

Beyond God's Eye: on the Reliability of Gameworld Images

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ABSTRACT

This article questions the influence of visual enunciation of gameworlds on players' spatial practices. It begins with a reminder that images are not naïve, followed by a brief review of the literature about the modernist ideological charge of two types of images widely used in games: maps and perspective projections. Considerations about the mediating role of game images leads to the hypothesis that games highlight the inseparability of the spatial practices known as mapping and touring (de Certeau 1984; Lammes 2008, 2009, 2015, 2018). The ideas are exemplified by the combined uses of maps and perspective images in 5 games. Results indicate that maps and central perspective reify Modern values and beliefs. They are more likely to challenge the stratification of spatial practices when encountered in combination or in intermediate forms such as oblique projections. Their potential is intensified by synchronicity and by releasing control of the point of view.

Keywords

visual representation, maps, perspective, mapping, touring, spatial practices, digital games

INTRODUCTION

In this article, we address questions related to two types of visual enunciations of gameworlds: maps and perspective projections. We are not concerned with the images *per se*, but how their modernist ideological charge affects knowledge about game spaces and what they inform players about their relation to the gameworlds.

The departure point is that the use of codes considered realistic when applied to physical space does not mean that those images bring imagined 3D worlds to view "as if they were real". As discussed in the following sections, maps and perspective images do not naïvely mirror physical space either: they make propositions about it. When used in digital games, they transpose those propositions to game spaces. Hence, it is relevant to review what is known about the values and beliefs inscribed in those types of visual representation.

On the other hand, sharing projection codes does not erase the differences between images in games and in other contexts. The need of theoretical resources capable of taking into account the ontological status of gameworlds and the possibilities and requirements of gameplay led to de Certeau's notion of "geographies of action" and its derivations (1984). Previous authors have successfully applied ideas from that framework such as "map" and "tour" to studies of players' spatial practices. Amongst those, Lammes (2008, 2009, 2015, 2018) recurrent hypothesis that the presence of

Proceedings of DiGRA 2019

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maps in digital games promote the hybridization of mapping and touring was of particular interest to us.

As we understand them, the two practices are inseparable¹. They are perceived as independent categories due to the Modern cognitive disposition to interpret reality in terms of dualisms. However, if mapping and touring are not separable, it does not make sense to talk about their hybridization, as proposed by Lammes and her co-authors (2008, 2009, 2015, 2018). For this reason, we propose a variation of those authors' hypothesis, according to which games do not promote the hybridism of mapping and touring: they highlight the interdependence of those two practices, calling attention to their hybridism.

By expanding the inquiry to the combination of maps and perspective projections, we consider the correspondence between the elevation of point of view and emphasis on either practice, as suggested by de Certeau: tour at ground level, map at maximum height. We also introduce aspects specific to the context of our analysis: unlike de Certeau, who was concerned with daily practices, our attention is directed to images encountered during gameplay. This brings to the fore the graphic qualities of those images, the variations in the mobility and control of the point of view and the different combinations in which maps and perspective images are presented to the player.

IMAGINING THE WORLD

As previously stated, we will consider two types of visual representations of gameworlds: maps and perspective images. The first step in this direction is conceptualizing and differentiating them. The task is more challenging than it appears. Maps and perspective images share the same intention: representing 3D space on 2D surfaces as accurately as possible. They also resort to the same toolbox: Euclidean Geometry. In both cases, the referent can be physical (cartography and photography) or fictional (drawing, computer graphics, digital games).

As a convention, in this text, “map” will be used to designate vertical projections, or flat projections created to convey geographic information. At certain points, they are also referred to as cartographic images. The most evident difference between flat, vertical projections and perspective projections is that the point of view is identifiable in the latter. Defined by this feature, perspective encompasses various types of projections, such as central perspective and oblique projections.

The word “representation” and its variations are used in this text to avoid disrupting the flow of reading, not to imply that we subscribe to naïve perceptions that they “stand for” their referents in an objective and sufficient way: it is a primary assumption of our study that they do not. However, we did not see reason to avoid those words, as even the so-called “non-representational theories” (Thrift 1996) do not deny the existence or even the relevance of representations. On the contrary: they recognise and emphasize their existence, their cognitive and material importance and their sociocultural agency. Most important for this text, non-representational theories situate them as “part of a broader process of knowledging”, emphasizing that they are always “firmly embedded in a contextually specific process of social negotiation” (Thrift 1996, 8).

We follow this path as we recognize the forces of naturalization which, over the centuries, covered maps and perspective images with a veil of pretence objectivity and sufficiency. As we see it, the most superficial layers of filters and distortions of images and verbal descriptions are relatively easy to perceive. Connotations and other types of context-related content tend to be more subtle. Long-term and widespread

sets of beliefs are the hardest to identify, especially those inscribed at signifier level. In the next section, we present a brief review of previous literature maps and perspective projections were shown to be strong examples.

MAPS AND PERSPECTIVE

Dodge, Kitchin and Perkins could equally be talking about perspective images when they stated that the ideological charge of maps is part of their “makeup and construction – its self-presentation and design, its symbol set and categorisation, its attendant text and supporting discourse” (2009, 13). However, maps are loaded with the intention to be a mirror of world space: if doubted, a map turns into a meaningless geometric drawing. This is the starting point of the paradigmatic text in which Harley (1989) set out to disprove “the illusory belief that the map could provide a “transparent” window to the world so long as cartographic representations “accurately” corresponded to, or mirrored, the phenomena they claimed to represent” (Rose-Redwood 2015, 2).

