The spatial experience of games and other media: notes from a theoretical-analytical model of representations of space

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Abstract

This article discusses spatial experience in games, in relation to other media. A brief review of some classic works on spatial experience in literature, photography, cinema and television is presented. A theoretical framework composed of three 'types of space' is used for an analysis of a hypothetical simplified gameplay. As a result, the spatial experience of games is understood as a dynamic composition across different levels of materiality and meaning. This practice is made possible, amongst other factors, by fictional capacity, a cultural construction developed over centuries of interaction with media representations.

Keywords

Spatial representations; visual media

Introduction

The identification of games as media allows to relate them to other media, with which they bear similarities and differences. This is not the same as forcing games into theoretical models created for those media, but recognizes that games share the cultural, commercial and political landscape with other media. They also share some representation strategies and therefore can rely upon a historically built literacy. It is, therefore, relevant to consider what is already known about the spatial experience of literature, painting, photography, cinema and television in the discussion of spatial experience of games.

Previous authors have approached the question of space in games. Wolf's book from 2001, for example, pointed out the mediatic status of games and questions related to the space in games. Also relevant is a book organized by Borries, Walz e Böttger (2007), especially Lange's essay about game settings and Boron's text on representations of space in games. The most important precursor for this text, however, is a book by Nitsche (2008) that dealt with different aspects of the representation and experience of games, including the parallels and differences between cinematic and game spaces.

Considerations about games in relation to other media easily turn towards narrative and close around it. However, going this way is not a good idea. Narrative is not always the central point of media products. Another risk is concentrating on the similarities between games and other media and forgetting the differences. To go against this tendency, the text begins by selecting interactivity, and, more specifically, agency, as a starting point for the difference between games and other media.

Interactivity and agency

The word interactivity has been overused and the property denigrated as being a purely technical matter, or even a marketing strategy. However, interactivity is a main feature of digital media from which many, if not all others derive. This assertion is based on a difference between types of interaction that should be made explicit.

Interactivity can be defined as the possibility of changing the elements of media *representations*: for example, moving objects from one place to another in a gameworld. This is different from interacting with *machines*, for example, changing the colour balance of a screen. The latter was already possible with previous media. It is also different from social interaction, that is, the interaction between social actors or groups. By definition, any medium is a communication technology, that is, a technology for social interaction

Interactivity is a prerequisite for agency. The most widely known definition of agency comes from studies of interactive narratives, in which agency is understood as the capacity to interfere with the events of a story. However, agency is not restricted to narratives.

Wardrip-Fruin *et al.* (2009) identified two opposing trends in the discussion of agency in games. The first one places agency on the side of the player: it is the player who has the power to act and to decide and it is the player who enjoys the pleasures of agency. In the second approach, agency is defined by game design, more specifically, by the balance between game features. The authors discuss the weaknesses of this polarization and propose that agency involves the game and the player, as it depends on the actions that the player want to take "are among those they can take (and vice versa) as supported by an underlying computational model." (2009: 1).

The definition of agency in this article adds other elements to that, elements that arise from the parallels between games and other media. These include, for example, the technological configuration of the instruments used to play, the genres, aesthetics and content of games. Moreover, the objective of discussing the spatial experience that emerges from the relation between the player and the game makes it necessary to take the material conditions into account as well.

In this paper agency is defined as a continuous process of negotiation between the player and the game, in which the player interacts simultaneously with the contents and the structure of the game, with the representations of those contents and structure, with the technological instruments that make them possible and with the material elements in their physical environment.

Space and spatial perception

The tendency to think about involvement with media representations as an immersive experience is a cultural construction that has been built over centuries. In analog media, the desire of immersion could be compared with the desire that, instead of looking at an image, the viewer could be in front of the object represented by that image. A second, deeper level of desire is implicit in the metaphor of the painting as a window through which a different reality can be seen: the desire "to get past the limits of representation

and to achieve the real'' (Bolter and Grusin, 1999: 53). Murray emphasizes that the word immersion implies the obliteration of the perception of reality. This idea is not exclusive to digital media, nor does it depend on the use of new and sophisticated technologies. Wertheim describes the immersive experience of literary text using Dante Alighieri's *The Divine Comedy* as an example:

> Slogging through the fetid ditches of the Malebolge or trekking up the crisp terraces of Purgatory, you feel as if you are really there. You can almost smell the stench of the muck in Hell, hear the choralling of angels in Heaven. this may be a journey of the soul, but few works of literature evoke the physical senses so powerfully. One hears, sees, smells the world Dante portrays (Wertheim, 1999: 51).

