

1. The setting-up of space in video games

The problem of the setting-up of the space in video games, translated into subjective terms, amounts to the problem of the *immersion* of the gamer into a *virtual world*. Immersion is the experience of the gamer by means of which her/his actions appear to her/him as belonging to an autonomous artistic world, to a virtual *nature* with its own laws. Not in the sense of intense absorption, but in that of incorporation (Calleja 2007, p. 134). We could consider *immersion* as characteristic of the virtual world as opposed to *identification* in traditional art, because their requisites are different. The traditional work of art offers indeed a *physis*, a ready-made world that can only be *received*. We cannot take part in the action of a film, in the structure of a painting, in the development of a symphony; we can only *identify ourselves* with a particular inner moment and attend to it in relation with the others within the piece. In this regard the traditional work of art is like an *automaton*. The video game, however, does require an action by the gamer in order to build itself internally¹. Even though the pair video game-gamer works, truly, also as an automaton (the video game is *programmed*), with regards to the gamer the way the virtual world occurs is a particular kind of *openness*² (the video game would be a *second degree* automaton). Put in another way: if we understand the video game – as usual – as a kind of interactive film, then (because of that interactivity) *it cannot offer us the narrative plot as a mere internal display, but it would previously have to model the world where that plot can develop*. The video game, therefore rather than a work or a text, is the logical space where that work will be built. We will call this logical space (only in this constructive-lawlike sense) a *virtual world*. If this *virtual world* has to work as such a *world*, the artistic mimesis will have to operate at the level of the *laws* of the world. Then the video game does not imitate things, but the laws that rule the behaviour of the things (Frasca 2003, pp. 2-4). What really matters is that the work *answers* to our action. And a meaningful answer requires to be inserted into an adequate plot of relations³. This will be a condition of the semiotic analysis. A piece of music, a play, a film are not virtual worlds in this sense because they do not allow us to get involved in the piece of music, play or film in terms of performativity⁴. The video game demands an action that *will change* the state of things showed to us⁵. The problem could be stated as such: how can we determine *internally* to the video game the actions that make sense and those that are not even seen as possibilities? Or in terms of immersion: *how do we know what we have to do and how to do it in certain situations set out in the video game?*⁶ The answer is broad and we are only considering it in its strict physical or spatial aspect here⁷. For instance, in the platform video game *Ico* a closed door *indicates* to us that another way is to be looked for, while in a video-adventure such as *The Legend of Zelda: Phantom Hour Glass* a closed door signals the *need* of a key to open it. How is



***Manic Miner* under the Shadow of the Colossus: a Semiotic Analysis of the Spatial Dimension in Platform Video Games**

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this *indicating*, this *signalling* constituted? The problem of the setting-up of the space is linked, in this way, with the problem of the *intelligibility* of the logical space in which the game consists⁸.

2. The intelligibility of space in video games

If we understand the logical space as a set of possible interdependencies of the objects of the video game (so those objects appear in it as restrictions⁹ on the action), then the logical space is the *form* of everything that can *occur* within the video game. The video game would be the resulting *event* of the inner relation between the objects. Each and every one of the objects of a video game appears as point in a net of relations, demarcations of meaning in their mutual interrelation, which direct the action. But this action actually has no other purpose than to show, to *reveal*, the mutual interrelation of these objects: when in *Silent Hill 2* it is required to combine a child's hair with a bent needle in order to obtain a key that is stuck in a drain (the key is in turn necessary to enter a lift), what is demanded is for that mutual relation between the *objects hair, needle, key* to be *made clear*. This articulation is the reason of what can and cannot be done in *Silent Hill City*. Such are the objects with which the gamer has to deal in the video game; a table, a weapon, a corridor are *functions* in the complete plot, possibilities of action¹⁰. For instance, a building in *Silent Hill Origins* is made up of several rooms interconnected in various manners by means of closed or locked doors, while a building in *Starcraft* is part of a particular technological tree of production. Objects appear in the video game, therefore, as signs of a particular function (Barthes 1985). And the articulation of those objects-signs (of a certain state of things in which we find ourselves) is what gives *meaning*, that is, it is what *signals* to us what has to be done¹¹. The video game always presents a collection of objects defined by what can be done