The “transparent window” metaphor is more widely known in relation to central perspective images. These are no less artificial than maps and equally loaded of beliefs and values about their referents, in great part inbuilt in their codification strategies. This point was developed in Panofsky’s *Perspective as Symbolic Form* (1997, first launched in 1927). The author challenged the assumption that the principles of central perspective were analogous to human vision. Panofsky argued, for example, that perspective drawings are organized around a single fixed point, forgetting that human vision is based on two eyes, positioned side by side and are constantly moving. Even if those factors were compensated for, perspective would still not take into account the difference between psychophysiological spatial apprehension and the mechanics of image formation on the retina.

Perspective is attuned to the Copernican revolution, as it presupposes that space is homogeneous, infinite and immutable (Rees 1980, 71). It is also anthropocentric, with the point of view as the reference around which and for which the world is organized. Due to the fact that the point of view is not included in the image, remains outside the depicted world, it has been interpreted as a materialization of Cartesian subjectivity. On this respect, it is important to differentiate the geometric point around which the perspective is organized from an eye capable of viewing the resulting image. The former is in control of the latter. It is hierarchically superior, as it defines from where the scene will be observed and the conditions in which this observation will take place. In this sense, perspective always provides second-hand views; the depicted space has already been dominated by a previous sight, which guides and controls our own vision (Machado *in* Fragoso, 2005, 8).

This filter is more evident in maps, as they do not intend to correspond to human vision, but to be faithful to physical reality. Maps are not as different from perspective images as they appear. Until the Renaissance, landscape painting and mapmaking were not separate activities; there was not even a terminology available to distinguish between them (Rees 1980, 60). Despite possible initial assumptions, maps and perspective images continue to have important points in common. Both are views from external points: in the case of maps, the point of view is so external that its location cannot be identified. Maps also refer to the homogeneous space of a Copernican universe and offer themselves to viewers as objective representations. As perspective claims to be faithful to human vision, maps are supposed to be truthful in relation to their referents. The identity between the two propositions has been synthesized in Korzybski’s claim that “the map is not the territory”. The author continues: every map is at least, whatever else it may claim to map, a map of the map-maker: her/his assumptions, skills, world-view, etc (1958, xvii). In Korzybski’s

work, the word “map” is a metonymy for all human creations and forms of expression. The same is true about the allegory of the map and the territory in which Borges calls attention to how Modern Science depends on the erasure of the selective procedures and distortions to maintain the appearance of objectivity and accuracy of its models (Borges 1999).

The persistence of common points between perspective projections and maps remained unnoticed by cartography scholars (Rees 1980; Dodge, Kitchin, Perkins 2009) and art scholars (Panofsky 1997; Nuti 1994). A possible cause is that perspective projections and maps have reached their current forms after science and art had already claimed them separately. This distinction was already signalled in Ptolemy’s Geography, which mentioned “two cartographical languages (...) the mathematical and the pictorial, as typical of two different branches of representation of the world, geography and chorography” (Nuti 1994, 117). The divorce between mapmaking and painting can be identified in the continuous elevation of the point of view until the maximum abstraction of the vertical view (Rees 1980) to which we reserved the word “map” in this paper. Over the XVI and XVII centuries, a common representational strategy was a combination of cartographic principles and perspective projection which Nuti (1994) calls “perspective plan”. The similarity between those perspective plans and the use of god’s view in games is shown in Figure 1 and will return later in this article.

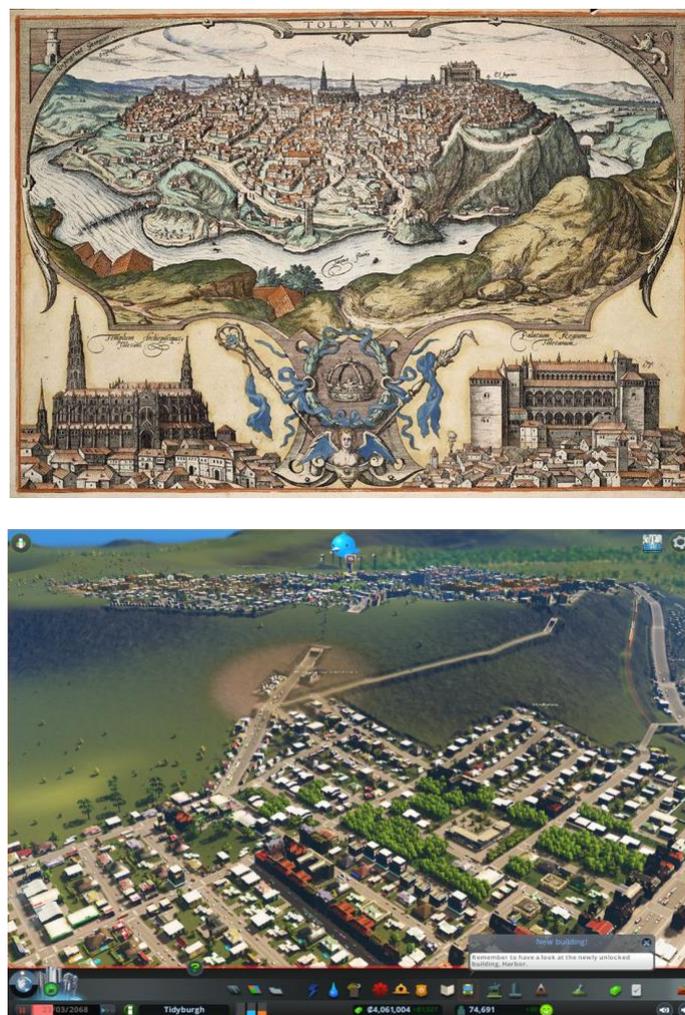


Figure 1: Top: Map of Toledo, Spain (Braun, Georg 1598). Bottom: Screenshot of *Cities Skylines* (Paradox Interactive 2015).

