The Design of Narrative as an Immersive Simulation

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ABSTRACT
This paper proposes a concept of narrative as the design of an immersive simulation to be experienced by the interactor in a video game. We face this narrative status as the ongoing shift of a process faced with the nature of the video game format: in one side, the immersive nature of character-oriented games, and on the other, the simulative nature of god games and such. We believe the combination of these two features allows for the emergence of a new and promising narrative game format.

Keywords
Video game, narrative, simulation, immersion, *Umwelt*.

INTRODUCTION
In this paper, we propose a new concept of narrative is emerging, taking shape as the design of an immersive simulation to be experienced by the interactor in a video game. We face this new narrative status as the ongoing rearrangement of a creative process that was initiated in an attempt to generate, in the digital format, a certain concept of narrative inherited from the canonic cinema. Faced with the simulative nature of the video game format, we believe the process is being forced to take a different shape.

In this new format, one fundamental notion guides us and defines the premise for games as a narrative form, that is, the concept of agency as "the satisfying power to take meaningful action and see the results of our decisions and choices" [7]. In the case of the narrative video game, agency is what provides the interactor – the player– with the possibility of becoming a part of the story universe, making decisions as one of its characters. This is a scenario we oppose to the more common link made between games and narrative, the one that refers to the game's theme as its story. "A game's theme is nothing more than a justification for the game's material: a rational explanation that establishes the setting and makes up the global motivation for the games iconography and the events that take place inside the game" [3]. What is important is the actual practice of the game, which implies a certain type of "kinesthetic acting" that becomes an end in itself [3]. This "kinesthetic acting" allows agency to the player, turns her into an agent of both

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story and enunciation, and is the most fundamental characteristic of game.

From this perspective, we were able to outline, inside the sphere of games with a more clear narrative goal, two broad categories of games that attempt to address the design of this narrative experience in terms of different agency dynamics, through different sets of actions. One category, which we propose to name the *character-oriented games*, focus its efforts in the construction of a 3D navigable environment, that is becoming more and more sophisticated, in which the sensation of immersion and of a "vicarious presence" [3] aims to be strong enough as to establish the emotional link that defines the canonic narratives. Most games in this category structure its agency around a journey through a delimited time-space, which the interactor enters as its protagonist. Role-playing games (RPGs), action, adventure and first-person shooters are part of this category, and we can name games like the *Final Fantasy*, *Tomb Raider*, *Halo* or *Deus Ex* series as some of the most popular character-oriented game examples.

The second category of narrative games, one which has a less obvious connection with cinema, is the *simulation games* (Sim games). Here we focus our attention on those games in which play consists on the management of different parameters of a greater system. These game's roots can be traced to experiments with Artificial Life and computational modeling of complex systems that exist in reality. The unfolding practices generated in this scenario gave us games as the *SimCity* series, for instance, in which the interactor governs a city, controlling various parameters as investments and urban planning. We also count the real-time strategy games in this category, their difference from the management simulation being restricted basically to the time-scale aspect. In these games, the play consists, essentially, in the observation of the behavior of the system over time, after the interference with some of its elements and sub-systems. In them, the interactor plays the part of a god, or holds a god-like perspective, not actually "being inside" of the game environment.

IMMERSION, PRESENCE AND THE DESIGN OF AFFORDANCES

Immersion and presence are two sides of the same coin. Within the character-oriented games, being a character is, above anything, entering the spatial universe of the game through her or his body. With the improvement of technology and of graphic chips that generate the synthetic image in computers, the creation of ever more lifelike environments became possible. Aspects of the photographic/cinematic image, culturally shared as "realistic", could be simulated in an ever more complete manner, as to recreate for videogames the notion of "window to the world" that cinema calls its own up until today. However, beyond emulating cinematic aspects as depth of field, shades and textures, it has become clear that the ground zero for presence in the game environment can only be fully implemented when our experience of contact with the objects and other elements of the game world can also be able to simulate aspects of their *behavior* in the real world.

In other words, we will have, immersed in the game world, a greater feeling of *presence* – and, as a consequence, greater agency potential – the more our virtual body is capable of executing - or not - certain tasks required for his participation into the virtual world. As Gibson states, regarding his concept of *affordances*:

> if a terrestrial surface is nearly horizontal (instead of slanted), nearly flat (instead of convex or concave), and sufficiently extended (relative to the size of the animal) and if this substance is rigid (relative to the weight of the animal), then the surface *affords support*.