with them. The relations between them limit or allow certain actions that, in turn, change the state of things in that virtual world¹². The interrelation of the objects of the video game (that is, of the audiovisual *signs* of *functions*), fits the interrelation of the possibility of actions in the video game. That is, since the objects-signs categorically determine the logical space of actions that are possible with them, the *possibility of such objects-signs* is the *possibility of meaning*. That meaning is what will make it possible to complete the video game¹³. What has to be done in a video game is determined by the constitution of objects-signs that appear in it: so the possibilities in a *videoadventure* (such as *Phoenix Right Ace Attorney* or *Fahrenheit*) and in an *arcade game* (*Ninja Gaiden II*, *Gears of Wars*) are different, because the objects-signs, always understood as shapers of a logical space around them, are connected in different ways. In the *videoadventure* a book can be transported, given to someone, read; in an *arcade game* it can be destroyed or used as a projectile, etc. What can be done (the possibilities, and with it the meaning of what is shown) is determined as a body of possibilities by the way that every sign designates.

In this way the concrete actions executed in the video game are accidental insofar as they are not arranged according to the codetermination of objects (i.e. finding the broomstick, the string and the paper clip in one sequential order or other, is indifferent to the fact that *they must be combined together, they and no others*, which is essential to their meaning)¹⁴. But an action that is considered complete without conditions is as absurd as one impossible to complete, because the action without conditions is, in the video game, the action that does not take into account any object – action, therefore, that relinquishes its integration into the plot¹⁵. Such would be a video game where it were said, from the beginning, “You’ve won” or rather “Mission accomplished”. The same thing happens with the impossibility of the objects allowing an action (for instance, if in *Silent Hill 2* the key in the drain were demanded in order to enter the lift, but a possibility to obtain it were not offered at the same time because the hair, the bent needle or any object with an equivalent function did not exist). The possibility, then, would be the action coherently determined. Meaning manifests itself when, playing, one says: “this hair is here *for something*”¹⁶. We do not mean to say, by all this, that the video game is reduced to this collection of functional relations between objects: the video game is a much more complex unit. However we do consider this logical space as the fundamental stratum on which other levels develop (such as the purely narrative one)¹⁷. A story, such as the one told in *Ico*, is unfeasible without the space of doors, chains, cornices and stairways that constitute the castle; in the same way that the castle is only interesting insofar as it allows the story to unfold¹⁸.

3. The ontological status of the virtual object. The object as sign and world as discourse

We go back to the question: *how, when faced with a certain situation set out in the video game, do we know what we have to do and how to do it?*¹⁹ In other words: how do we know what is left to obtain the goal? And in which way is the goal itself built as such? It only makes sense to speak of expectations, and of the goal associated to such expectations, *within* the game. In the logical space of the video game the objects have a meaning because of the regulated use given to them, but the rules are defined according to those objects that they regulate. Indeed, what the objects that appear in the video game are depends on their use, and they only appear in the video game *inasmuch as* they have a use²⁰. The objects allow the actions to be achieved, but there cannot be, in contrast, objects with no reference to the actions in which they might be involved. In this way a wooden box in a *shooter* such as *Resident Evil 4* hides ammunition (and it can be destroyed); in a platform video game such as *Psychonauts* it allows us to reach, by jumping from it, a higher place; while in a driving game it is an obstacle to avoid (and it may or may not be destroyed) as happens in an episode of *Grand Theft Auto San Andreas*; in a *videoadventure*, it prevents us from going through a door (and it cannot be destroyed, it acts as a signal: a very much used method to prevent reentering a scenario that has been completed, like in *Rule of Rose*). The problem is to *determine* that use²¹. In *Day of the Tentacle* it is only when one notices the relation between the fence, the cat that rubs its back against it and the paint, that the sense of the three objects is understood: a cat stained with paint that looks like a skunk, which in turn is used to scare another character. In the video game understanding and action identify with one another: I know what is to be done when I find out the function of an object, or I find out the function of an object when I know what is to be done. The expectations regarding an object are in fact expectations regarding the *regularity* of the system. Only by accepting the net of logical conditions established by (and between) the objects as a whole, that is, only *immersed* in the virtual world, does the expectation of a specific goal make sense. The specific goal the gamer wants to achieve is not prior to the net of possibilities, just as the net of possibilities is not prior to the goals: they mutually constitute one another as the game goes on. Indeed, because the degrees of freedom of action are given by the meaning of the objects (by their connections with the other objects, or by the use of the objects regarding one another), achieving a goal is indeed achieving the virtual world, making *explicit its inner constitution*. In this regard, even in its *specific absence*, an object establishes a series of restrictions (some degrees of freedom) because it is defined with regard to the *whole* of the remaining objects; it is an object *inasmuch as* it is connected by the use with the others²².