The reference to the *Divine Comedy as* a "journey of the soul" points in the direction of the main flaw in the idea of immersion, which is the presupposition that it is possible to separate the body from the mind. The idea is strongest in the work of Descartes, who resorted to the strategy of rejecting the existence of anything that could be doubted. He concluded that the only thing he cannot doubt is that there is something that is doubting: this is the meaning of his famous "I think therefore I am". This phrase identifies the "I", that is, the subject, with the immateriality of thought. The body has been discarded. This sharp separation between mind and body informed Western culture until the XIXth century. Since then, this division has been challenged by several schools of most (if not all) Sciences and Arts.

Some of the authors that challenged this division related it to spatial experience. One of these was Merleau-Ponty, who said:

> We have become accustomed, through the influence of the Cartesian tradition, to disengage from the object: (...) There are two senses, and two only, of the word 'exist': one exists as a thing [the body] or else one exists as a consciousness. (Merleau-Ponty, 2002: 230)

In daily life, it is very nearly obvious that no one is only consciousness, or only body. The inseparability between body and mind is experienced all the time: when the body is hurt, the whole subject is hurt, and finds it difficult to concentrate, feels irritable or perhaps sad. A person is not *in* the body, the body *is* the person as much as the mind. As the subject is neither only thought nor only sensorial perception, but both, inseparably, so the material and immaterial experiences of space, that is, the space experienced by the body and the space experienced by the mind, are impossible to separate. Immersion is not the only fallacy amongst the interpretations of the modes of engagement with media products, but it is the most radical in the presumption of a separation between thought and corporeality.

This phenomenological understanding of subject and of spatial experience, inspired by Merleau-Ponty, underlines the theoretical construction of this article. However, its wide range and high level of abstraction makes it difficult to apply it to more specific

questions. The objective of this paper requires a theoretical model of a smaller scale and directed specifically towards the question of media spatiality.

Types of space

Considerations about the spatial experience of media usually follow the desire for immediation, that cultural construction that drives the development of representation techniques and technologies towards strategies to reduce the interference of mediation (Bolter e Grusin, 1999). To be coherent with this idea, the presence of anything that places itself between the real and the fictional world cannot be taken into account.

The theoretical model used in the analyses presented in this text takes a different direction: it starts from the recognition that fictional spaces are only accessible through mediation. That is, fictional spaces exist only in imagination and therefore can only be shared through languages, that is, using signs.

All signs have a level of immateriality and a level of materiality. This can be understood according to the concepts of signified (that which the sign represents) and signifier (that which allows the sign to be perceived) (Saussure, 1961). This division, though, is not a Cartesian division between the material and the immaterial. The signifier is not a physical element, something that can be taken in one's hands, such as the photographic paper on which an image is printed. In Saussure, the signifier is "the impression that it [the sign] makes on our senses" (Saussure, 1961: 66). In this paper, the idea of signifier is used as a reference: it helps to identify the existence of one more level of materiality between the paper and the impression of the image on the senses, that is, between the physical object and the signifier. This is the representation itself, the utterance.

Spatiality is more prominent in visual representations. Images are distributed in space, for example, on the bi-dimensional surface of the screen. Sounds, on the other hand, develop over time. This is not to say that images do not have their own temporality or that sounds are not part of the spatial experience. Even when looking at a single image, the viewer sees its elements in sequence, one after the other: over time (Fragoso, 2005: 68). Similarly, sounds coming from sources distributed on space are experienced spatially.

Briefly, the structure theoretical analytical model considers that a fictional space can only be known of if and when it is represented by signs. These signs are materialized on some physical support. Thus, there are three spatial instances, or 'types of space' in this construction: the 'imagined space', the 'utterance space' and the 'material space'.

Imagined space

The 'imagined space' is the fictional space, an immaterial space. The imagined space of a game is not always a narrative space, but the idea is similar to G. Genette's concept of "diegetic universe". In the revised edition of his book *Narrative Discourse,* Genette cared to explain that the focus of his concept of *diégèse* was the space, not the narrative, so "the diégèse is therefore not the story but the universe in which the story takes place" (Genette, 1989: 17-18).

Utterance space

The 'utterance space' is the space of the representation itself: not the physical support, the object 'screen', but the space of the significant, the visual elements of an image.

Material space

The 'material space' is where physical things exist: the body of the player, the equipment he uses to play, the objects surrounding him, etc. Due to our Cartesian inheritance, this category seems to be less important or simpler that the previous ones. Attention to materiality seems to be a naïve and superficial approach that reduces the elements that exist to their appearances. However, due to the inseparability of the body and the mind, some of the main keys to understanding the spatial experience of games are in the material space.