> It is a surface of support, and we call it a substratum, ground, or floor. It is stand-on-able, permitting an upright posture for quadrupeds and bipeds. It is therefore walk-on-able and run-over-able. It is not sink-into-able like a surface of water or a swamp, that is, not for heavy terrestrial animals (…) [6].

Beyond cinema's project aiming greater and greater audiovisual realism, what might really matter in a video game is its construction of an "ecology, in which every object is a tool that extends the user's body and enables her to participate in the ongoing creation of the virtual world" [10]. That way, we would have, as the interactor, the perception of height depending on whether or not our virtual body is able to reach certain vertically distant points in the digital environment; the perception of speed based upon, for instance, the interval in which we can traverse a certain terrain; the perception of a gravitational constant through the act of walking, running, jumping and so on. Being in the world through the embodied presence of a character makes up for a good part of game play per se, and, for each challenge posed by the game, a great measure will be directly associated to the possibility of obtaining, from the body we control – be it an avatar, a first person perspective of, more often than not, a dynamic combination of both – the perception, the action, the precise and necessary response for its execution. This way, in a general manner, we can say that "the avatar's body is the direct expression of their environment, written into the gamescape as a capacity for it's distances" [9].

In the video game, the question of embodiment may become, beyond the main condition for the experience of being in the world, also the premises for a potentially sophisticated experience of alternative *Umwelts* – as it was proposed by theorists Jacob and Thure von Uexkull [12], and defined here by Nöth as "the way in which the environment is represented to the organism's mind and it comprises the scope of the organism's operational interaction with its environment" [8]. In the video game, we believe it can represent change of

> point of view and physical abilities: our virtual bodies may fly or creep on the ground, see everything from high above or put up with the limitations of a terrestrial vision, embrace the whole universe or shrink down to the size of a Lilliputian [10].

Or else, it is the possibility of making our changing of actual world perception, through the embodiment of a character both physically and emotionally implicated into different contexts, that which turns the video game into a potentially revolutionary format. The act of being in the world can gather more meaning than just immersion, presence, navigation: what still separates game from the status of an artistic experience, more than a total immersion technology, to us, seems to be connected to the creation of systems capable of turning an immersive experience into a *perceptive* living experience under the motivations of a character with real dramatic power.

NARRATIVE AS SIMULATION

The basic concept of simulation is essential to any attempt in understanding video game as an aesthetic form. Bettetini states, in his definition of simulation as an instrument essential to signification:

> when we talk about simulation, we are referring, first of all, to the creation of an interpretative model (theoretic hypothesis) related to a certain reality and, then, to the empirical verification of the model's functionality and adequacy [2].

This way, even the character-oriented games, by using synthetic images – based upon a conceptual apparatus brought forth by photographic, cinematic and video imagery – are implementing a high degree of simulation to generate their immersive environments. The sense of making a difference between the second category as a simulation comes from its explicit attempt to generate computerized procedures for modeling the semiotic category of *thirdness*, related to systems with a minimum of complexity. These attempt to cover more aspects than the mere way things look, focusing specifically in that which, taken as whole system, can be called its general behavior. In these systems, the

> component parts interact with sufficient intricacy that they cannot be predicted by standard linear equations; so many variables are at work in the system that its overall behavior can only be understood as an emergent consequence of the myriad behaviors embedded within. With complexity, characteristics and behaviors emerge, in a significant sense, *unbidden* [11].

Here, the greatest advantage of the computer comes from its possibility of allowing the observation of these systems, composed of innumerous elements, in interaction over longer time scales. Basically, the computer allows the visualization of global effects that emerge, along the temporal axis, from the local interaction of the components of the system.

Conceptual Toys

A simulation game is radically different from a character-oriented game. In the later and its relatives, one goal is established in the beginning of the game and the forth coming experience proceeds as a quest to achieve this goal. In opposition to this, most simulation games have no goal or victory attached to its achievement: the process itself is the toy. Playing consists in modeling it, trying to infer the rules behind it in a way to control the game more precisely, although likely never in a fully predictable way. While quest games mark their conclusion with the end of the spatial journey, the end of a simulation game can only come from a decision of the interactor herself. Apparently aware of this perspective, the distributors of the Sims series sell their games under the label of software toys, instead of games per se (Maxis Software Catalog). Or, as states Janet Murray, “electronic closure occurs when a work's structure, though not its plot, is understood” [7].

