THE REPRESENTATION OF SPACE AS A NARRATIVE LANGUAGE IN VIDEOGAMES

Greta Attademo
University of Naples "Federico II"
Department of Architecture
greta.attademo@unina.it

VIDEOGAMES
GAMESPACE
VISUAL NARRATIVE

The research examines the videogame as a new form of visual narration, in which the story is constructed not only by the designer's authorial intentions, but also by the interpretation of the player, who moves and acts in the gamespace. The space, therefore, can assume a central narrative role, helping the player in the construction of meanings necessary for the understanding of the story. The aim of this research is to analyse the representation of space as a narrative language in videogames, examining how spatial suggestions become a formal and structural code of visual signs, able to emphasize tones and atmospheres and/or express emotional values. The survey methodology includes a comparative analysis of videogame spaces, starting from the main types of narratives: realistic, verisimilar and unrealistic; this distinction allows to identify three macro-groups of spatial representations, having specific and defined characteristics. This research underlines how the scientific area of representation can contribute significantly to the study of videogame, understood as a narrative form in which the drawing of the space is applied as an irreplaceable modality for the construction of a visual code of thought.

INTRODUCTION

In recent years, the rapid growth of the videogame in the global media industry, has contributed to the development of Game Studies, an interdisciplinary field that not only focuses on the psycho-pedagogical value and cultural implications of the videogame, but also on the relationship between its communicative forms and visual language (Pecchinenda, 2010). This shows that videogames are not only a social phenomenon, but also the convergence point for a redefinition of our relationship with the visual storytelling (Wolf & Perron, 2003). Scholars of visual culture believe that each medium borrows certain features from its predecessors, differing in identity properties. As in other visual narratives, even in videogames the story is told through images, giving a central role to the spatial representation that contains all the elements functional to the story (Zoran, 1984). The videogame, however, has a unique feature: it is the first medium that combines visual dynamism and active participatory role (Greenfield, 1984). If in other media the viewer observes the actions of the characters from the outside, the interaction in the video game breaks this mechanism. The player is at the center of the story, he completes it through his actions (Adams, 2002). The passage from the 'spectatorial' position to an interactive one, also implies a new relationship with space. Manipulating the images on the screen means acting on space; this makes the video game "the medium that is closest to the basic embodied experience of a story" (Grodal, 2000, p. 197). The traditional narrative, therefore, is replaced by what Cubitt (2001) calls "post-narrative spatialization" suggesting that the space is no longer a visual extension of conventional narrative structures, but becomes itself a way to organize the story. Space constitutes, not by chance, the only category commonly accepted by game studies researchers. According to Aarseth (2007), in fact, "the games celebrate and explore spatial representation as their central motif and raison d'être" (p. 44). Jenkins (2003) argues that game designers don't tell

stories but they design worlds and sculpt spaces that are necessary to tell them. Starting from these considerations, the research aims to investigate the drawing of space as the main narrative tool in videogames. This topic is very interesting for the disciplinary field of visual representation. The representation has always been assigned, throughout the centuries, the responsibility of mediating between experts and society, since it is able to incardinate concepts in a system of signs, aimed at subtracting complexity and transmitting meaning.

NARRATION AND SPACE IN VIDEOGAMES

Compared to other media, the interactivity in videogames is significantly denser, as the user can explore and manipulate the spatial dimension (Alinovi, 2002). The designer of the gamespace, therefore, not predicting every move of the player, he must consider his presence and help him to interpret the story. Flynn (2004) in his studies shows that players inhabit the gamespace by reporting their own body history in it, because they are conditioned by their experiences in real space; movements and actions in the virtual space also reflect their counterparts in reality. The reproduction of specific suggestions and spatial perceptions, therefore, becomes a formal and structural code of visual signs, able to emphasize tones and atmospheres and/or to express subjective and emotional values. So no spatial scheme is created a priori in the gamespace, but it reapplies, transforms or abandons elements of the real space to support the player in understanding the story. The research aims, therefore, to analyze the possible relationships between space representation and narrative language in videogames. Considering that "the visual component is not the exclusive dimension of the ludic and aesthetic experience, but undoubtedly the most pervasive and evident" (De Leo, 2007, p. 281), the analysis focuses on the processes of player spatial knowledge stimulated by sight. Each spatial element is investigated not in its