The spatial experience of analog media

The idea of immersion did not originate with games and not even with visual media. One of the most famous expressions referring to a related type of spatial experience comes from literature, more specifically, from poetry. This is the expression "willing suspension of disbelief", coined by Coleridge at the beginning of the XIXth century. Coleridge was referring to the writer's ability to create a "semblance of truth" as a condition for the involvement of the public with a fictional narrative. Nowadays, this involvement is usually understood as a suspension of the critical capacity of the reader and linked to a spatial experience similar to the idea of immersion. The signs used for writing (letters, characters) are visual and their organization on the page is spatial: an utterance space. The page itself exists in the material space. An immersive experience of reading would require that these two levels of mediation are ignored and only the imagined space, immaterial, is taken into account.

Tridimensional space can be represented in two dimensions in many ways in. One, perspective, has been accepted as the best technique for creating realistic images since the Renaissance. This lead to the hegemony of the model of vision on which it is based: the camera obscura. Crary (1992) discusses the differences between this type of representation and others, that were more popular before the 1500s. He relates the hegemony of perspective with that of a specific subjectivity. On the one hand, the *camera obscura* performs an act of "individuation" in which the observer, isolated and autonomous, is detached from the world he sees. "At the same time, another related and equally decisive function of the camera obscura was to sunder the act of seeing from the physical body of the observer, to decorporealise vision". (Crary, 1992: 245) Thus, the Cartesian subjectivity that is at the core of the idea of immersion is strong in images in perspective and in other technical images produced such as photography, cinema and television.

One of the most important elements of the representation of space in perspective is the point of view. It is the centre around which the elements of the imagined space are organized, that is, a main key for understanding the representation. The observer inside

the camera obscura is isolated from the scene, but he, the camera and what he sees are all part of the same universe. Thus, the point of view is outside the scene, but it inhabits the same imagined space as the things depicted in the utterance space. Therefore, when viewers align their points of view with the point of view of an image in perspective, they are symbolically positioning themselves in the same realm as the scene they observe. Thus, the more capable of identifying with the point of view the viewer is, the more intense the impression of being in the imagined space would be.

Although perspective had already been considered the correct and most reliable form of visual representation since the XVIth century, until the end of the XIXth century the main use of *camera obscura* was scientific. A variety of technologies of visual representation emerged at this time, and other uses of the *camera obscura* became prominent, mostly due to its appropriation by photography. Besides the attribution of realism to the perspective codes of representation, already widely known, photography profited from the strong impression of immediation inherent to the mechanization of the process of image production. The absence of an artist who created the images intensified the illusion of transparency of mediation. Light binds photographic images to reality and the technical process is hidden inside a black box, suggesting that there is no codification.

In the cinema, the hidden codes behind photography allied with time to create an illusion of movement. Films and documents from the early days of cinema suggest that handling the movement of the elements of the imagined space across the utterance space was not too difficult. The great challenge was the possibility and, later on, the requirement, to move the point of view. This changed the identification arrangement, and therefore the regime of spatial experience, in relation to that of still images. Black (1987) divides the strategies developed to deal with the requirements of moving images in two major approaches. The first attempts to transpose to cinema the unmediated experience of space and time with minimal interference, in a style that "pushed the physical limits of representation toward the extremes of phenomenal reality: a long take, a moving camera, or extreme depth of field" (Black, 1987: 40). This idea is based on a belief in the reality of the photographic image and tries to use time and movement to strengthen the 'immersive experience', increasing the similarity between cinema's utterance space and daily life's spatial experience.

The other approach does not try to guarantee the realism of the utterance space, but of the imagined space. To this end, sequences of images are fragmented in ways that are not coherent with daily life's vision: for example, the image of an object seen from a point of view is immediately followed by an image of that object from a point of view located in a position that is radically different from the one before Although counter-intuitive, this second form of realism is, by far, the most popular one (Black, 1997), suggesting that the transparency of the utterance space is less important than the coherence of the imagined space. This will be significant in explaining why compromising the transparency of the utterance space does not weaken the involvement of the player with the gameworld.

Metz (1982) considers the predisposition of the public to ignore the representation itself and concentrate in its meaning as a tendency

> to perceive as true and external the events and the heroes of the fiction rather than the images and sounds belonging purely to the screening process (which is, nonetheless, the only real agency): a tendency, in short, to perceive as real the represented and not the representer (the technological medium of the representation) (...). If the film shows a galloping horse, we have the impression of seeing a galloping horse and not the moving spots of light that evoke the galloping horse (Metz, 1982: 115-116)

Metz's description turns to a less discussed question, that of the physical aspects of the images and sounds of the film: in this quote, the light that creates the image and, by consequence, the screen on which it is projected. The desire for immediation requires that the light and the screen are ignored. The light and the screen are elements of the material space and, therefore, in order to ignore the interference of the utterance space, it is necessary to ignore the material space.