Despite those intersections, perspective projections, perspective plans and maps are clearly not the same. Their internal logic informs different things to the player about his place in the gameworld. This is clear in the variation of the point of view: the vertical view is meant to grant more precise knowledge, more control and great autonomy. Third person removes the player from the line of action, as inherent to the perspective code. First person, on the other hand, forces the alignment between the point of view and the player's visual field, with the intention of increasing identification and sense of presence but with greater risk of disruption (Fragoso, 2014). In the first case, players transcend the gameworld; in the second, they observe it; in the third, they are challenged by the imprecise coupling of their own vision with the perspective code. Related points were raised by Golding (2013), whose paper starts with a description of his own attraction to high points of observation in games and provided examples of how high places have been associated with power, knowledge and control in games such as *Far Cry 2* (Ubisoft Montreal 2008), *Assassin's Creed II* (Ubisoft Montreal 2009) and *Portal* (Valve 2007).

IMAGINING GAMEWORLDS

Fuller and Jenkins can have been the first to claim that the pleasure of play comes from spatial exploration rather than the game narrative (1995, 11–12). Practically as early, Aarseth (1998) claimed spatiality as the defining feature of computer games and exemplified this centrality with some examples of games. Aarseth (1997, 102) also associated the power of moving images to represent spatial relations to their adequacy for computer games. Other authors addressed questions related to the visual representation of game spaces, for example, their mediating role and potential interference on players' spatial involvement (Calleja 2011; Jørgensen 2013). This mediation is inevitable. Digital gameworlds can only be perceived and experienced when enunciated. Hence, knowledge about a gameworld is, in fact, knowledge charged with the principles, values and beliefs inscribed in the mode of enunciation.

In this article, we have chosen to concentrate on games with 3D worlds enunciated as images; more precisely, as perspective projections or flat cartography. In digital renderization, the point of view of perspective projections is usually called "virtual camera". Cameras, virtual or physical, follow the same principles as central perspective. Hence, in Nitsche's statements that "It is the nature of the camera (virtual or real) to select, frame and interpret. Through this selection, the moving image infuses the virtual world with a perspective" (Nitsche 2008, 77), the word "perspective" can be interpreted in two ways: as referring to the internal logic according to which those images are created and to the Modern values and beliefs inherent to that logic. The latter are reified in the dissemination of perspective images promoted by photography, cinema and videogames. Their inscription is stronger in games because virtual cameras do not try to capture physical space, but to render the space of 3D modelling, which is already mathematical, infinite and homogeneous: in a word, Cartesian (Fragoso, 1998).

Video game spaces are not only meant to be seen, but to be explored. To this end, the virtual camera has to be mobile and, to some extent, under control of the user. The mobility of the point of view in games has motivated comparisons between the narrative strategies in games and films (Lammes and Verhoeff 2008; Nitsche 2008). However, the differences in the visual narrative strategies of cinema and games are at least as important as their similarities (King and Krzywinska 2002). Those differences are, in great part, due to games providing some degree of control of the point of view to the player. This changes the status of those to whom the images of game spaces are enunciated: the cinematic voyeur becomes an explorer. For Lammes and Verhoeff (2008), this is the central feature of games narrativity: games stories are spatial stories, narratives of navigation and discovery, in which space prevails over time.

However, not everything in games is storytelling and it is necessary to distinguish between the two facets of game space: the architectural (navigable) and cinematic (narrative) (Nitsche 2008). The similarity between this division and de Certeau's (1984) description of everyday spatial practices will be discussed in the next section.

THE SPATIAL DYNAMICS OF COMPUTER GAMES

In his ethnographic studies of daily life practices, de Certeau compares the relationships established with objects as existing in an objective, external and inert space (a space which is "merely there") and with objects "awakened" by subjective practices which grant meaning to the space they inhabit. Their articulation results in "geographies of action", which can be expressed as "spatial stories" (1984, 115-118). Those two elementary forms of the geographies of action were described by de Certeau with the notions of "map" and "tour", as described in a study of the links between cognitive input and discourse rules by Linde and Labov (1975). In that study, the authors gathered empirical evidence according to which spatial descriptions would always be structured as touring or mapping. Tours describe paths using direction and location. They can be static (you are at the centre of the room. To the right, there is a door. In front, there is a window) or mobile (if you turn right, you will find a door, keep going in front and you will reach the window) (Linde and Labov 1975, 930). Maps describe relations between locations. They can be visual or verbal (the hall is connected to the kitchen and the living room; the living room is also connected to the bedroom) (Linde and Labov 1975, 926). It is unlikely that those descriptions would not have stricken a chord amongst those who have played online text-based RPGs (Figure 2).

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A carved wooden sign hangs over the door east into the tavern. The stables
are to the north, the tavern cookhouse is south, and Hamelin Streete lies to the
west.
It is a rainy night.
You see :
  An old drinking trough.
  An iron pump.
Obvious exits are :
North : Stables
East  : Passageway
South : Cookhouse
West  : Hamelin Streete
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Figure 2: Partial description of the Turfe Tavern Courtyard in the MUD *TerraFirma*. Active at terrafirma.terra.mud.org (01 Feb 2019).

Geographies of actions are composed by the combination of the discursive operations of the tour and the totalizing view of the map. These two approaches inform each other, composing a chain of spatializing operations which is "marked by references to what it produces (a representation of places) or to what it implies (a local order)" (de Certeau 1984, 120).

De Certeau explicitly associates mapping with scientific discourse and touring with "ordinary culture" and relates the change from Medieval to Modern cartography with the progressive erasure of itineraries. For him, each medieval map was "a memorandum prescribing actions", outlining not the route to be followed but the footprints of the journey. He exemplifies the passage to Modern cartography with the figures encountered in nautical charts produced between the XV and the XVII centuries. Those images were not meant as decorations, but as "fragments of stories", records of the events behind the creation of that map (de Certeau 1984, 120-21). Figure 3 shows different uses of such figures, with similar implications. Another example would be the previously discussed prevalence of the plan perspective in cartography up to the XVIII century (Nutti 1994). Plan perspectives, or oblique

projections, are a middle term between the supposed objectivity of the vertical point of view of the map and the subjective knowledge of ground-level experience.