value for the game dynamics, but in the meaning that each player, in his 'mental map', is able to attribute to it because of its visual features. The investigation includes the comparative analysis between virtual space in videogames. We choose games in which the role of space is so relevant that strong subjective and patemic values are projected onto it. Spaces are distinguished according to their belonging to one of three typological classes of tales, namely: realistic narratives, referring to real spaces, i.e., that exist or have characters corresponding to reality; verisimilar narratives, referring to imaginary spaces, i.e., that are created on real models but cannot be linked to any existing place; unrealistic narratives, referring to invented spaces, i.e., that are non-existent, fantastic or surreal places.

EMPATHIC/ANEMPATHETIC SPACES

In realistic narratives, spaces reproduce characters corresponding to those that would be found in physical reality. In this latter, as Vitta asserts, the forms of living and perceiving emerge from the relationship between the spatial features and the human experiences within them (Vitta, 2008). Therefore, even in video games, the 'experiential images' of realistic places are drawn up in order to bring this relationship to a harmonious or discordant state, thus functioning as emotional amplifiers (Pallasmaa, 2001). The cinema critic Chion (1997), talking about the music of the film The Shining, defines it as 'anempathetic', because "it shows a clear indifference to the situation, developing in an equal, fearless and ineluctable way [...] which does not freeze the emotion, but doubles it" (p. 15). This description, as stated by Carocci (2018), is also referable to those spatial representations that have the same purpose. For this reason, two types of spaces can be distinguished: the anempathetic ones, deliberately made indifferent to the narrative situations, contrasting with the actions of the characters within it, thus creating negative emotions; the empathetic ones, which partici-

pate in the story, entering into harmony with the characters, developing positive feelings. In order to understand how the representation affects the perception of space, we investigate two video games both set in a hotel: *The Suicide of Rachel Foster* and *Maquisard*. In the walking simulator *The Suicide of Rachel Foster*, the player takes the role of the young Nicole who, after ten years, returns to the family hotel, abandoned when her father was involved in a sinful relationship with a sixteen year old girl, Rachel, who committed suicide after the relationship was made public. The hotel is, in effect, an anempathetic space, because the tension between geometry and emotional scenarios is clearly accentuated. Although the main character has lived there for years, the space appears alien and disorienting to her. The representation of the hotel, disused and abandoned, aims to distort the player's perception, creating claustrophobic and suffocating sensations. The first-person view and the partial frames never offer the awareness of the verticality of the architecture which appears immense and disproportionate. Moreover, the connecting spaces dominate the other environments. Corridors, staircases, tunnels and interstices, not establishing a univocal relationship with the space, deny the player any reference points to orient himself and build a mental map of the hotel (Figure 1). Since every place seems to lead to any other place, exploration is deprived of any pleasurable quality that could make the space a safe place. The emotional state of suspense does not depend on scary elements, which the game is lacking, but on the feeling that the hotel is not as abandoned as it seems. The discovery of initially inaccessible or hidden areas, as well as the change of position of some elements when the protagonist returns to rooms she has already explored, give the idea of a constantly changing space, maintaining a pulsating atmosphere within it. The feeling of detachment is also rendered through the details of the interiors. The contrast and the opacity of the materials' and furniture's colors, symbolize an earlier era than the one in which the protagonist lives and a space that is no longer at her measure. In addition, the massive presence of geometric ornaments and furnishings,

Fig. 1 One-O-One Games Studio, *The Suicide of Rachel Foster*, 2020. Collage elaborated by the author.