Metz emphasizes the importance of the physical ambience for the involvement with the film: the darkness, the silence, the relative immobility, that help erasing the environment and inhibit the perception of the viewer's own body (Metz, 1982: 116-119). The involvement with cinematic fiction would depend on the conditions of reception, in an environment that makes the experience of film similar to that of dream.

Watching television is a very different experience. In traditional broadcast television, the coherence of the imagined space is repeatedly challenged by the interruptions for advertisements. The utterance space tends to be more fragmented than in cinema, with more close shots and faster and sharper editing. Even the way the images are formed is different: in cinema, one looks at the screen and the light reflected on it. In television, one looks to the light that comes from the screen.

The differences that are more important for this text are those related to material space. In the typical ambience of television reception, the size of the screen, its position in relation to the body of the viewer, the general settings of the environment challenge the beliefs about the spatial experience of media. Although some people prefer to watch television with the lights off, this is not the norm. Nowadays, large screens are successful, but it is also common to see people watching episodes of television series, for example, on tablets or smartphones. Soap operas, political debates, news and even advertisement are immediately talked about in social media: people watch television, type and read comments at the same time. It is not necessary to resort to technologically sophisticated settings to find these diffuse modes of television reception: many Brazilian homes have a small television set in the kitchen, frequently positioned in an unfavourable position in relation to the viewer (for example, on top of the fridge). People cook and eat while watching television and their involvement does not appear to be compromised.

This regime of involvement with media has been called "television situation" (Fragoso, 2000). Despite the reference to Metz's "filmic situation", watching television clearly is not a dream-like experience as Metz proposed for cinema: television images are bright, often seen in small screens and editing is highly fragmented. The utterance space

is too prominent to be ignored. Also, television reception does not presuppose that the perception of the material environment is not necessarily diminished or that the body of the person watching television remains still. These characteristics suggest that a new level of refinement of the "fictional capacity" (Metz, 1982) has been reach and that television can have played an important role in the development of cognitive abilities required to relate to a more complex media: games.

The spatial experience of games

The interactive possibilities of digital media appear to be behind a revival of the idea of immersion, which has reached new degrees of popularity with games. In game studies, criticisms of the idea are accompanied by searches for more appropriate concepts to explain the spatial experience of games. Two of the best known proposals are "double consciousness" (Salen and Zimmerman, 2004) and "flow" (Csikszentmihalyi, 2009).

Salen and Zimmerman (2004) related their proposition to the understanding of play as metacommunication developed by Bateson (1990). In Bateson, play involves two levels of information, in which the game world and the actions and events that take place during play are at the same time said and known to be real and not real. Bateson's vision of play as metacommunication was born from an observation of animals playing and do not necessarily involve technical mediation (Bateson, 1990). Salen and Zimmerman's double consciousness is discussed in the more specific context of games. This allows them to see the parallel between double consciousness and the double logic of remediation (Bolter and Grusin, 1999). In the latter, the experience of playing games is a mix between the desire for transparent immediacy, which Salen and Zimmerman relate to sensorial representation, and the hypermediated awareness of the techniques and technologies required for playing a game. By recognising the importance of the role of the former in the experience of a game, the authors are clear that their critique of the "immersive fallacy" is not a total rejection of the idea of immersion, but of the way it is "overemphasized", shading the importance of "the diverse palette of experiences games offer" (Salen and Zimmerman, 2004: 452-453). This diversity will be the focus of the next section of this article.

Douglas and Hargadon (2004) understood immersion as one of many modes of involvement with games or other media. For them, the immersive experience corresponds to complete absorption in the narrative[1] different to engagement, which would result from adopting a position external to the game, characteristic of situations that involve challenges and cognitive effort. Brown and Cairns (2004), on the other hand, understood engagement as the lowest level of involvement with a game. Cognitive investment can lead to a second stage, in which the game directly affects the emotions of the player. This second level, that they call 'engrossment', is the turning point towards suspension of disbelief and 'total immersion'. In this last stage, the player is so involved with the game that reality no longer matters.