What is, then, the object within the video game? We



Fig. 1 – Manic Miner Screenshot (1) © Software Projects



Fig. 2 – Manic Miner Screenshot (2) © Software Projects

could characterise it in a wide sense as all that presents itself as *condition for* gaining access to something else. It is a pragmatic sign²³. Therefore, owing to the fact that each one of them refers to the others, there is no object but in a *pragmatic net* of objects. This logical net of possibilities is what we are understanding here as a *virtual world* (as opposed to the represented world of the traditional arts, where we only contemplate/look at what it is being represented). Therefore, studying the objects is in fact studying the worlds in which they are inserted as signs of those conditions. We face these nets or these worlds in terms of genres. A bottle will not perform the same function in a videoadventure (*Lost in Blue*) as it would in an action video game (*Manhunt*). In reverse, however, *Lost in Blue* is a videoadventure insofar as in it a bottle is useful to keep water in (which is the equivalent, in this game, to being able to *explore the island further and for longer* without having to go back to the cave) and not as a weapon that could cut one's throat. When it is said of a video game that it belongs to a genre, what is being indicated to the gamer is *what kind of world s/he is going to find* or, in terms of immersion-incorporation, *what kind of things s/he will have to do*. The action of the gamer is, therefore, articulated from the beginning according to the pragmatic set of possibilities the objects set out. This way, virtual world and structured action are mutually correspondent, because it is *only through the action that this virtual world can manifest itself*, and *only by being restricted with regard to the model can the action have meaning*.

4. The Semiotics of the spatial dimension in platform games

It is in this sense that we face the analysis of the spatial dimension in platform video games: what objects and what actions are possible in this genre? What kind of physical world is being constituted before our eyes? How is its spatial intelligibility built? If there is anything that differentiates the spatiality in the platform genre from that of all other genres, it is the emphasis on the *gravity* phenomenon with regards to the character itself. The spatial dimension of the virtual world is built

around the idea of height, and its physics is in fact characteristic of architecture. Correlatively, the character for which the gamer is responsible is defined in terms of *body*, with jumping as a basic action. The variants could include other actions such as climbing, scaling, hanging, lifting its weight by its own strength, etc. More elaborate designs incorporate swimming and diving, which requires a more complex modelling of the world's physics, such as simulating floating capacity and water thrust, and other characteristics of the physics of fluids. In any case, the basic "game over" condition is usually *falling*. This spatiality could be set out in a style either of action, or of resolution (the simulation of processes is not usual). This way, in *Ico*, every large room, small room or garden in the castle from where one must escape is set out as a 3D puzzle – once the solution is found the manoeuvres are not difficult. On the other hand, *Tomb Raider* emphasizes action when it demands to the gamer a *precise* movement of the avatar, as well as to take into consideration distances, heights, and depths, and therefore space as a 3D puzzle is less important²⁴.

We will focus on two specific games: *Manic Miner* (Matthew Smith, 1983), for 8 bit computers, and *Shadow of the Colossus* (Fumito Ueda, 2005), for Playstation 2. The comparison between two games so technologically distant will allow us to extract precisely what they have in common as genre, with regard to the setting up of the physical space.