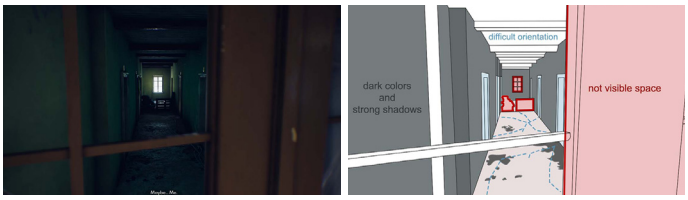

Fig. 2 Greta Attademo, The anempathetic space in *The Suicide of Rachel Foster*, 2021. Author's elaboration.

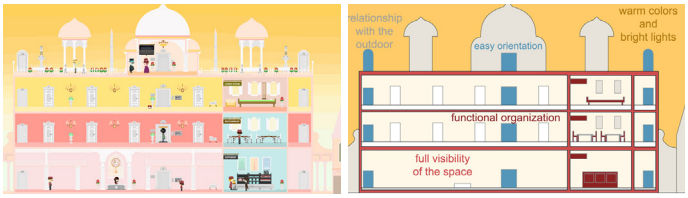

Fig. 3 Greta Attademo, The empathic space in *Maquisard*, 2021. Author's elaboration.

such as carpets, rugs, and curtains, establish in the player the perception that there is something dangerous hidden in the hotel. The miscellany of discordant details, textures and materials, does not allow the player to organize and control the space. The main character, besides being alone, appears trapped by the space (Figure 2): the few openings on the outside, in fact, show a blurred landscape covered by snow; the deprivation of any relationship with the surroundings, increases the player's sense of apprehension and anxiety. The space evokes, therefore, a generalized feeling in which the character's emotions do not reverberate, but are heard as distant echoes (Carocci, 2018).

In *Maquisard*, instead, the character is a lobby boy of the Maquisard Hotel who aspires to become a spy; having discov-

ered the presence of an undercover government agent, he decides to start investigating the hotel guests in order to find clues to his identity. Also here the exploration of space constitutes the element of narrative development; the investigation, however, does not appear dangerous, thanks to the representation of space in longitudinal section (Figure 3). It allows the player to perceive the space seamlessly, facilitating the construction of a cognitive hotel map. This device also allows to show the outside of the building, communicating how the space is open and relational. The particular viewpoint, moreover, permits the visualization of the simultaneous actions of the characters in the hotel, with the possibility of enlarging each environment to focus on a specific narrative scene. The atmosphere is calm and stable during the game: although it is necessary not to be discovered by the other characters, the player takes full control of the space, being always aware of the guests' movements and of the avatar's position. Moreover, the avatar can see what is happening in the private rooms only by looking through the door peephole and, therefore, without losing control of the other environments. The spaces of the Maquisard are perfectly in sync with the actions of the lobby boy. The centrally located elevator speeds up movement between floors, and the stairwell on the right permits more furtive movements. Furniture can be moved in order to hide from indiscreet eyes. The use of color is also fundamental: on the one hand, it improves the understanding of the space, since each gradation corresponds to a different function of the environments; on the other hand, the pastel shades make the space stylized and artificial, allowing the player to participate in the playful fiction and to be conscious of the serene and peaceful atmosphere.

The two-dimensional representation of space is certainly useful to stimulate a harmonious relationship between space and people, but there are also empathic three-dimensional game-spaces. The game *FireWatch* tells the story of Henry, an American man with a difficult past marked by family bereavements who, needing to isolate himself from the world, decides to accept a job as a forest ranger in the heart of Wyo-

Fig. 4 Greta Attademo, The empathic space in *Firewatch*, 2021. Author's elaboration.

ming. The first-person view of space coincides with the introspective story of the protagonist. He lives in a tall control tower surrounded by woods, a symbol of his isolation (Figure 4). The space is depicted in a pictorial style, dominated by dense, layered color fields that aim to transform the physical landscape into a parallel soul place. At the beginning, the game maintains slow and calm tones, as the protagonist explores the space consciously guided by a map and the disposition of the natural elements that seems to create a pathway track. The change of narrative rhythm, in the second part of the game, coincides with the transformation of space: the representation of fire-prone areas, in fact, reveals a greater excitement and changes in the character's mood. Space, therefore, enters into relation with both the positive and negative emotions of the protagonist; the choice of the natural location allows a continuous parallelism between landscape and spirit that influences the evolution of the narrative plot.