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1 They refer to "narrative schemas", a schema being "a cognitive framework that determines what we know about the world, the objects it contains, the tasks we perform within it - even what we see" (Douglas and Hargadon, 2004: 194)

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Csikszentmihalyi described a similar type of involvement as flow, "the feeling of being intensely engaged in an activity for its own sake. During flow, the passing of time seems to disappear due to the deep focus of the activity and the sense of time becomes distorted" (2009: 71). The idea of flow was not developed in terms of involvement with media, but of activities in which the involvement of the body is more explicit, such as sports. Despite this initial advantage, the notion of flow is weakened by its Cartesian premises[2] and by the circularity of the arguments presented by Csikszentmihalyi. Flow is a powerful insight, rich enough to be developed into a solid concept. However, its wide and prompt adoption raises doubts about whether this idea will not degenerate back to the paradigm of immersion instead.

Calleja, 2011 proposed a new meaning for the word "incorporation", with which he attempts to overcome the paradoxes of immersion without resorting to opposing "the real world and virtual world", that is, the material space and the imagined space.

> We can thus conceive of incorporation as the absorption of a virtual environment into consciousness, yielding a sense of habitation, which is supported by the systematically upheld embodiment of the player in a single location, as represented by the avatar (Calleja, 2011: 169)

This notion of embodiment of the player on the avatar resembles the identification with the point of view of perspective. However, different to perspective's point of view, the existence of the avatar is explicit; in many cases, its image can be seen in the utterance space, calling attention to its mediating role. Incorporation also turns the direction of immersion 180 degrees: instead of the player's consciousness *entering* the imagined space, it is the imagined space that *is absorbed into* the player's consciousness. This reversion also calls attention to the utterance space: being fictional, the imagined space can only be "absorbed into consciousness" if represented as words, images or sound. This notion of incorporation changes the focus from the relation between the player and the imagined space, as in the idea of immersion, to that of the player and the utterance space.

Interfaces

In the 1980s, B. Laurel claimed that "interactivity exists on a continuum that could be characterized by three variables: frequency (how often you could interact), range (how many choices were available) and significance (how much the choices really affected matters)" (Laurel, 1993: 20). In the 1990s, she reconsidered:

> Optimizing frequency and range and significance in human choice-making will remain inadequate as long as we conceive of the human as sitting on the other side of some barrier, poking at the representation with a joystick or a mouse or a virtual hand. You can demonstrate Zeno's paradox on the

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[2] The Cartesianism is explicit, for example, when Csikszentmihalyi says "[o]f course my own self exists solely in my own consciousness" (Csikszentmihalyi, 2008: 34).

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'user' side of the barrier until you're blue in the face, but it's only when you traverse it that things get 'real' (Laurel, 1993: 29-30).

This outspoken assertion expresses with unusual clarity the most fragile point of the idea of immersion. For "things to get 'real'", as Laurel wants, the player would need to act directly in the gameworld, without the interference of interfaces.

This would require that players were capable of reaching from the material space to the imagined space, which is immaterial. This feat implies crossing the borders between ontologically different types of space and, therefore, it is not possible without the intervention of the interfaces. This is the role of the interfaces: they transform actions in material space into events in the imagined space. These events are known to the players because of the intervention of other interfaces that operate in the opposite direction, representing the state of the gameworld in words, images or sounds. Thus, interfaces can be thought of as translators that make it possible to travel across the three types of space.

Hardware interfaces

Hardware interfaces include the input devices and also the output devices. Input interfaces, such as mouse and keyboard, gamepads and movement sensors, for example, translate the movements of the body of the player, in material space, into data compatible with the processor, that results in the changes in the imagined space[3] Those changes in the imagined space are translated for the player as sounds or images, for example. These sounds and images *form* the utterance space, which needs its own physical support, an output interface, such as a screen, to exist in the material space, the only one of the three type of space to which the sensory apparatus of the player is sensitive.

Interaction with game hardware interfaces is different from that which is established with the hardware of other media, such as cinema and television. Players *have* to *act* upon the hardware interfaces and this changes the conditions for the 'disappearance' of the materiality of the equipment. The differences between material space and imagined space become more evident in games: the movement of a finger on a controller destroys a mountain in the gameworld. The description, sounds or images of the crumbling mountain comprise the utterance space, realm of the software interfaces.

Software interfaces

Agency requires that players are continuously informed not only of the *effects* of their actions, but of the range of *possibilities* of action available and of the current *status* of the gameworld. It also necessary to inform the processor *which* elements their actions are aimed at. Thus, more than the content of the gameworld needs to be represented on

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[3] Therefore it is the processor, and not the interface, that really translates between the different types of space. However, translations that take place at processing level are not perceived by the players and therefore can only have an impact on their spatial experience after another layer of translation, by the interfaces. For the player, whose experience is the theme of this text, everything happens as if the interfaces were the translators across the three types of space.

the utterance space. Hints about the gameworld logic, mechanics and structure are necessary for the player to know what he *can* and *should* do. Additionally, the utterance space must include ways for the player to inform *what* actions they want to perform, *when and where* in the represented world these actions are supposed to take place. These are the roles of the software interfaces, which share the utterance space with the signs (sounds, images) of the imagined space.