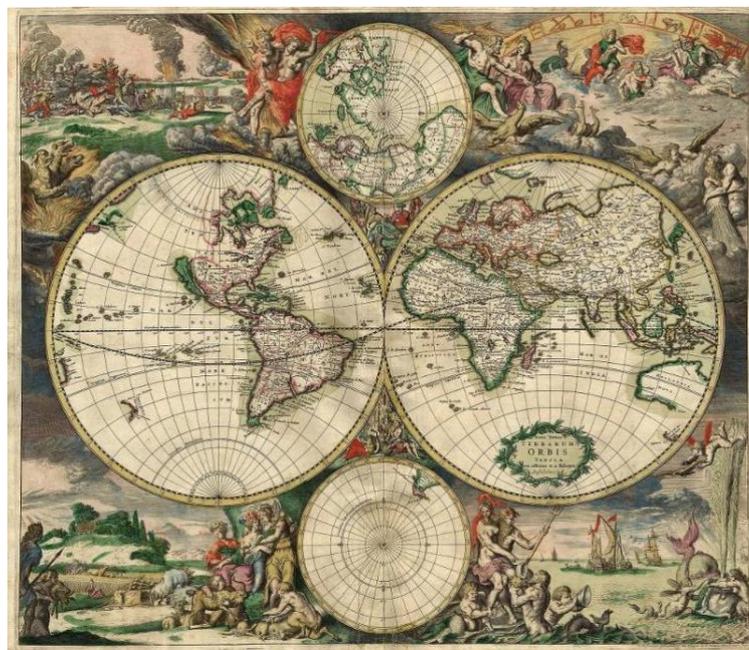


Figure 3: Early Renaissance Nautical Charts: *Teatrum Mundi* (João Lavanha, 1597-1612). Cropped. Early Renaissance Nautical Charts: *World Map* (van Schagen, 1689).

The dual structure of geographies of actions has been previously applied in studies of games. In the majority of cases, the duality is maintained through the association of tours with players' navigation and maps with objective depictions of game space (for example, Scully-Blaker 2014; Egliston 2015). In the 1990s, Fuller and Jenkins (1995) and Friedman (1998) considered the potential of maps and tours for discussing colonialism in games, a point which has returned in more recent pos-colonialistic studies (Lammes 2010; Lammes and de Smale 2018).

Golding (2013) recalls that mapping and touring are parallel to de Certeau's notions of "strategies" and "tactics". Those can be briefly explained as follows: strategies are rational practices through which empowered subjects (or groups) establish and reify their position in relation to the others. By emphasizing the distinction between one's own place and an external environment, strategies are "a Cartesian attitude". Tactics, on their turn, are distributed actions directed towards establishing the conditions necessary for autonomy. They take place within the territory where others exercise their power (de Certeau 1984, 36–37). De Certeau's perception of the strategic view of a city from a high place and the tactic experience of walking on its streets (de Certeau 1984, 91–94) was transposed to games by Golding in the following terms:

In *Assassin's Creed II* my character's knowledge of his surroundings and his effectiveness at finding tasks, upgrades and other desirable locations is directly tied to how many tall buildings I can find for him to climb. To see from above is to see in concepts, and to see in terms of knowledge, power, and influence (Golding 2013, 28).

As previously mentioned, those high points of view increase knowledge and domination at the cost of detachment. Golding acknowledged this when he commented that players "can never have such a holistic, panoramic perspective as de Certeau's strategist" (Golding 2013, 39). He attributed this to the fact that, in the case of games, knowledge of all alternate paths always remains in the hand of the designers. This perception challenges previous understandings of players as cartographers (Friedman 1998). As we see it, the limit of the comparison is not related to lack of knowledge about the gameworld. This just brings players closer to early navigators, who explored unknown regions of the globe, at once mapping and touring. The parallel has been made by Lammes (2008, 2009, 2015) and by Lammes and Verhoeff (2008) with the idea of the player as a "cartographer on tour". This idea still fails to take into account the implications of the ontological differences between the game space and the physical space. In this paper, we address one of them, which is that players' experience of the game space is necessarily mediated by enunciations. These, as previously discussed, are charged with values and beliefs which always affect the knowledge about the gameworld and, to some degree, define the relations players establish with it. With this statement we do not mean that players are at the mercy of game enunciations: the paradigm inscribed in the images of the gameworld can be challenged and counter-interpreted and challenged. However, as any move of counter-hegemony, this challenging starts with an acknowledgement of the dominant values. For this reason, we consider players to be more like guided tourists than explorers: their geographies of action and their spatial stories are their own. However, no matter how personal, these will have been always influenced by the filters inherent to the modes of enunciation.

The images of the cartographer on tour and of the guided tourist are also useful reminders that "mapping" and "touring" are not mutually excluded. On the contrary: the notion of "geography of action" is meant to acknowledge that they are intertwined daily practices. However, their instrumental use as distinct categories has proven helpful in previous empirical studies. Lammes and co-authors followed this path in analyses of strategy games and locative games, as well as map interfaces in other contexts. They recurrently concluded that digital maps promoted the hybridization of mapping and touring (Lammes and Wilmott 2018, 2016; Lammes and Verhoeff 2008; Lammes 2016, 2009). More precisely, they would reinstate the former hybridism, dismantled by Modernity. We would subscribe to a variation of those authors' understanding, according to which games highlight the interdependence of mapping and touring, providing support to notions of space less dependent of dualisms.