UTOPIAN/DYSTOPIAN SPACES

Verisimilar narration proposes stories that cannot be compatible with the existing reality, but that could come true in precise, even if improbable, space-time conditions. In visual media, it is usually used to tell hypothetical social contexts, not related to any existing civilization or one that existed in the past. This is why also the spaces are imaginary: although sometimes they refer to existing places, they do not correspond to them. The complex system of social interactions and dynamics, at the center of the story, is in fact communicated in a more intuitive way through the extreme relationship between the

space and its inhabitants. When it is strongly positive, we talk about 'utopia': with this expression, coined by More, we mean a political, social and/or religious order that, even if it cannot be matched in reality, is proposed as an ideal model to aspire because better than the existing one. To indicate the opposite scenario, Mill coined in 1816 the term 'dystopia'. It indicates a system in which some socio-political expressions, or particular environmental and technological conditions, appear as highly oppressive or dangerous for individuals. Although it represents an imaginary future, like utopia "dystopia also has a deep connection to historical and social reality" (Battaglia, 1998, p. 13); the real is not only embraced, but its negative characteristics are pushed to the extreme. Consequently, for verisimilar narratives in videogames we distinguish between utopian spaces, where the relationship between physical and social space is ideal, highly rationalized, and better than the existing one, and dystopian spaces, where this relationship is inadequate, distorted, and worse than the real one. Unlike empathic/anempathic spaces, utopian/dystopian spaces are imaginary. Therefore, they cannot be assumed as familiar by the player, but must present forms and spatial relations totally different from the reality. Representation, in other words, must contribute to amplifying the perception of uncertainty or indeterminacy regarding the explored environment. If in realistic spaces it required the "presence of specific real-world references, in imaginary spaces it focuses on their 'absence or non-existence" (Iser, 1980, p. 137). In fact, it is the insubstantiality of the space that pushes the player's imagination to the point of completing a mental map: "the true character of these images consists in the fact that they highlight aspects that could not have emerged through direct perception" (Iser, 1980, p. 137). There are many video games belonging to this category, such as *Sable*, *The Last of Us*, *Fallout 3*, *Cyberpunk 2077* (Figure 5).

We choose to analyze *Bioshock*, because this videogame is able to combine dystopian and utopian spaces. The story tells, in fact, the underwater city of Rapture, located in the Atlantic Ocean between Greenland and Iceland, founded with the desire

Fig. 5 From top left to bottom right: Shedworks, *Sable*, 2021; Naughty Dog, *The Last of Us Part II*, 2020; Inon Zour, *Fallout 3*, 2008; Konrad Tomaszkiewicz, *Cyberpunk 2077*, 2020. Collage elaborated by the author. The use of dystopian worlds in videogames.

Fig. 6 Paul Hellquist, *Bioshock*, 2007. Retrieved February, 2, 2022 from https://multiplayer.it/recensioni/bioshock-the-collection-recensione.html. The underwater city of Rapture.

to organize a new ideal social order that, however, over time, turns into a dystopian scenario. The general decay of the space, where chaos and disorder seem to take over, signals that something has happened, but the narrative is veiled with a sense of mystery that still leaves the player free to make interpretations. The damaged and flooded urban areas contrast with the aerodynamic shapes of towers and skyscrapers that, surmounted by large gears and connected by tunnels, identify a real rhizomatic space (Figure 6). This representation creates a tangible perception of an urban system changed by time, but which initially had to be synchronized and functioning as a 'machine city'. Even the buildings are decaying and disused (Figure 7); some of the details still visible show signs of art deco, high-end materials and curved, sinuous surface furnishings, making the player reflect on the luxurious nature that must have permeated the