4.1. Manic Miner

Manic Miner takes place throughout twenty different caverns, where we have to pick up different treasures before we run out of air, which is represented by a shrinking bar. Once all the treasures of a cavern are obtained a passage to the next level opens up. The caverns also hide other dangers, such as robots, spiders, venomous plants or ground that opens up under our feet as we walk along. If the character falls from a certain, considerable height we lose a life. The video game, therefore, requires skill with the controls in order to avoid the different dangers. How does Manic Miner



model the physical world? We distinguish four entities: our *character*, the *enemies*, the *items* and the *surroundings*. The relations between every one of these entities form the structure of possible actions, that is, they define a particular *virtual world*:

Character/enemy: The contact with the enemy is deadly (that is, the level has to be restarted right from the beginning), and for this reason the icon for the enemy (the *sprite*) is constituted as a sign of danger and it is subject to a spatial restriction. The place where the enemy lies is, indeed, understood as hostile, and the perceptive action would be running away. The action pair will be walking/avoiding.

Character/item: regarding the character, the item is picked up/not picked up. With regards to the position of the item the character is near/far. With regards to the portrayal of the character the item may be beneficial/damaging. In *Manic Miner* our character only has the attributes *life* and *oxygen*, and only a type of beneficial item exists: the key fragment (an oxygen tank, for instance, could have been included to recover the oxygen level; since nothing of the sort exists, the oxygen counter is in fact a concealed timer). The correlation picked up-near and not picked up-far is shown as basic to the setting up of the spatial dimension in *Manic Miner* as the gamer is being forced, by the mechanics of the game, to pick up all the item fragments of a screen in order to continue to the next one. The

damaging items are different according to the action of the character: jumping/spider, walking/stalagmite, falling/stalagmite. The damaging items are, then, spatially qualified depending on the action of the character (spider=up, stalagmite=down).

Character/surroundings: the actions of the character are jumping, walking, going through (a door) or falling. The configuration of the surroundings offer a repertoire of possible actions and in reverse, the actions determine a certain kind of surroundings: they are correlative. This way we obtain the pairs: jumping/support, walking/open space, falling/height, going through/door (going through requires the condition of having picked up all the fragments).

Item/surroundings: the item demands to be picked up (it is scattered all over the room) for us to be able to *go through* the door to the next level. As long as there are items in the screen we are in a closed space. When all the items have been picked up, the space allows an exit. The pair open/closed is, therefore, defined with regards to the pair picked up/not picked up.

Enemy/surroundings: the enemy develops in *Manic Miner* a fixed movement pattern, horizontal or vertical. Given that the contact with it causes death to the character, the enemy is building around itself a *zone* of hostile space. The zone where the enemy lies becomes dangerous. Also, the enemy *moves*, and the danger zone moves *with it*. As a result the places where the character is safe,



Fig. 3 – Shadow of the Colossus Screenshot (1) © Sony



Fig. 4 – Shadow of the Colossus Screenshot (2) © Sony

the safe zones, will not be permanent either, but will shift with the enemy too, in opposite direction: when an enemy approaches, the safety zone around our character decreases; when the enemy moves away the safety zone of our character will increase. Because of this the distribution of the safe zones and hostile zones within a screen will not be permanent, rigid or static, but they will constantly vary. Put in other words, all the movements of all the enemies on the screen will generate a space dynamically qualified as safe/hostile.

Enemy/item: although it is usual in other games, in Manic Miner there is no established relation between the enemies and the items, like *watching*²⁵, for instance.

The simplicity of this game allows us to extract minimal spatial relations characteristic of the platform genre. As we are about to see this structure is kept in a game as intricate as Shadow of the Colossus.

4.2 Shadow of the Colossus

Shadow of the Colossus transports us into a wider world. The main character must ride through a vast territory and defeat 16 colossuses to resuscitate his beloved. There are neither villages, nor dungeons, nor other characters with whom to interact: just the landscape and the colossuses. First one must search for the colossus throughout the territory, with no obstacle other than mountains, gorges or lakes. Once the lair is found the fighting phase starts. This is the phase that really belongs to the platform genre: it is necessary to climb up the body of the colossus in search of certain weak points that must be attacked with the sword. As we will see the territory acts as a *container* of the colossuses, who constitute themselves as an equivalent of the scene or level of a game like Manic Miner.