THE WAY WE SEE IT: EXAMPLES

In this article, we explore the idea that games facilitate the perception of the inseparability of mapping and touring in our geographies of action. The point is discussed through examples of the combined use of maps and perspective projections in games. We do not agree with Aarseth that the pervasiveness of this combination is due to an insufficiency of perspective, which needs to be “supplemented with a more schematic” 2D image (1998, 157). Flat projections suppress at least as much information as perspective; the benefit of their mutual use is that each one favours different aspects of the game spaces.

Exemplification is not meant to be exhaustive. Four parameters were used for the choice of examples. First, the compositions of maps and perspective projections, with three possibilities: integrated (the map is the flat surface where 3D props are located); intradiegetic (the map is one of the elements within the perspective projection) and extradiegetic (the map and the perspective images of the gameworld are viewed separately). Second, the predominant gameworld view, with three possibilities: vertical (flat) projection, oblique projection (god’s view), central perspective (first person and third person). Third and fourth, mobility and control of the virtual camera, as relevant. Examples were selected to maximize the number of variations and minimize repetitions. Some combinations of maps and perspective projections and of mapping and touring dynamics were encountered in more than one game. We restricted the discussion to the first example.

***Thronebreaker*: Early Renaissance Hybridism**

We start our exemplification with *Thronebreaker* (CD Projekt RED 2018), a game in which maps and perspective projections of the gameworld are never viewed simultaneously. The gameworld, the main map (extradiegetic) and complementary maps (intradiegetic) are shown in oblique projection (Figure 4). Their different status is indicated by other visual clues: images of the gameworld are more detailed and in stronger colours. Complementary maps are supposedly kept in an “inventory”, which is visualized in a separate interface. They are mentioned in dialogues which justify their appearance: roughly sketched and monochrome.



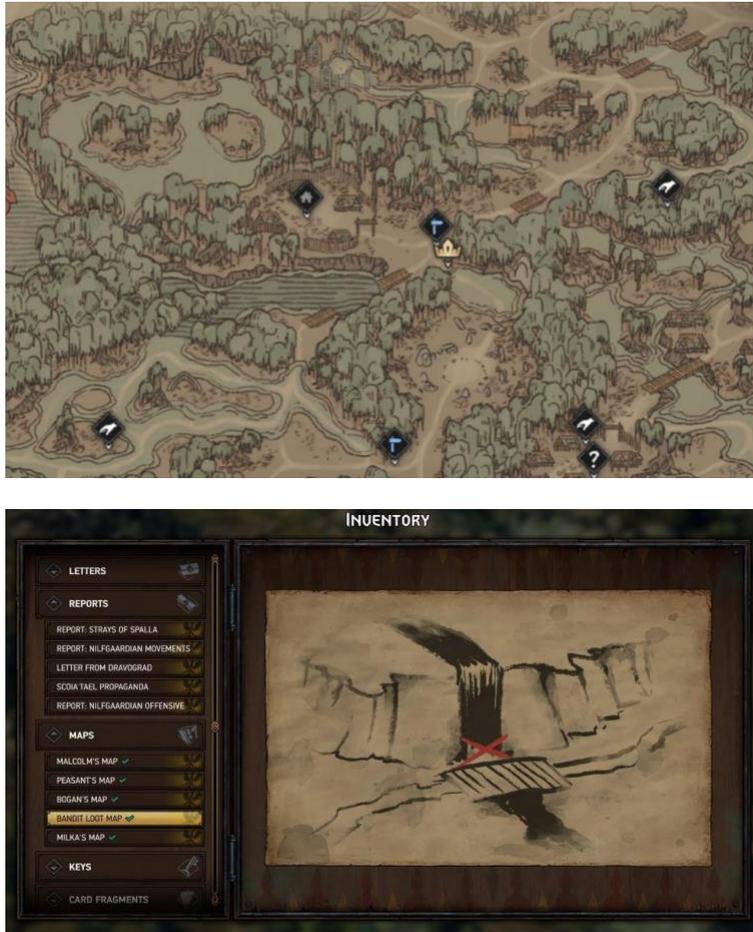


Figure 4: *Thronebreaker* (CD Projekt RED, 2018). Top: screenshot of the gameworld, cropped. Centre: screenshot of the main map, cropped. Bottom: treasure map in the inventory interface.

The main maps always open with a quick animation of a papyrus unrolling on top of the view of the gameworld, reinforcing that they are cartographic representations. They are not any type of map, but perfect matches to the examples of plan perspective cartography in the XVI century provided by (Nuti, 1994). There are also common points with de Certeau's description of maps from the same era (de Certeau, 1984, 120-21), in which the bidimensional images surrounding each map are related to an event which took place in that region (Figure 5). Combined with their intermediate level of graphic detail and the mild colours, these images reinforce the identification of those navigational maps with the nautical charts and perspective plans of early Renaissance. The superimposed bidimensional icons disrupt the historical reference, but they are also markers or the spatial dynamics, revealed as the area is explored. Few of those markers can be used for navigation and, when selected, they do not move the map avatar, but send the player back to the gameworld. This oscillation between images could hinder the perception of hybridism between the events in the gameworld and the places in the main map. This is compensated by the use of oblique view, demonstrating the power of the plan perspective.



Figure 5: *Thronebreaker*: Map of Aedirn. Yama Orce, 2018.

In certain games, isometric and oblique projections appear to be used as geographical representations. Closer analysis reveals that those are usually flat surface maps, tilted to accommodate the visualization of other elements in perspective projection.