Fig. 7 Paul Hellquist, *Bioshock*, 2007. Retrieved February, 2, 2022 from https://multiplayer.it/recensioni/bioshock-the-collection-recensione.html. The decaying and disused buildings in *Bioshock*.

city in the past. The change is still visible in the functional re-adaptations of the public space: below the tracks of a train, now disused, there are a series of slum-like dwellings that contrast with the taller buildings, still in good condition, bringing out the economic contrast between the city's social classes. The first narrative clue of the past of a utopian city can be found in the lighthouse that, now devoid of lights, loses its implicit sign of city landmark. Inside it, in fact, the player finds the sculptural bust of a man, Andrew Ryan, creator of the city, under which is engraved the phrase "No gods or king, just men". Continuing with the exploration, the player finds photographs, newspaper clippings and paintings that allow to reconstruct the history of Rapture. It was the utopian project of a society that, exploiting the remote location, would create a self-sufficient system, powered by marine life and geothermal energy from undersea volcanoes. However, the capitalistic and elitist economic system, in which everything was privately held and overpriced, led to the flourishing of criminal activity and resentment of less fortunate citizens, culminating in the collapse of Ryan and the entire social system he had built. The representation of the city, therefore, is the fulcrum of the story: its location, shape and spatial relations already show a society that is clearly different from the infinitely possible ones of reality. Even though the player has never visited the ancient Rapture, he can hypothesize it in its utopian guise, overturning the images provided by that dystopian world (Figure 8). In other words, the change of space is the element

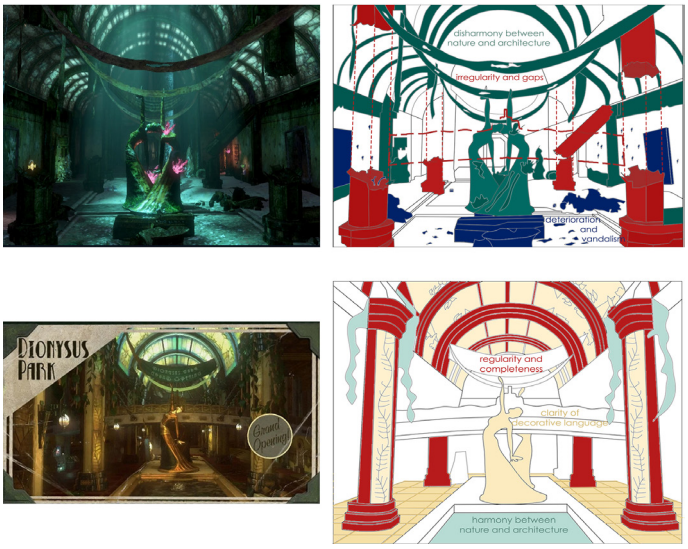

Fig. 8 Greta Attademo, The utopian/dystopian space in *Bioshock*, 2021. Author's elaboration.

through which all the gaps of an apparently ideal social model are interpreted. This model, now deprived of its power structures, turns out to be completely unsuitable for the individuals' needs. The player's perception is built through the deficiencies in the representation: what he sees is perceived as harmful and hostile; consequently, what is absent is catalogued in his imagination as beneficial and just.

UNREALISTIC NARRATIVES AND IMPOSSIBLE/ ELSEWHERE SPACES

The unrealistic narratives propose stories that not only do not coincide with reality, but are also impossible to be realized. The spaces in which they are set are, so, invented: although responding to the characteristic of imaginary places, as well as utopian and dystopian worlds, they do not denounce other ways in which reality could be, but subvert its rules. These representations make explicit, in fact, their unrealizability in the physical world by pushing the spatial logic to the breaking point, hypothesizing architectural and urban forms that defy physical laws. This is why we talk about impossible spaces and of elsewhere.