Software interfaces can be presented over the gameworld or integrated to it, in various degrees. Either way, the utterance space is shared by the signifiers of two sets of signs: one representing the imagined space and the other the software interface.

Interactions and crossings

In the previous sections, the relation between players and games has been approached mostly as interactivity. This allowed some differences between the spatial experience of games from previous media and some elements of what has been called 'game system' in the beginning of the article to be identified. This section uses a simplified model that reduces the experience of play to information exchanges between player and game. It is important to keep in mind that this scheme does not correspond to agency, which is a process in which the spatial experience of games emerges from continuous exchanges of signs and interpretations between player and game, not a sequence of signals from one to the other.

For clarity, the presentation starts with a simplified model of interactivity: a linear flow of information from the player to the game and feedback. Applied to the analytical model of types of space previously presented, that flow of information goes from the material space (MS) to the imagined space (IS) and from there to the utterance space (US). This is represented in Figure 1 (top). This is the model of immersion: the player 'goes' directly to imagined space. As already discussed, the spatial experience of media should be described differently. The public of cinema and television, for example, exists in the material space (MS) and from there, through the sensory system, experiences signs (texts, images, sounds) on the utterance space (US). The latter is constantly updated to reflect the changes in the imagined space (IS). This can be seen in Figure 1, centre, in which (em) is the person who watches the game.
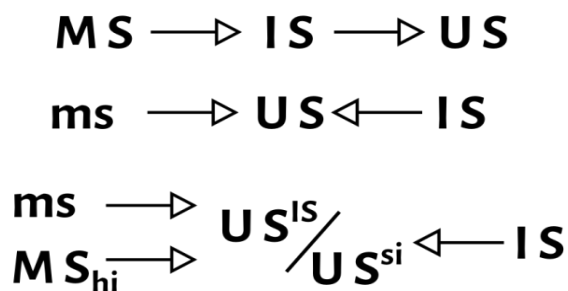
$$MS \longrightarrow IS \longrightarrow US$$

$$ms \longrightarrow US \longleftarrow IS$$

$$ms \longrightarrow US^{IS} \Big/$$
$$MS_{hi} \longrightarrow \quad US^{si} \longleftarrow IS$$

Figure 1: Spatial experience diagrams. Above, immersion. Centre, analog media.
Below, games, experienced by a viewer (ms) and a player MS_{hi})

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The utterance space of games is shared by the representation of the gameworld (the imagined space) and the software interface. To represent this division, from now on the acronym for games utterance space will be split into US^{IS} and US^{si}; where US^{IS} corresponds to the utterance space occupied by the representation of the imagined space and US^{si} to the part occupied by the software interface. US^{IS} e US^{si} are known to interlace in many different ways and different degrees. In this article, it will not be necessary to take the subtleties of the entanglement of these two layers of the utterance space into consideration[4]: representing them in a simple combination, as US^{IS}/US^{si}, is sufficient to show the central difference between the relation of players with the utterance space of games to that of the public with utterance spaces of other media. The diagrams at the bottom of Figure 1 illustrate that difference with two types of relation to the utterance space of games: that of a person watching the game played by someone else (ms) and that of the person who plays the game (EM). The latter interacts with the elements of the software interface and with the imagined space using the hardware interfaces. These are part of the material space and are represented by hi (associated to the player, MS_{hi}).

Even when many elements of the gameplay are removed, transforming it in a mere exchange of signals, this exchange is not restricted to an input from the player and a feedback from the game. The gameworld, and the elements of the software interfaces, can be timed differently in relation to players' input, or even happen independently to them. This is better represented by the internal loops included in Figure 2.
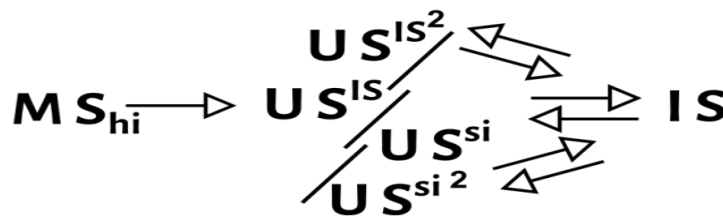
$$MS_{hi} \longrightarrow US^{IS} \begin{matrix} US^{IS2} \\ US^{si} \\ US^{si\,2} \end{matrix} \longrightarrow IS$$

Figure 2: The relation between players' input and the updates of the imagined space (IS) and utterance space (US^{IS}/US^{si}) is not one-to-one.