***Europa Universalis IV*: Integrated Reification of Modernity**

We start our examples with *Europa Universalis IV* (Paradox Interactive 2013), a game in which the link to Modernity is clear from the thematic as an integration between map and perspective projection. In most strategy games², oblique projections appear to be used as geographical representation, but closer analysis reveals that those are flat surface maps, inclined to accommodate the visualization of other elements in perspective projection. This is made evident by the predominant point of view of *Europa Universalis IV* (*EU IV*) being practically vertical. By zooming in to examine their units, players lower the point of view up and the projection becomes oblique. The mini-map is not strictly a navigational map: it locates the area of the main map exhibited on the main screen at a given point, not the players' units. However, it only shows areas already explored, starting from a rather restricted region and growing to a full view of the world. During this process, it promotes a convergence of mapping and exploration or, paraphrasing de Certeau (1984), it becomes a “memorandum of past actions”. Once completed, the mini-map loses subjectivity and becomes a Modern cartographic chart. The main map and the mini-map on the bottom right are consistent with well-known versions of global cartography. At the beginning of the game, players are informed of a date and invited to choose a region from which to start. The amount of knowledge about other parts of the world is supposedly consistent with the situation in that area at the time. This converges with the identification of the global map, reinforcing the suggestion of accuracy. The result is the intensification of the interplay between players' geographical and historical knowledge and game information.

The consistency between the main map and the mini-map visually reinforces the suggestion of geographic accuracy. Both are an adapted version of specific cartographic projections which are known to depict the Northern Hemisphere is disproportionately large in comparison to the South. Its inherent political bias has been denounced by geographers concerned with the way in which it reduces the significance of Africa and Latin America, for example, in favour of areas such as

Western Europe, the United States, Canada and Siberia (Monmonier 1991). It is true that the use of other projections would have introduced different distortions (Figure 6), but merely allowing changes to the orientation or centring of the mini-map would have been thought-provoking.

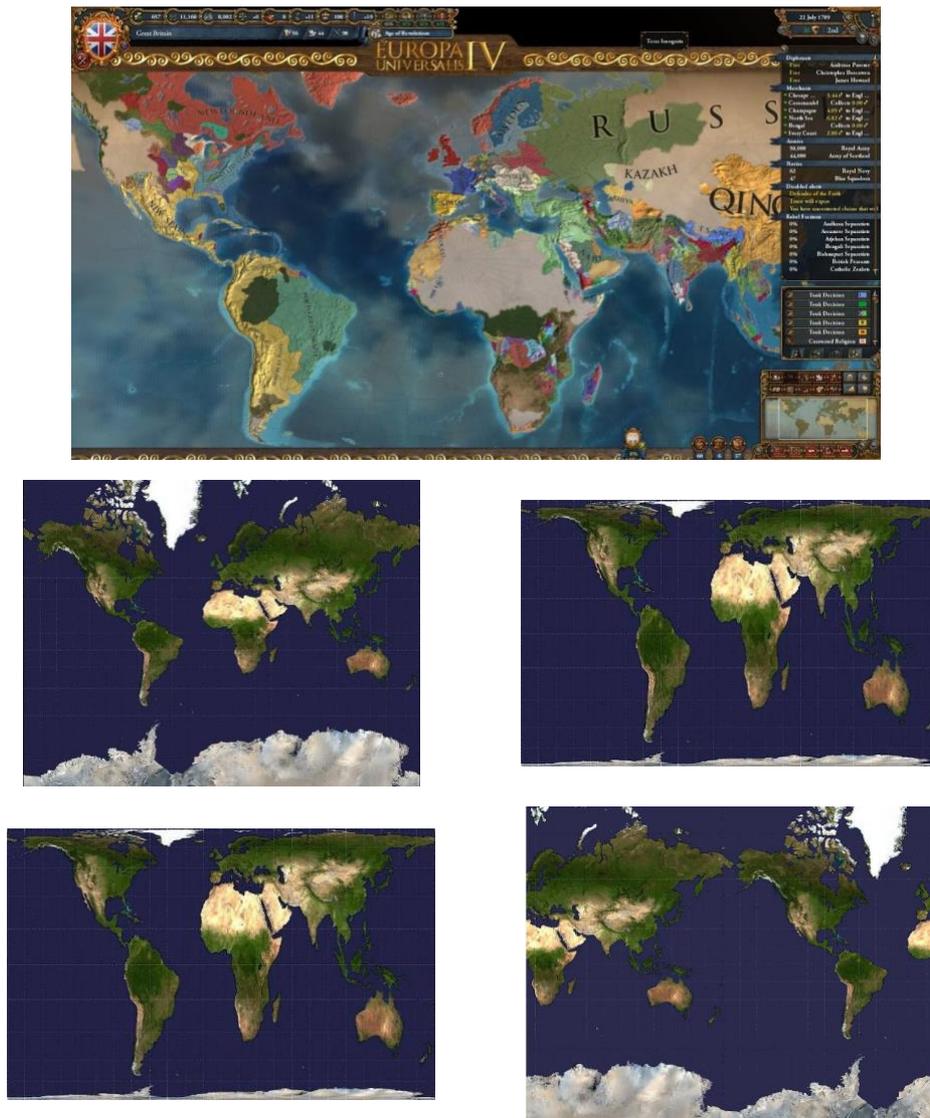


Figure 6: Top: Screenshot of *Europa Universalis IV* World Map. Centre Left: Mercator Projection (1569). Centre Right: Gall-Peters Projection (1885-1970). Bottom Left: Gall-Peters with Southern Hemisphere on top. Bottom Right: Mercator centred on the Pacific Ocean.

An important disruption occurs when players zoom in, given the contradictory scale of units in relation to the supposedly accurate global map (figure 7). The large size of the props is a necessary condition for the photorealistic rendering, therefore most likely an aesthetic decision. Other implications were apparently not intended: for example, the radical shortening of distances, which gives the impression that humans are fated to dominate all areas of the globe. The same is true in relation to nature, which has lost exuberance: forests have few trees and those are smaller than humans. This inverted proportion minimizes the effects of the exploitation of natural resources: not only there are no environmental consequences, but the units created are larger than the resources used in their creation. In other words, humans appear to be more important than nature and capable of using natural material in ways which are

not only harmless but advantageous. As such, the zoomed in images from *EU IV* can be interpreted as a visual representation of the Faustian spirit of Modernity (as described, for example, by Berman 1983).