These spaces are not born with the advent of digital technology, but abound in ancient mythologies, religions and literature, proclaiming themselves as spaces that refuse to be simply places by subverting the Newtonian-Euclidean paradigm of homogeneity and uniformity. An example is the conformation of hell in the Divine Comedy, whose topology "is as twisted as a Mobius strip (or more precisely a Klein bottle)" (Gomel, 2017, p. 2). In videogames, impossible spaces have even more complex developments than in other media. Ryan (1991) underlines that the potentially n-dimensional digital environment is the best model through which space can assume different aspects from the conventional linearity of narratological schemes. In the virtual gamespace it is possible to realize those architectures that, in other visual narratives, could be represented but not explored. The total absence of restrictions, both physical and constructive, allows, in fact, to explore and navigate architectures that are impossible in real space. The opportunity to investigate non-Euclidean geometry concepts and bizarre topologies means that impossible spaces are widely used in videogames. In some cases, the attention is placed on the narrative of illusory and paradoxical architectural structures, such as those in *Thief*, *Bloodborne* and *Manifold Garden* (Figure 9). In other videogames the focus is on the construction of real different worlds with unreal logics, as in *Destiny*, *The Signal From Tölva* and *Obduction* (Figure 10).

An emblematic impossible space is certainly that of *Monument Valley*, whose inspiration comes precisely from the artistic works of Escher. The story tells of the silent princess Ida's journey through surreal imaginary worlds made of mysterious monuments, hidden paths and illusory spaces. Each level consists of a different architecture, floating in space, which becomes the protagonist of the game. The isometric representation allows the player not only to show the three dimensions of the building with a limited distortion, but also to observe both its exterior and interior at the same time. The spatial images, at first glance, appear extremely familiar, recalling Islamic minarets, Indian wells and Scottish castles in their shapes. The use of bright pastel colors also suggests that the space is harmonious

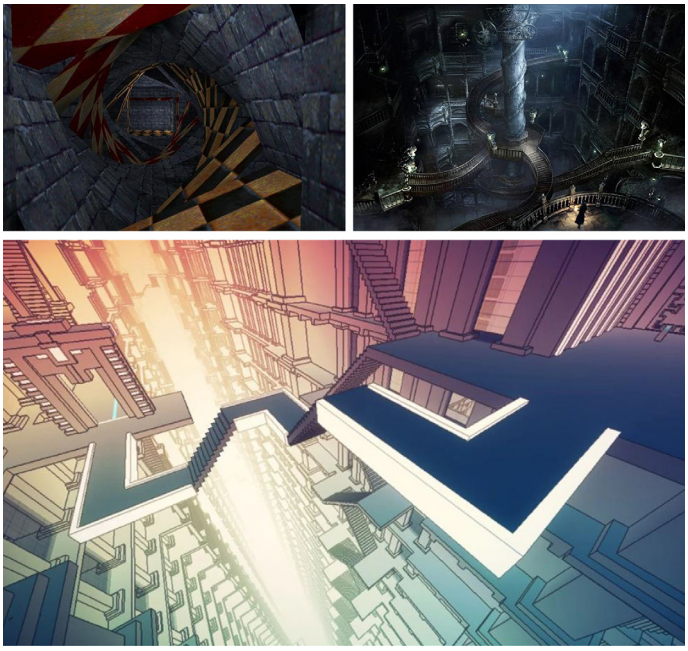

Fig. 9 From top left to bottom: Alexandre Breault, *Thief*, 2014; Kazuhiro Hamatani, *Bloodborne*, 2015; William Chyr, *Manifold Garden*, 2019. Collage elaborated by the author. The use of impossible worlds in videogames.