The configuration of the material space is essential for the spatial experience of the player. Physical limits, such as walls, furniture and other objects affect the corporeal relation of players with their surroundings and, therefore, their spatial experience as a whole, including the experience of the game space. The ambience of gameplay tends to be more similar to that of television than cinema, with sounds and images of the environment interfering in the relation between players and game. Other people can be present in the same environment, moving and communicating with each other and with the player, attracting the attention of the player to the material space. Figure 3 represents that disturbance of the experience of the material space.

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[4] It is disputable whether (or how much) the degree of integration of interface elements to the gameworld affects the experience of the player (Wilson, 2006; Llanos & Jørgensen, 2011; Fragoso, 2014).

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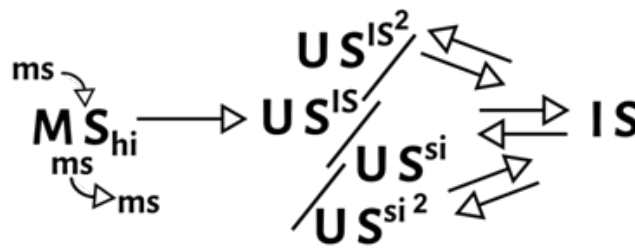
Figure 3: Objects and other people affect the spatial experience of the player. Curved lines represent social (interpersonal) interaction.

Several people can play the same game, either together or online. In the same place, they could use individual hardware interfaces for input (one controller each) and share the output hardware interface (a screen, for example). Figure 4 depicts this situation. It maintains the previous restriction of one cycle per player. The starting point of all cycles is the same location in the material space, but the interaction with the game is individual and the experience of each player will be different. All cycles converge to the same imagined space. The action of one can interfere with the gameworld as a whole and with other players. In this situation, explicit representations of players (avatars) not only intensify the relation between players and utterance space, as emphasized by Calleja's definition of incorporation (2011), but also inform each player about the status of the others in the gameworld. Finally, players in the same room often interact directly, without the mediation of the gameworld.
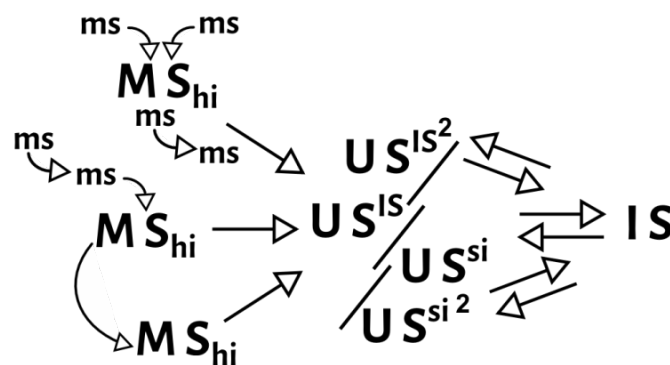

Figure 4: Multiplayer game in the same place.

In online multiplayer games (Figure 5), players are in different material spaces and cannot share output hardware interfaces[5]. All interaction cycles converge to the same imagined space, but there are several utterance spaces, materialised in each location. The point of view of the gameworld can be adapted to each player, who can have access to different information. Players of online games interact through their avatars, but also 'out of character', using communication channels within or outside of the imagined space.

[5] The factors added to the initial situation resemble the five planes proposed by Nitsche (2008) for the analysis of game spaces. The similarities result from the phenomenological approach, common in both works. The distinctions come from the differences in the objectives of each text.

