaneous aesthetics. It encourages the viewer to perceive the photographic object through a painterly lens, resulting in the creation of distinct mimetic realms. Notably, its temporality extends beyond a singular mimetic domain. Wall, "[…] alludes to the tension between staging and contingency, which has troubled notions of photography as 'document' or 'decisive moment'."[40] Wall questions the decisive moment and the temporality beyond it. The decisive moment that Wall constructs represent a wider and playable range in terms of temporality. Wall's photographs often introduce temporal ambiguity. They may combine elements from different time periods, creating a sense of temporal dislocation so the final image is 'iconically multiply indexical'.[41] This challenges viewers to consider the fluidity of time and its intersections, blurring distinctions between past, present, and future, Wall even defines it as 'the decisive absence'.[42] Fundamentally, it is similar to Wall's method in that in-game photography treats time in a more playable space. However, the only difference here is that at the moment when time stops in in-game photography, all spatiality stops with temporality. It is not about the temporality outside of the decisive moment, which Wall questions in the methodology of classical photography. It's about the moment with creating the decisive moment.

Decisive moment and spatiality

I revealed that temporality as a phenomenon is quite close in both photography practices. Spatiality, which we should consider together with temporality, emerges as another phenomenon in which the two photography practices differ considerably.

[38] Jeff Wall, "Restoration – Interview with Martin Schwander – 1994," in *Jeff Wall: the Complete Edition*, ed. Thierry de Duve et al. (London: Phaidon Press, 2009a), 87.

[39] Jeff Wall, "Cinematography: A Prologue, 2005," in *Jeff Wall: the Complete Edition*, ed. Thierry de Duve et al. (London: Phaidon Press, 2009b).

[40] Naomi Merritt, *Jeff Wall and the Concept of the Picture* (London: Routledge, 2021), 26.

[41] Helen Westgeest and Hilde Van Gelder, *Photography Theory in Historical Perspective* (Wiley: Blackwell, 2011), 38.

[42] Jan Tumlir, "Interview with Jeff Wall: The Hole Truth," *Artforum* 39 (2001): 116.

The spatial experience of the decisive moment is an arrangement that coincides with temporality for the photographer. In Bergson's words, 'spatialized time'[43] emerges where the two cannot be separated from each other, overlapped. As per Bergson's view, the segments of time that we divide to enable photography is a representation of space rather than true time. In our daily lives, we perceive time as a uniform medium through which the events of our consciousness flow. According to him, memories that we can retain function as snapshots, capturing the result of an action rather than the action itself. These snapshots are a fusion of both time and space, emerging wherever the passage of time leaves an imprint in space. In such instances, time takes on a visual and quantifiable dimension; time essentially becomes spatial. What we often consider as segments of time are actually fragments of space. While these symbols represent time, they are indeed symbols and representations, not time itself. The process of spatializing time operates bidirectionally. On one side, time requires space to manifest as an externalized representation. On the other side, spatial representations of time, these snapshots, necessitate an awareness of time to be categorized as such. Bergson argues that if genuine time did not exist, a point would remain just a point, not a moment. The snapshot encapsulates two components: the uninterrupted flow of real time (duration) and spatialized time. This spatialized time interacts with genuine time, leading to the emergence of a moment.[44]

The decisive moment creates an intermediary time period, bringing the timed space before us. Here, temporality and spatiality cannot be separated from each other in the photograph that the photographer observes for the decisive moment. Because time and space are simultaneously in flux and emerge as an inseparable whole. Spatial time emerges at the moment the photograph is taken, that is, as a divided time. The photographer's spatial navigation is about being able to stop time only in two dimensions. Spatial navigation is limited. Cartier-Bresson cannot navigate spatiality when he foresees the decisive moment. The decision of how the spatiality will be may only be about arranging the elements that it wants to remain in and out of the photo planarly. Therefore, he cannot go beyond the spatiality he sees. However, it can be said that just like temporality, spatiality also undergoes changes in classical photography. The post-decisive moment period, in which photography is constructed and reality representation is questioned, shows us what spatiality can be and how we can dominate it. Thomas Demand's artistic endeavors revolve around an intriguing exploration of spatiality, a concept that plays a pivotal role in his unique approach to photography and installations. Thomas Demand makes paper models and photographs of real-life spaces in his works. At the core of Demand's methodology lies the meticulous construction of intricate paper models that fastidiously recreates various environments and objects. These models serve as the foundation for his photographic compositions, constituting a multi-layered process that challenges traditional notions

[43] Henri Bergson, *Henri Bergson: Key Writings*, trans. Melissa Mcmahon, ed. Keith Ansell Pearson and John Mullarkey (Londra: Continuum, 2002), 211.