and recognizable, inspired by the architecture of Ricardo Bofill and Peter Eisenman (Lange, 2015). On closer examination, architecture reveals its opposition to the real world, acquiring its own rules and properties which become more and more complex as the game progresses. The player, in fact, starts to perform movements as he would do in real space, to then realize that they do not fit the new architectural structure. By moving certain portions of the space, he becomes aware of the impossible logics that dominate it: there is no gravitational force, the architecture can tip or rotate, stairs become ceilings, floors become walls, interiors become exteriors (Figure 11). The loss of spatial oppositions—inside/outside, below/above—amplifies the staggering of space and the inebriation of the impossible achieved or overcome. The player, therefore, can interpret the story only by moving away from reality and understanding the new spatial conditions and relationships, made up of incongruities and geometric distortions.

Fig. 8 From top to bottom right: Lars Bakken, *Destiny*, 2019; Big Robot, *The Signal From Tölva*, 2017; Rand Miller, *Obduction*, 2017. Collage elaborated by the author. The use of spaces of Elsewhere in videogames.

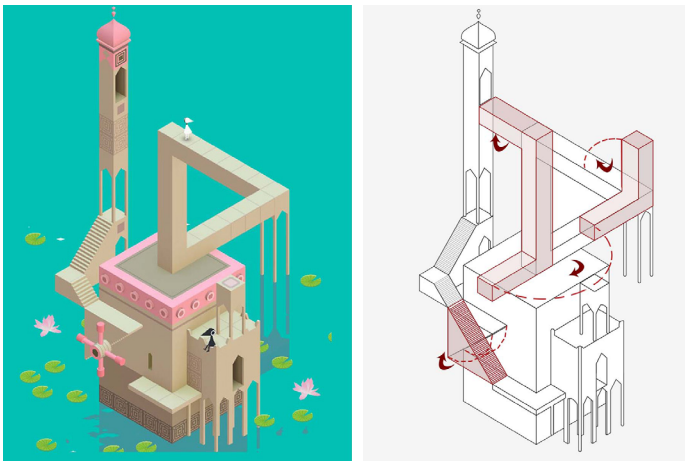

Fig. 11 Greta Attademo, The impossible space in *Monument Valley*, 2021. Author's elaboration.

CONCLUSIONS

The research underlines how the field of representation can contribute to the extension of the academic literature on videogames, intended as a narrative form in which the drawing of space is practiced as an essential modality for the construction of a visual code of thought. The realistic stories coincide with spatial representations that do not necessarily require a high

level of verism, but that reproduce, in the relationship with individuals, sensations similar to those that we would have in the real context. In the anempathetic space, the presence of numerous opposing spatial elements makes the overall configuration of the environments illegible or difficult to interpret. In empathic space, instead, all elements are coordinated and distinct, creating harmony between characters and environment. The verisimilar narratives adopt spatial representations whose perception, although different from what we would have in a real space, is able to lead us back to it through differences, whether they are lacks as in dystopian spaces or additions as in utopian ones. Both emphasize an extreme relationship between individual and space, which can be highly positive or negative. The imaginative complexity required to the player is, therefore, greater; he must connect details and spatial clues to recompose the complex ideologies at the base of the game. The unrealistic stories, on the other hand, make use of spatial representations that, while initially appearing familiar, turn out to be far from the logic of physical reality. The features of the previous spaces are mixed, reformulated and overturned in paradoxical and unrealistic spatial solutions; it is precisely the diversity from reality that constitutes the fulcrum of impossible spaces and elsewhere.

REFERENCES

Aarseth, E. (2007). Allegories of Space: Spatiality in Computer Games. In F. von Borries & S. P. Walz (Eds.), *Space Time Play. Computer Games, Architecture and Urbanism: The Next Level* (pp. 44-55). Basel, CH: Birkhäuser Publishing.