Despite their intricacy, these diagrams represent a single interaction cycle. A real game situation is more complex than that, as agency is a dynamic process of *negotiation*, composed of several cycles and loops of interaction and interpretation between the player and the game system. It is not a series of linear actions and reactions, one after the other, or even events happening in parallel. Agency is a fluid process in which the player relates to the material space, the imagined space and the utterance space in complex and ever-changing arrangements. Attention converges to the utterance space, but the flow across the three types of space that the hardware and software interfaces make possible causes the impression that their borders are less defined than they really are.
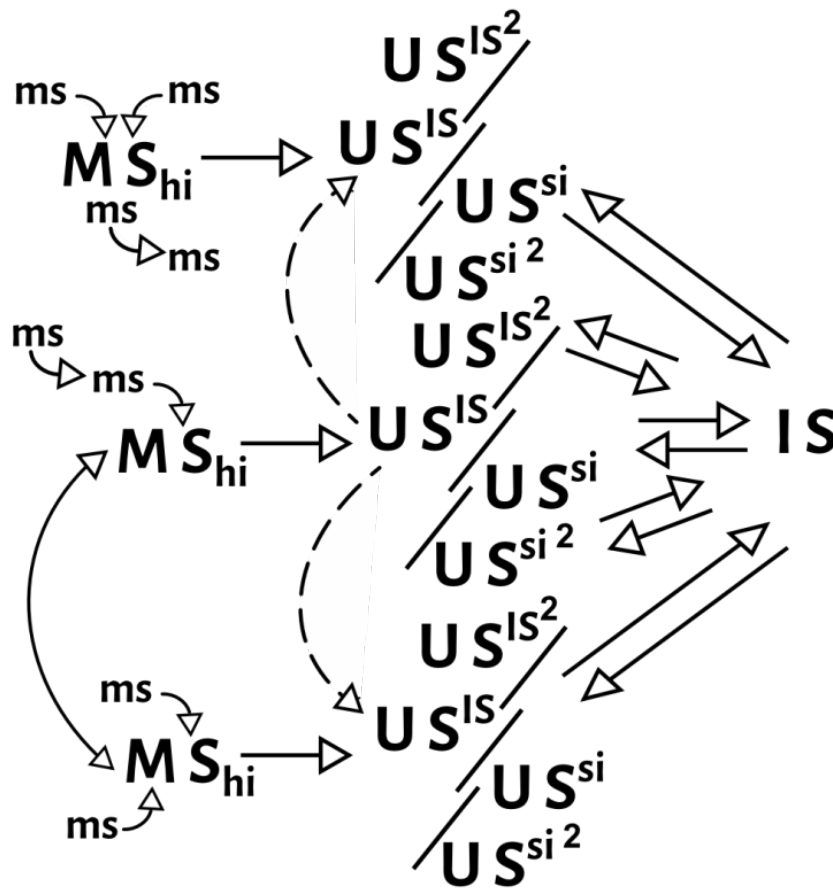

Figure 5: Multiplayer game online. Dashed lines represent in-game social interactions.

Finally, it is important to remember that these simplified diagrams represent play situations impossibly isolated. In real life, the experience of games is affected by a large number of variables. Cognitive, cultural, geographic and economic factors, for example, inform players' individual relationships to a game, their repertoire of spatial experiences with other media and even their spatial perception in daily life. However, this discussion is beyond the scope of this text.

Conclusion

This article discussed the spatial experience of games based on three analytical categories, or types of space: the imagined space, that is the fictional universe; the utterance space, that is the representation as text, image, or sound, and the material space. The analysis was contextualized in relation to the spatial experience of other media. This allowed understanding of the spatiality of games according to their mediatic qualities.

Agency was considered to be the distinctive characteristic of games, understood as a dynamic and continuous process of symbolic exchanges between players and game systems. Game systems being composed of the contents and structure of the game-world, their representations as text, image or sound, the technological instruments used for interaction, the player's body and other elements of the material space.

A brief review of the characteristics of perspective representation revealed similarities and differences between visual media that affect their spatial experience. The ideas of suspension of disbelief and immersion were shown to be more sophisticated than the naive interpretation that they have acquired through popularization, which is that of the decorporalisation of the subject who then crosses the boundaries of the representation to experience the imagined space from within. Other proposals for the understanding of media spatial experience, more specifically games, were also discussed. Despite having been formulated to reject the fallacy of immersion, double consciousness ends up accommodating it in a conception in which the spatial experience of the player oscillates between the imagined space and the material space; and the utterance space is not taken into consideration. Despite being widely adopted, the notion of flow has shown itself to be underdeveloped and inadequate due its Cartesian basis. A specific idea of incorporation, previously proposed in game studies literature, recognises the relevance of the utterance space in the interaction of the player with the imagined space. However, as with the others, this proposal does not consider aspects related to fictional capacity that, having been established over centuries, provides the interpretive basis for the representation strategies of all media, including games.

Spatial experience in games was analysed through the application of the theoretical model of three types of space to an extremely simplified hypothetical game situation, represented by a schematic exchange of information, comprising a single cycle of interactivity, triggered by the player. The inclusion of the multiple elements that compose the game system revealed a spatiality composed by multiple cycles of material and symbolic interaction, tightly interwoven. This is made more intricate by the dynamic and non-linear character of agency. The interactions of the player with the game system occur within and continually traverse between materiality, imagination and the representation. The spatial experience of the player results from the complex and dynamic composition of these crossings of the limits of the imagined space, the material space and the utterance space. ✑

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Sponsorship

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