[44] Bergson, *Henri Bergson: Key Writings*, 211.

of spatial representation. Through the lens of photography, Demand masterfully manipulates spatial perception. The transition from three-dimensional paper models to two-dimensional images creates an uncanny interplay between reality and illusion. As viewers, we are initially drawn into the scenes, captivated by their lifelike qualities. Yet, upon closer inspection, we become aware of the crafted nature of these environments, prompting us to question our perception of spatial depth and authenticity. Sugimoto, on the other hand, shows a different spatiality in terms of his relationship with physical space. Sugimoto's 'Theatres' series features photographs of movie theaters taken during film screenings. The long exposure times capture the passage of an entire film in a single image, blurring the lines between temporal dimensions. These works address the spatial aspects of both the theater architecture and the ephemeral light and shadow play of the film screening.

In-Game photography and spatiality

Spatiality has quite a different meaning in in-game photography. Aarseth presents the notion that virtual space and its depiction hold fundamental significance within all computer games. Acknowledging the virtual space's inherent ambiguity due to its abstract nature, Aarseth underscores its vital role in the functionality of computer games. He proposes that these games not only possess a degree of ambiguity due to their representational nature but also emphasize the importance of spatiality. Aarseth's core argument revolves around the idea that computer games are fundamentally focused on investigating and commemorating spatial representation, which becomes their central theme and purpose. He posits that these games not only "celebrate and explore spatial representation as their central motif and *raison d'être*" but also evolve their essence around this exploration and celebration.[45] As Orlando and Brey stated, multiple layers of reference in games reveal a model of a situation, moment or person completely different from the real one.[46] Within this framework, channeling spatiality to perceive numerous layers of reference stands out as a pivotal characteristic of in-game photography. With the pause of the game to take pictures, the photographer/player has the option to move within the three-dimensional space from two-dimensional screen as a camera.

When the photographer pauses the game, being able to move spatially in the space reveals a very provocative, avant-garde and innovative photography method in many respects. Being able to navigate spatiality means that the object and subject of the photograph can also be navigable.

[45] Espen J. Aarseth, "Allegories of Space: The Question of Spatiality in Computer Games," in *Cybertext Yearbook 2000*, ed. Markku Eskelinen and Raine Koskimaa (Saarijaärvi: Research Centre for Contemporary Culture, University of Jyväskylä, 2001), 161.

[46] Alexandra Orlando and Betsy Brey, "Press A to Shoot: Pokémon Snap-shots and Gamespace Ownership," 2015, http://www.firstpersonscholar.com/press-a-to-shoot/, acc. August 7, 2023.

Just like in a studio[47], the photographer can examine all options related to spatiality, the location of the object, the place within the free space. The photographer can move not only on the surface in the x and y axes, but also on the x, y and z axes depending on the spatiality. By capturing a moment in time, the photographer gains the chance to carefully examine intricacies typically hidden and overlooked during the game due to specific camera angles.[48] The photographer can move away from space and temporality, crossing over to the other side. They may realize that the image discovered as the moment of decision is not really the moment of decision but that another, better option exists. The option to leave behind the initial moment of choice and transition into a different temporal and spatial context is open to them. What could be on the other side of a photo taken at the decisive moment, what happened? In classical photography, we cannot see what is happening on the other side of the space or subject. What is on the reverse side of a portrait at the decisive moment, what is this side view from the back of Cartier-Bresson's puddle jumper? Such a reality can only be realized with a 'spatial dominance'[49] of cyberscape. In a camera-less camera movement, the photographer who is allowed to roam freely in space thus explores by moving with a 'subjective camera'.[50] The way the photographer experiences spatiality in the game is related to a method of seeing that stems from axial independence. According to Qvortrup, axial experience and axial vision are here specific to game spatiality, namely cyberspace:

> Cyberspace should be understood neither as something constituting a parallel world (referring to a dualistic paradigm), nor as a representation of the real world (referring to a positivistic paradigm), but should be conceptualized as a representation of the space experience of human beings (referring to a phenomenological paradigm).[51]

Therefore, there is a corporate where the body (vision and axial independence from the photographer's point of view) and the virtual environment meet. The view-centered (egocentric[52]) presentation and the ego-moving spatial concept act together in

[47] Sebastein Möring, S. and Marco De Mutiis, "Camera Ludica: Reflections on Photography in Video Games," in *Intermedia Games-Games Inter Media: Video Games and Intermediality*, ed. Michael Fuchs and Jeff Thoss (New York: Bloomsbury Academic, 2019), 81.