We apply the same analysis we used previously: we will distinguish the *character*, the *enemies*, the *items* and the *surroundings*. The peculiarity of *Shadow of the Colossus* resides in the fact that the enemies are designed themselves in a way similar to the *surroundings*.

Character/surroundings-enemy: a damaging contact with the enemy does not exist, because the way the colos-

sus hurts us is by causing our falling. The falling is not usually fatal, but it forces us to restart the climbing up the colossus right from the beginning. The actions of the character in relation to the colossus are jumping, walking, climbing or falling, which define the pairs jumping/support, walking/open space, falling/height, climbing/temporary support.

Character/item: in this case the item that our character has to obtain is substituted by the three or four weak points of the colossus. They have the same function than the fragments in Manic Miner: in order to consider the colossus completed, every one of these points must be attacked (“picked up”). Therefore the pair picked up/not picked up remains valid. With regards to the position of these weak points, the character is near/far. A counter similar to the timer (the “oxygen”) of Manic Miner is introduced: the strength of the grip onto the colossus’ fur, which gets used up progressively until we no longer can manage a firm support and we fall. Here the correlation picked up/near and not picked up/far also appears as basic to the setting up of the spatial dimension inasmuch as the gamer is being forced, by the mechanics of the game (just like in Manic Miner) to reach all the weak points (= item fragments) of a colossus (= cavern) so that it can be killed (= go through the exit).

Character/surroundings-no enemy: the actions of the character in the territory are running, jumping, walking, falling. There is no significant difference between the human character and the horse he can ride, except for their speed (and also the horse cannot fall). We have then: jumping/support, running (galloping)/open space, falling/height.

Item/surroundings-no enemy: the only item that we find in the territory is the altar, which functions as a safe point and cannot be considered an object of the virtual world, but rather a link with the gamer’s real world²⁶.

Enemy as surroundings: just like in Manic Miner, the colossus develops a fixed movement pattern, although a lot more complex one. In the colossus the hostile zones, and also the safe ones do modify their relative position

in time. This is so because the colossus (= the cavern), an organic whole in itself, moves. A projection that may serve to keep balance at one time, will become a slope to the abyss when the colossus shakes its body. That is, the totality of the movements of the colossus generates, like the different enemies in *Manic Miner*, a space dynamically qualified as safe/hostile. The originality of the *Shadow of the Colossus* is that qualification is obtained by means of a more complex modelling of the underlying physics.

What about clouds? What about fog or water? Are they objects or not? Do they have a role in creating ‘immersion’ or not? From the point of view of this paper clouds, fog or water only take part in the creation of immersion if they affect the avatar’s actions. Given that the avatar is affected by water from the moment the swimming or diving action is associated to him (the confrontation with the seventh colossus is based on this dichotomy), water in *Shadow of the Colossus* is an object, just like the clouds of dust raised by the feet of the first colossus are objects insofar as they make our avatar’s vision difficult in his attempt to climb up the colossus. However, whether the sky is or is not clouded does not affect the avatar’s actions, therefore it can only be taken as ornament or as a rhetorical effect that may be *functionally* necessary for narrative or emotional purposes, but, from our point of view, is not such for the setting up of the physical space.



5. Conclusion

As we can see, both in *Manic Miner* and in *Shadow of the Colossus*, the spatial dimension depends upon some basic oppositions that give meaning to the actions and the surroundings, and which link both games to the platform²⁷ genre. The underlying concept in both cases is the phenomenon of gravity which, although it is realized in a more complex way in one game with regards to the other (we can say that *Shadow of the Colossus* does it in a recursive manner, introducing surroundings within other surroundings), uses similar mechanisms.

Notes

⁰ Translated from Spanish by Ana Isabel Pascual-Gonzales

¹ Juul 2005, p. 36: “A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are optional and negotiable”. Another definition in Wolf 2001.

² A discussion about Eco’s *openness* and *performance* in De Marinis 1982, pp. 169-171.

³ “A totality does not consist of things but of relationships and ... not substance but only its internal and external relationships have existence” (Hjelmslev 1961).

⁴ Except in the case of the player in a music piece or a play.