Adams, E. (2002, October 9). Designer's Notebook: The Role of Architecture in Videogames. Gamasutra. In *The Art & Business of making games*. Retrieved April, 2022 from https://www.gamasutra.com/view/feature/2943/designers_notebook_the_role_of_.php?print=1

Alinovi, F. (2002). Serio videoludere. Spunti per una riflessione sul videogioco. In M. Bittanti (Ed.), *Per una cultura dei videogames. Teorie e prassi del video giocare* (pp. 17-55). Milan, IT: Edizioni Unicopoli.

Battaglia, B. (1998). *Nostalgia e mito nella distopia inglese. Saggi su Oliphant, Wells, Forster, Orwell, Burdekin*. Ravenna, IT: Longo.

Carocci, E. (2018). Abitare l'Overlook Hotel. Il ruolo dello spazio anempatico in "Shining". *SigMa. Rivista di letterature comparate, teatro e arti dello spettacolo*, 2, 311-339. doi: https://doi.org/10.6093/sigma.v0i2.5978

Chion, M. (1997). *L'audiovisione. Suono e immagine nel cinema*. Turin, IT: Lindau.

Cubitt, S. (2001). *Simulation & Social Theory*. London, UK: Sage.

De Leo, D. (2007). La fenomenologia della percezione estetica nel nuovo panorama multimediale. In P. Limone (Ed.), *Nuovi media e formazione* (pp. 263-283). Rome, IT: Armando Editore.

Flynn, B. (2004). Games as Inhabited Spaces. Media International Australia Incorporating Culture and Policy. *The Game Issue*, 110, 52-61.

Gomel, E. (2017). *Narrative Space and Time. Representing Impossible Topologies in Literature*. New York, US: Routledge.

Greenfield, P. M. (1984). *Mind and Media. The Effects of Television, Computers and Video Games*. Hove, US: Psychology Press.

Grodal, T. (2000). Video games and the pleasures of control. In D. Zillmann & P. Vorderer (Eds.), *LEA's communication series. Media entertainment: The psychology of its appeal* (pp. 197-213). Mahwah, US: Lawrence Erlbaum Associates Publishers.

Iser, W. (1980). *The act of reading: a theory of aesthetic response*. Baltimore, US: Johns Hopkins University Press.

Jenkins, H. (2003). Game Design as Narrative Architecture. In P. Harrington & N. Frup-Waldrop (Eds.), *First Person. New Media as Story, Performance and Game* (pp. 118-130). Cambridge, US: The MIT press.

Lange, A. (2015, June 29). Spotting Real-World Architecture in Monument Valley. In *Curbed*. Retrieved April, 2022 from https://archive.curbed.com/2015/6/29/9945084/spotting-realworld-architecture-in-monument-valley

Pecchinenda, G. (2010). *Videogiochi e cultura della simulazione: La nascita dell'homo game'*. Rome - Bari, IT: Laterza.

Pallasmaa, J. (2001). *The Architecture of Image. Existential Space in Cinema*. Helsinki, FI: Rakennustieto.

Ryan, M. L. (1991). *Possible Worlds, Artificial Intelligence, and Narrative Theory*. Bloomington, US: Indiana University Press.

Vitta, M. (2008). *Dell'abitare. Corpi spazi oggetti immagini*. Turin: Einaudi.

Wolf, M. J. P. & Perron, B. (2003). *The Video Game Theory Reader*. London, UK: Routledge.

Zoran, G. (1984). Towards a theory of space in narrative. *Poetics Today* 5(2), 309-335.

Article available at

DOI: 10.6092/issn.2724-2463/14354

How to cite

as article

Attademo, G. (2022). The representation of space as a narrative language in videogames. *img journal*, *6*, 32-49.

as contribution in book

Attademo, G. (2022). The representation of space as a narrative language in videogames. In Villa, D. &. Zuccoli, F. (Eds.), *img journal 06/2022 Image Learning* (pp. 32-49). Alghero, IT: Publica. ISBN 978-88-99586-27-0