[48] For spatiality and camera use in video games, see: Nitsche, *Video Game Spaces: Image Play and Structure in 3d Game Worlds*, 2008.

[49] Anders Stephanson, "Regarding Postmodernism. A Conversation with Fredric Jameson," *Social Text 17* (Autumn, 1987): 29–54; Fredric Jameson, "The End of Temporality," *Critical Inquiry* 29, 4 (2003): 695–718.

[50] Hanson, *Game Time: Understanding Temporality in Video Games*, 43.

[51] Lars Qvortrup, "Cyberspace as Representation of Space Experience: In Defense of a Phenomenological Approach," in *Virtual Space: Spatiality in Virtual lnhabited 3D Worlds*, ed. Lars Qvortrup et al. (London: Springer, 2002), 5.

[52] Roberta L. Klatzky, "Allocentric and Egocentric Spatial Representations: Definitions, Distinctions, and Interconnections," in *Spatial Cognition. Lecture Notes in Computer Science*, ed. Freksa, C., Habel, C., Wender, K.F., vol. 1404. (Springer, Berlin, Heidelberg, 1998), 1–17.

a paused moment of the game. Here we see a visual data of time, that is, the decisive moment and at the same time its spatiality, as Mylov states time and space often embedded.[53] Unlike classical photography, it provides a different spatiotemporal visual data due to its ability to move towards any desired area of the space as navigable. The 'Ergodic'[54] structure inherent in video games can unveil alternative realities within spatial dimensions. Just as Benjamin connects photography to psychoanalysis in his theory of the 'optical unconscious',[55] the camera's techniques, like slow motion and enlargement, provide a virtual mode of perception that allows us to delve into the spatial and temporal complexities of the photographic subject. Similarly, in in-game photography, a unique visual space emerges, as the ergodic nature of games brings temporality and spatiality to a more accessible and navigable level, revealing hidden facets and enabling us to explore the 'other side of the photo'. This spatial navigability is a distinctive feature of in-game photography.

Conclusion

In the present inquiry, an examination was undertaken to explore the interplay between temporality and spatiality in in-game photography in order to understand the methodology, and most importantly, the potential of in-game photography. Although the methodology of in-game photography is similar to classical photography in terms of temporality and spatiality, it is clear that it has a unique method due to the virtual environment it is connected to. In this sense, exploration of temporality and spatiality reveals interesting distinctions and convergences between in-game photography and classical photography. To begin with, temporality is similar in both photography techniques in that a certain section of time is stopped, just like at the decisive moment. Nonetheless, the total cessation of temporal progression within the game due to the act of stopping or pausing the game, a distinctive trait of video games, presents us with a distinct approach to photography. The way in which in-game photography reveals temporality is the ability to be in the 'extended present'[56]. Thus, the decisive moment and temporality, which modernist photography technically, aesthetically and philosophically problematic, emerges as a more controllable, unique area in in-game photography. Secondly, spatiality, which is intertwined with temporality, is in an ergodic structure where there are more photographic possibilities, and in a sense, there is a unique interplay between temporality and spatiality. The photographer can move along x, y and z axes within this structure, showing us the invisible

[53] Peer Mylov, "On Space, Its Time, and Spatiotemporal Expressions," in *Virtual Space: Spatiality in Virtual lnhabited 3D Worlds*, ed. Lars Qvortrup et al. (London: Springer, 2002), 47.

[54] Espen J. Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore: Johns Hopkins University Press, 1997).

[55] Walter Benjamin, "Little History of Photography," in *Selected Writings: Volume 2. 1927–1934*, trans. Rodney Livingstone et al., ed. Michael W. Jennings, Eiland, Howard Eiland, Gary Smith (The Belknap Press of Harvard University Press., 1999), 512.

[56] Helga Nowotny, *Time: The Modern and Postmodern Experience* (Polity Press, 1994), 8.

and the other side of the photo as a mechanical eye. When the game stops to take a photo, ergodic movement gives the photographer a chance to manipulate the space to see alternative aspects of the subject to be shot. This is not just being but moving within the extended present. Hence, in-game photography introduces an additional layer of engagement between the photographer and the environment. Indeed, when employing the classical photographic method, the photographer navigates within a 3D space, yet their control over time and space remains relatively constrained. Consequently, this scenario typically necessitates the photographer to assume a fixed position relative to both space and time. On the other hand, the fact that the in-game photography has a camera view without a conventional camera creates it a 'counter narrative-representation'[57] in terms of the use of time and space, both technically and narratively as a provocative form that has consistently questioned the norms of classical photography. Borrowing from Batchen's camera-less photography, by rejecting the conventional camera (obscura), in-game photography disrupts established ideas about perspective, space, illusion, truth, and time, blurring familiar distinctions and prompting a re-evaluation of many norms in photography. However, the concept of blurring should not be perceived as a negativity, but as a methodology that questions what the narrative that emerges as a result of the visuality imposed by the linear narrative actually is and could be.