While fundamentally different from character-oriented games in their narrative aspirations, and from everything else we are used to calling a story, Sim games still should have their share in this narrative mission. In spite of the absence of a more clear dramatic structure, we believe that, in most cases, the system’s history – e.g. its change along the time axis – can be rich enough to be properly called a narrative. Most importantly, the construction of the diegetic universe under a systemic logic and the possibilities this paradigm opens for full interactor agency within the game are likely to provide important increments of complexity that could give narrative in the virtual world the artistic relevance it seems to lack today.

While not aiming for the classic immersion effect made popular by canonic narratives – and pursed by the character-oriented genre – Sim games cannot be said to lack their very own ways of making the interactor an actual part of the game world. As a matter of fact, given the nature of its gameplay, well developed simulations can provide more involvement with the game’s systemic logic than the character-oriented competition. This way, being immersed into a Sim game has a more metaphorical concept, since

> playing a simulation means becoming engrossed in a systemic logic which connects a myriad array of causes and effects. The simulation acts as a kind of *map-in-time*, visually and viscerally (as the player internalizes the game's logic) demonstrating the repercussions and interrelatedness of many different social decisions. Escaping the prison-house of language, which seems so inadequate for holding together the disparate strands that construct postmodern subjectivity, computer simulations provide a radically new quasi-narrative form through which to communicate structures of interconnection [4].

The simulative nature of this game genre allows for a degree of freedom regarding player action that most strict character game haven't been able to achieve, since the path to be traversed by the interactor in these games, although accessed in a few different ways, is essentially linear (one must clear point A and point B to get to point C). Yet, Friedman quite carefully warns us that "however much 'freedom' computer game designers grant players, any simulation will be rooted in a set of baseline assumptions" [5]. Or, in other words, in spite of the improvement brought to the discipline of computer simulation by a more thorough understanding of the behavior of complex systems, including social ones, whatever concepts used to model theses systems, be they real or imaginary, modeled into scientific experiments or for pure entertainment value, they will always to some extent be of an arbitrary, conventional and biased nature. This perspective, however, does not intend to frame computer simulation as *simulacra*. On the contrary, it aims at the poetic potential of simulation games, reminding us that there's not such thing as a "perfect simulation" (and semiotically, this shouldn't even be an issue).

CONCLUSION

The point here is not to assume that the non-linearity inherent to this type of game will make it necessarily less arbitrary as a semiotic constructum. Narrative, however, does seem to lose its predetermined, arbitrary convention, becoming a particular instantiation, when the interactor inhabits, plays, becomes engrossed in the game. Narrative becomes an index of the thirdness modeled by the computer into that particular simulation, through which one can infer certain aspects of the theoretical (narrative) concept, by experimenting with it as a process, but very unlikely the concept in its whole. Instead of the probable and necessary cause-and-effect chain (as proposed by Aristotle [1]), built in a way so that to make us feel that things could have never taken place differently, now, narrativity migrates to the possibilities opened by the theoretical constructum, much like our personal narrative through life points to the evolutionary history contained in our species DNA and that, added of the social, cultural context which we inhabit, allows for the fulfillment of some of its possibilities, but not all of them.

The implementation of narrative as a simulation, more specifically of the immersive type, could be seen as a way to create, in video games, soviet filmmaker Sergei Eisenstein's ideals for conveying conceptual discourse through a film's form, as opposed to its mis-en-scene only. Under this hypothesis, we can envision a promising future of games that try to model, for instance, truly imaginary systems, that operate under a poetic set of guidelines, as opposed to just finding ways to restrain the interactor to a predetermined narrative path. Universal masterpieces as Franz Kafka's *The Process*, Jorge Luiz Borges' *The Garden of Forking Paths* or even Brazilians favorite *Dom Casmurro* (*Lord Taciturn*, by Machado de Assis) could be "recreated" to the simulative/narrative form, to allow interactors to live the experience of Joseph K, for example, not following the book's protagonist step-by-step, but experimenting a world under the Kafkaesque logic portrayed in the novel.

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