⁵ The dichotomy identification/immersion, that may appear to be arbitrary, is imposed by the characteristic needs of interaction. It is not so much a theoretical stipulation, as it is a pragmatic distinction: for the interaction to exist the work must offer, not a world with things, but a world of rules over things. This is the core of this paper, for if it is accepted that the interaction forces a different way to construct the world, immersion then can only appear linked to the virtuality of a system of rules. It is because of this thesis that it cannot be said that literature offers many virtual worlds in our sense either, but for gamebooks or hypertexts, and that by virtue of the reader’s decision rules (see Aarseth 1997).

⁶ Wittgenstein 1953, § 54.

⁷ Another approach: Aarseth 2000, pp. 152-71.

⁸ Here we understand, even at the risk of being reiterative, immersion in a restricted sense: not as a question of emotional engagement, but as pragmatic comprehension; and the virtual world, not as collection of objects, but as a structured

body of the pragmatic laws that govern those objects.

⁹ Wittgenstein 1921, §§ 2-2.02.

¹⁰ “We call any specific formalization of expression a regime of signs, at least when the expression is linguistic. A regime of signs constitutes a semiotic system” (Deleuze & Guattari 1987, p. 111); “[A regime of signs is a] form of expression [that] is reducible not to words but to a set of statements arising in the social field considered as a stratum ... The form of content is reducible not to a thing but to a complex state of things as a formation of power ...” (*ivi*, p. 66).

¹¹ In Peirce’s terminology, objects function as legisigns (Peirce 1998, p. 291).

¹² Compare this with theatre, cinema or dance, where the world changes without our intervention.

¹³ Wittgenstein 1921, §§ 3.1431, 3.25, 3.251, 3.3.

¹⁴ Wittgenstein 1921, §§ 4.022, 4.461, 4.464.

¹⁵ Wittgenstein 1921, §4.4611.

¹⁶ “Regimes of signs are not based on language, and language alone does not constitute an abstract machine, whether structural or generative. The opposite is the case. It is language that is based on regimes of signs, and regimes of signs on abstract machines, diagrammatic functions, and machinic assemblages that go beyond any system of semiology, linguistics, or logic. Behind statements and semioticizations there are only machines, assemblages, and movements of deterritorialization that cut across the stratification of the various systems and elude both the coordinates of language and of existence. That is why pragmatics is not a complement to logic, syntax, or semantics; on the contrary, it is the fundamental element upon which all the rest depend” (Deleuze & Guattari 1987, p. 148).

¹⁷ A tool like the Greimasian Generative Trajectory may be used to distinguish and consider the various strata. The scope of this article is necessarily restricted due to limitations of space.

¹⁸ Since in this article we are only dealing with this stratum we do not need an enunciation theory that would allow to distinguish between engagements (*embrayages*) and disengagements (*débrayages*) in order to articulate the dichotomy identification/immersion in a better way. This article concentrates on the elements that are directly functional for the deployment of the action of the avatar in relation to the avatar’s goal set by the procedure of the game, because we understand the virtual world as an imitation, not of things, but of the effective rules over those things. The enunciation on the video game, and the distinction *embrayages/débrayages*, narratively operates *over* (not *on*) the interactive procedure, that cannot enunciate anything. Immersion is a pragmatic concept. See Frasca 1999.

¹⁹ Wittgenstein 1953, §§ 442, 445.

²⁰ Wittgenstein 1953, § 31.

²¹ Wittgenstein 1953, § 85.

²² Wittgenstein 1953, § 462.

²³ “That is why pragmatics is not a complement to logic, syntax, or semantics; on the contrary, it is the fundamental element upon which all the rest depend” (Deleuze & Guattari 1987, p. 163).

²⁴ According to Peirce’s terminology, in platform games there is a predominance of the legisign-index (Peirce 1958, p. 164).

²⁵ For example: items with a key function, a life restorer function, etc.

²⁶ The save point is a sort of metaobject.

²⁷ According to this, the three-dimensionality would not be a functional requisite for the setting up of the spatial dimension in the platform video games. Cf. the successive versions of *Prince of Persia* or the conversions for mobile phones of video games such as *Assassin’s Creed*.

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