References

Aarseth, Espen J. "Allegories of Space: The Question of Spatiality in Computer Games." In *Cybertext Yearbook 2000*, edited by Markku Eskelinen and Raine Koskimaa, 152–71. Saarijaärvi: Research Centre for Contemporary Culture, University of Jyväskylä, 2001.

Aarseth, Espen J. *Cybertext: Perspectives on Ergodic Literature*. Baltimore: Johns Hopkins University Press, 1997.

Atkins, Barry. "What Are We Really Looking at? The Future-Orientation of Video Game Play." *Games and Culture* 1, 2, (2006): 127–40. https://doi.org/10.1177/1555412006286687.

Barrows, Adam. *The Cosmic Time of Empire: Modern Britain and World Literature*. Berkeley: University of California Press, 2011.

Barthes, Roland. *Camera lucida: Reflections on Photography*. New York, Hill & Wang, 1980.

Batchen, Geoffrey. "Desiring Production." In *Each Wild Idea: Writing, Photography, History*. 2–24. Cambridge, Mass.: MIT Press, 2001.

Batchen, Geoffrey. *Burning with Desire: The Conception of Photography*. Cambridge, Mass: MIT Press, 1997.

Batchen, Geoffrey. *Emanations: The Art of the Camera-less Photograph*. München, New York: Prestel, DelMonico Books, 2016.

[57] Geoffrey Batchen, *Emanations: The Art of the Camera-less Photograph* (München, New York: Prestel, DelMonico Books, 2016), 47.

Bate, David. "The Emancipation of Photography." In The Versatile Image: Photography, Digital Technologies and the Internet, edited by Alexandra Moschovi, Carol McKay and Arabella Plouviez, 37–52. Leuven: Leuven University Press, 2014.

Benjamin, Walter. "Little History of Photography," In *Selected Writings: Volume 2. 1927–1934*. Translated by Rodney Livingstone et al., edited by Michael W. Jennings, Howard Eiland, and Gary Smith, 507–30. The Belknap Press of Harvard University Press, 1999.

Bergson, Henri. *Henri Bergson: Key Writings*. Translated by Melissa McMahon, edited by Keith Ansell Pearson and John Mullarkey, Londra: Continuum, 2002.

Cartier-Bresson, Henri. *The Decisive Moment*. New York: Simon & Schuster, 1952.

Cartier-Bresson, Henri. *The Mind's Eye: Writings on Photography and Photographs*. Aperture, 2004.

Fontcuberta, Joan. The Post-Photographic Condition. Montreal. Bielefeld: Mois de la Photo, Kerber Verlag, 2015.

Gerling, Winfried. "Photography in the Digital: Screenshot and In-game Photography." *Photographies Journal* 11, 2–3 (2018): 149–67. https://doi.org/10.1080/17540763.2018.1445013

Giddings, Seth. "Drawing Without Light: Simulated Photography in Videogames." In *The Photographic Image in Digital Culture*, edited by Martin Lister, 41–55. London: Routledge, 2013.

Hanson, Christopher. *Game Time: Understanding Temporality in Video Games*. Indiana University Press, 2018.

Heidegger, Martin. *Basic Writings: From Being and Time (1927) to The Task of Thinking (1964) / Martin Heidegger*, edited, with general introduction and introductions to each selection by David Farrell Krell. New York: Harper & Row, 1977.

Heise, Ursula K. *Chronoschisms: Time, Narrative, and Postmodernism*. Cambridge: Cambridge University Press, 1977.

Jäger, Gottfried. "Abstract Photography." In *Rethinking Photography I+II: Narration and New Reduction in Photography,* edited by Ruth Horak, 162–95. Salzburg: Fotohof Edition, 2003.

Jameson, Fredric. (2003) "The End of Temporality." *Critical Inquiry 29*(4), (2003): 695–718. https://doi.org/10.1086/377726.

Kern, Stephen. *The Culture of Time and Space 1880–1918*. Cambridge, MA: Harvard University Press, 2003.

Klatzky, Roberta L. "Allocentric and Egocentric Spatial Representations: Definitions, Distinctions, and Interconnections." In *Spatial Cognition. Lecture Notes in Computer Science*, edited by Freksa C., Habel C., & Wender K. F., 1404, (1998): 1–17. Springer, Berlin, Heidelberg. https://doi.org/10.1007/3-540-69342-4_1

Laruelle, François. The Concept of Non-Photography. Cambridge. MA: The MIT Press, 2011.