Figure 7: Screenshot of *Europa Universalis IV* (zoomed view).

Elder Scrolls V Skyrim: Tactic Mapping, Strategic Touring

The world of *Elder Scrolls V: Skyrim* (Bethesda Games Studios, 2011) is rendered in central perspective. This and the high level of graphic detail, with refined textures and careful illumination, indicate the intention of representing the gameworld as near as possible to human vision. As previously discussed, even with impossibly perfect algorithms, the best possible result would be limited by the constraints and distortions imposed by the virtual camera (“photographic realism”) and by 3D modelling. With this in mind, it is possible to trace parallels between spatial exploration during gameplay and daily practices. First person and over-the-shoulder views reserve holistic knowledge to the game designers and place the player at ground level. This situation is analogue to de Certeau’s explanation of strategy and tactics, with designers, as urban planners and city administrators, strategically keeping the gameworld under their control, and players tactically navigating the game space as best as they can (1984, 92-95).

The first-person point of view is intended to promote maximum approximation between the gameworld and daily life. This stumbles on the artificiality of central perspective in ways which surpass the promises of VR technologies: the hierarchical inferiority of the players’ eyes in relation to the point around which the image is structured, for example, is identifiable in various circumstances.

The third person point of view releases the grip on strict realism and start to allow players to benefit from the advantages of visual mediation instead of being locked in it. The misalignment between the points of view of the players and the avatar in over-the-shoulder views promotes a degree of detachment without compromising the tactical requirements of the ground-level navigation. The implications become more intense as the player is increasingly allowed to take control of game’s point of view. As previously discussed, raising the virtual camera increases knowledge about the surroundings at the cost of detachment. World explorations in oblique views facilitate the perception of the inseparability between mapping and touring. This is much intensified by the possibilities of moving the virtual camera around the avatar, which provides strategic advantages such as the view of threats which are out of the avatar’s line of sight (Figure 8). Hence, the mobility of the virtual camera in *Skyrim* puts

players in control of combining the strategic advantages of mapping and the tactical advantages of touring responses.

Elder Scrolls V: Skyrim also includes intradiegetic and extradiegetic maps. The former can be seen in-world. Players can move the point of view around the surface of the table, seeing the map from different angles. Flag colours indicate which faction is in charge of each location, changing as the plot develops. The flags of unexplored areas remain grey, in explicit reference to players' exploration of the gameworld. This code of colours adds touring qualities to a map which would otherwise be strictly Modern. Despite this combination of vertical projection and touring dynamics, the "realistic" use of pegs and flags levels the evidence of hybridism with out-of-game experience.

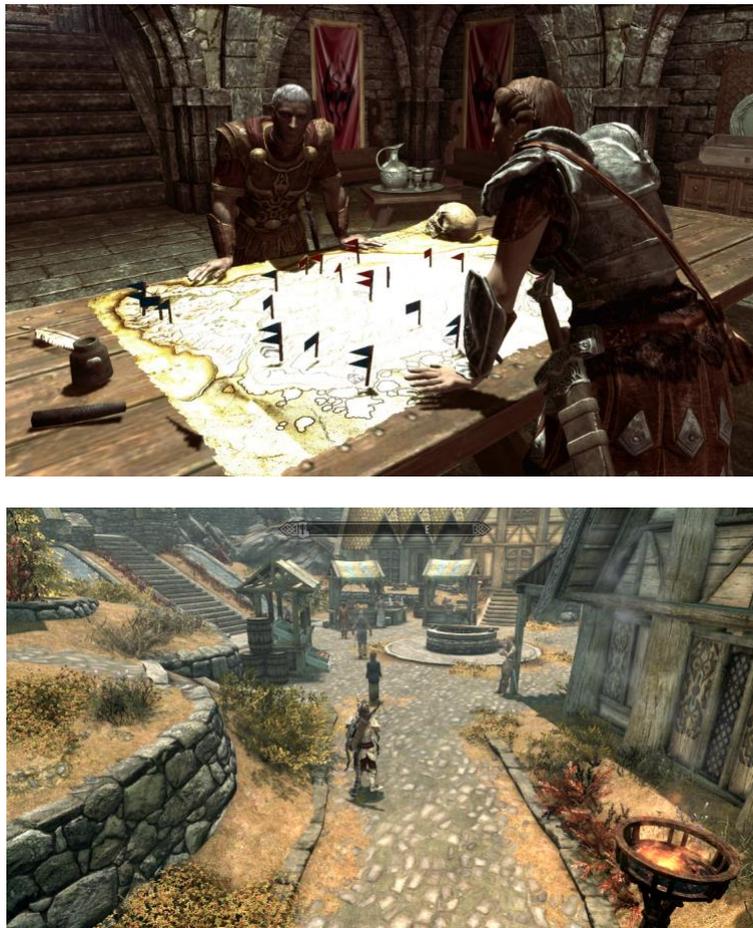


Figure 8: *Elders' Scrolls V: Skyrim*. Top: First person view with intradiegetic map. Bottom: Third-person, superior point of view.

***Minecraft*: Intradiegetic Synchronicity**

This is not inherent to intradiegetic maps or to the central perspective view. Both features are encountered for example in *Minecraft* (Persson, M. 2011), without the same effect (Figure 9). The difference is that, although players cannot interact with this *Minecraft* map, it is responsive. The map is in the avatar's hands and responds to the exploration of the gameworld by displaying new, explored areas. As in the similar case of the mini-map of *EU IV*, this grants *Minecraft*'s intradiegetic map a high degree of subjectivity. The first-person perspective help blurring the lines between mapping and touring, making their interdependence particularly clear.