Lister, Martin. The Photographic Image in Digital Culture, 2nd ed., London: Routledge, 2013.

Manovich, Lev. "The Paradoxes of Digital Photography." In: Photography after Photography: Memory and Representation in the Digital Age, edited by Amelunxen von et al., 57–65. G+B Arts, 1995.

Merritt, Naomi. *Jeff Wall and the Concept of the Picture*. London: Routledge, 2021.

Mitchell, William J. The Reconfigured Eye: Virtual Truth in the Post-Photographic Era. Cambridge, MA & London: The MIT Press, 1992.

Mora, Gilles. *Photospeak: A Guide to the Ideas Movements and Techniques of Photography 1839 to the Present*. Abbeville Press, 1998.

Möring, Sebastein and De Mutiis, Marco. "Camera Ludica: Reflections on Photography in Video Games." In *Intermedia Games-Games Inter Media: Video Games and Intermediality*, edited by M. Fuchs and J. Thoss, 69–93. New York: Bloomsbury Academic, 2019.

Mylov, Peer. "On Space, Its Time, and Spatiotemporal Expressions.", In *Virtual Space: Spatiality in Virtual lnhabited 3D Worlds*, edited by Lars Qvortrup and et al., 47–70. London: Springer, 2002.

Nitsche, Michael. *Video Game Spaces: Image Play and Structure in 3d Game Worlds*. Cambridge Mass: MIT Press, 2008.

Nowotny, Helga. *Time: The Modern and Postmodern Experience*. Polity Press, 1994.

Orlando, Alexandra and Brey, Betsy. "Press A to Shoot: Pokémon Snap-shots and Gamespace Ownership," 2015. http://www.firstpersonscholar.com/press-a-to-shoot/. Accessed on August 7, 2023.

Osborne, Peter. *The Politics of Time: Modernity and Avant-Garde*. London: Verso, 1995.

Punt, Michael. "'Well, Who You Gonna Believe Me or Your Own Eyes?': A Problem of Digital Photography." *The Velvet Light Trap – A Critical Journal of Film and Television* 36 (1995): 2–20.

Qvortrup, Lars. "Cyberspace as Representation of Space Experience: In Defense of a Phenomenological Approach." In *Virtual Space: Spatiality in Virtual lnhabited 3D Worlds* edited by Lars Qvortrup and et al., 5–24. London: Springer, 2002.

Ritchin, Fred. After Photography. New York: W.W. Norton, 2009.

Rosler, Martha. "Image Simulations, Computer Manipulations." In Decoys and Disruptions: Selected Writings *1975–2001*, 259–317. MIT Press in association with International Center of Photography. New York, 2004.

Rubinstein, Daniel, Johnny Golding and Andy Fisher. On the Verge of Photography: Imaging Beyond Representation. Birmingham: Article Press, 2013.

Slater, Don. "Photography and Modern Vision: the Spectacle of 'Natural' Magic," In *Visual Culture*, edited by Chris Jenks, 218–37. London: Routledge, 1995.

Sontag, Susan. *On Photography*. New York: Farrar. Straus and Giroux, 1997.

Stephanson, Anders. "Regarding Postmodernism. A Conversation with Fredric Jameson." *Social Text 17* (1987): 29–54. https://doi.org/10.2307/466477

Szarkowski, John. *The Photographer's Eye*. New York: Museum of Modern Art, 1966.

Tumlir, Jan. "Interview with Jeff Wall: The Hole Truth." *Artforum* 39 (2001): 112–17.

Vasselau, Cathryn. "Simulated Translucency." In *Digital Light*, edited by Sean Cubitt et al., 163–78, London: Open Humanities Press, 2015.

Wall, Jeff. "Cinematography: A Prologue, 2005." In *Jeff Wall: the Complete Edition*, edited by Thierry de Duve et al., 86–95. London: Phaidon Press, 2009b.

Wall, Jeff. "Restoration – Interview with Martin Schwander – 1994." In *Jeff Wall: The Complete Edition*, edited by Thierry de Duve et al., 86–95. London: Phaidon Press, 2009a.

Ward, Koral. *Augenblick. The Concept of the 'Decisive Moment' in 19th- and 20th-century Western Philosophy*. Aldershot: Ashgate Publishing Limited, 2008.

Westgeest, Helen and Hilde Van Gelder. *Photography Theory in Historical Perspective*. Wiley: Blackwell, 2011.

Article received: December 15, 2023
Article accepted: February 1, 2024
Original scholarly article