Figure 9: Screenshot of *Minecraft*.

Minecraft is also a good example that graphic realism is not a condition for the effectiveness of first-person camera, an important point when taking into account the praise for realism inherent to central perspective and identification with the point of view.

Additionally, *Minecraft* is also an example of reification of some Modern values previously highlighted in our description of *EU IV*, such as expansionism and human dominance over large amounts of natural resources. *Minecraft* also includes a colonialist and dualistic representation of indigenous peoples, in which players assume a superior attitude towards the villagers, "noble savages" easily conquered and dominated, and fight to destroy the monsters, a second native group who reject the presence of the intruder in their territory.

The Legend of Zelda Wind Waker: Subtle Hybridisms

Another combination of low graphic realism and a dynamic mini-map is found in *The Legend of Zelda: Wind Waker* (Nintendo, 2002). This gameworld is an archipelago of small islands. When the avatar is on sea, the navigational tool is a compass, located at the bottom left. When on land, the compass becomes a mini-map of the regional map, with a yellow arrow marking the position and orientation of the avatar. This mini-map is extradiegetic, but dynamic, providing a relatively subtle perception of hybridism.

The main map of *Wind Waker* is used on a separate screen, but it is intradiegetic: it is mentioned in dialogues and can be seen in-game (Figure 10). It is navigational and strictly geometric: a 7x7 grid. This facilitates navigation in a gameworld which is mostly water, in principle at the expense of excessive detachment. However, knowledge of this map varies according to the spatial dynamics of gameplay: several parts of the grid have to be drawn in-game by a specific NPC, which must be encountered each time. The effect is similar to *Minecraft*, although not so intense, given the lack of synchronicity between touring and mapping.



Figure 10: *The Legend of Zelda: Wind Waker*: Top: World view Centre: Main map. Bottom: World view with Mini-map.

Despite their small number, these examples provided sufficient variation to provide solid indications: the first of which is that different combinations of maps and perspective images can be more or less prone to reify or challenge established values and beliefs. The same is true in relation to the individual occurrence of either type of image. However, there is enough flexibility to prevent rigid associations between types of propositions and types of or combinations of images. Overall, it is possible to say that the intermediate qualities of oblique projections and third person camera make them more likely to break free of the rigid prescriptions of the perspective code

and of the map. Releasing control of the point of view to the player has a similar effect, with the added advantage of promoting simultaneous use of strategical and tactical thoughts. The synchronicity between views and events in the gameworld (perspective projection) and on the map (flat projection) appears prone to highlighting the interdependence between mapping and touring.

CONCLUSION

The intention of our analysis was to bring to the fore questions related to the ways in which visual enunciations affect knowledge of the gameworld and how they influence players' spatial practices. To this end, we started this paper with considerations about the ideological charges of the two types of images selected for our study: maps and perspective images. In both cases, we identified the reification of values and beliefs characteristic of the Modern scientific paradigm. Our results suggest that this implicit content can be challenged or reinforced by the combination of those two types of images with one another or with as well by the presence of other visual strategies. In our examples, reinforcement of Modern values was most evident in *Europa Universalis IV*, deriving especially from the disproportionate representation of humans and human creations in relation to nature. *EU IV* also subscribes to Modern values from its expansionist and Europe-centered thematic. In the other four examples, the link with modernity is more subtle.

Intermediate strategies of representation were identified in early Renaissance cartography: the plan perspective and the illustrated nautical charts. The former made extensive use of oblique projections. Also known as “bird’s eye” or “god’s view”, it was used in all enunciations of the world of *Thronebreaker*. Additionally, the main map of this game resorted to the use of plot-related images, as encountered in nautical charts, facilitating the identification of the map with the game events. Combined, the two strategies overcame the dissociation between “mapping” and “touring” (de Certeau 1984) inherent to the extradiegetic status of this map. It is interesting to note that this integration can be out of reach even for intradiegetic maps. One example was encountered in *Skyrim*, a game in which the possibilities of the intradiegetic maps were limited by the intention of realism.

The first-person point of view is meant to be an important contribution for the sense of realism in this struggle for realism. However, the impositions of the perspective code limit the parallels between *Skyrim* and daily spatial practices, potentially calling attention to the artificiality of that mode of enunciation.

Camera movement was also used in new forms of inscription of tours in maps. They can respond to the exploration of the gameworld, with new areas being revealed as they are explored (*EU IV*, *Minecraft*) or when the conditions for exploration are met (*Wind Waker*). Even when a very small area of the map is visible, synchronous representation of the movement of the player on the vertical view favours the perception of the relation between the tour and the map.

The basic assumption of this study was that visual representations do not naïvely bring gameworlds to view: they make propositions about those worlds and position the player in relation to them. As this conviction underlined every statement, from the literature review to the analysis of our examples, it is all the more important to finish this paper by remembering that those images do not occur in isolation of all the other elements of games. First and foremost, their referents are the characteristics of the gameworlds which they attempt to bring to view. Second, those referents are not isolated; their relation to other game elements cannot be minimized, neither can the context in which those games are created and played be forgotten. Third, and most importantly, there is a difference between what a game proposes to its players and

what players do with those propositions. By focusing strictly on game images, we did not intend to undermine other factors, nor to indulge on deterministic simplifications. As we see it, understanding what the images of gameworlds inform to players is a necessary step prior to studying how players respond to those images.

ACKNOWLEDGEMENTS

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001 and the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

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ENDNOTES

¹ This understanding follows de Certeau’s own recurrent assertions that mapping and touring are not mutually independent.

² For example, *Cities Skylines* (Figure 1), *Civilization II* (mentioned by Friedman, 1995), *Age of Empires* (mentioned by Lammes, 2008).