Simulation versus narrative

Introduction to Ludology

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Academic video game studies have known an incredible development during the last couple of years. Slowly, academic interest has shifted from the early do-games-induce-violent-behaviors studies toward analyses that acknowledge the relevance of this new medium. Several international conferences on game studies took place in 2001, plus the publication of *Game Studies,* the first peer-reviewed online journal on the field.[1] In 2002 and 2003, the number of conferences and workshops kept growing steadily. After an early start as a subset of digital text studies, video game studies is finding its own academic space. Probably the most promising change comes from a new generation of researchers who grew up with computer games and now are bringing to this new field both their passion and expertise on this form of entertainment.

So far, the traditional—and most popular—research approach from both the industry and the academy has been to consider video games as extensions of drama[2] and narrative.[3] **While** this notion has been contested {especially by Espen Aarseth[4]) and generated a sometimes passionate debate, the narrative paradigm still prevails. My goal in this essay is to contribute to this discussion by offering more reasons as to why the storytelling model is not only an inaccurate one but also how it limits our understanding of the medium and our ability to create even more compelling games. The central argument I will explore is that, unlike traditional media, video games are not just

based on representation but on an alternative semiotical structure known as simulation. Even if simulations and narratives do share some common elements (characters, settings, and events) their mechanics are essentially different. More important, they also offer distinct rhetorical possibilities. Therefore, my strategy will be to explore a particular topic and show how games and narratives provide authors with essentially different tools for conveying their opinions and feelings. In addition to this, I will explore how the concept of authorship fits within two different genres of simulation, *paidia* and *Indus*. In order to accomplish this, it will be necessary to introduce some concepts of ludology, the still-nascent formal discipline of game studies.

What is Ludology?

Ludology can be defined as a discipline that studies games in general, and video games in particular. The term is not new and it has been previously used in relation with non-electronic games, particularly among the board gaming community. In 1999, I pointed out the lack of a coherent, formal discipline that dealt with games as one of the reasons why researchers were looking for theoretical tools in literary and film theory and narratology.[5] Since then, the term "ludologist" grew in popularity among the game academic community to describe someone[6] who is against the common assumption that video games should be viewed as extensions of narrative. Personally, I think this is quite a simplification. Of course, we need a better understanding of the elements that games do share with stories, such as characters, settings, and events. Ludology does not disdain this dimension of video games but claims that they are not held together by a narrative structure. Nevertheless, it is important to keep in mind that ludology's ultimate goal is not a capricious attempt to unveil the technical inaccuracy of the narrative paradigm. As a formalist discipline, it should focus on the understanding of its structure and elements—particularly its rules—as well as creating typologies and models for explaining the mechanics of games. However, formalism is not the flavor of the month in these posteverything times. Certainly, formal approaches are limited—and ludologists should always keep that in mind—but they are probably the easiest way to uncover the structural differences between stories and games. I personally see this structural approach as a first, necessary step in video game studies, which we will definitively outgrow once it helps us to better grasp the basic characteristics of video games.

Simulation versus Representation

Representation is such a powerful and ubiquitous formal mode that it has become transparent to our civilization. For millennia, we have relied on it for both understanding and explaining our realities. This is especially true with a particular form of structuring representation: narrative. Some authors, such as Mark Turner,[7] even state that narrative mechanisms are cognitive structures deeply hard-wired into the human mind. It is because of its omnipresence that it is usually difficult to accept that there is an alternative to representation and narrative: simulation.

Simulation is not a new tool. It has always been present through such common things as toys and games but also through scientific models or cybertexts like the *I-Ching*. However, the potential of simulation has been somehow limited because of a technological problem: it is extremely difficult to model complex systems through cogwheels. Naturally, the invention of the computer changed this situation.

In the late 1990s, Espen Aarseth revolutionized electronic text studies with the following observation: electronic texts can be better understood if they are analyzed as cybernetic systems. He created a typology of texts and showed that hypertext is just one possible dimension of these systemic texts, which he called "cybertexts." Traditional literary theory and semiotics simply could not deal with these texts, adventure games, and textual-based multiuser environments because these works are not just made of sequences of signs but, rather, behave like machines or sign-generators. The reign of representation was academically contested, opening the path for simulation and game studies.

Scientists have traditionally used simulation for explanatory purposes and particularly for predicting the behavior of complex systems. Treatises abound on simulation theory but generally they provide an approach that is too technical and goal-oriented for our task of understanding it as an alternative to representation. What follows is a working definition that I distilled from combining elements of semiotics with several computer simulation theory essays.[8] I removed any references to the computer, since simulation can exist in nonelectronic devices such as traditional toys. This definition is provisory; it does not aim to be exhaustive and it will certainly change as we increase our understanding of simulation semiotics or "simitiocs." Therefore: "to simulate is to model a (source) system through a different system which maintains (for somebody) some of the behaviors of the original system." The key term here is "behavior." Simulation does not simply retain the—generally audiovisual—characteristics of the object but it also includes a model of its behaviors. This model reacts to certain stimuli (input data, pushing buttons, joystick movements), according to a set of conditions.

Traditional media are representational, not simulational. They excel at producing both descriptions of traits and sequences of events (narrative). A photograph of a plane will tell us information about its shape and color, but it will not fly or crash when manipulated. A flight simulator or a simple toy plane are not only signs, but machines that generate signs according

to rules that model some of the behaviors of a real plane. A film about a plane landing is a narrative: an observer could interpret it in different ways (i.e., "it's a normal landing" or "it's an emergency landing"), but she cannot manipulate it and influence how the plane will land since film sequences are fixed and unalterable. By contrast, the flight simulator allows the player to perform actions that will modify the behavior of the system in a way that is similar to the behavior of the actual plane.[9] If the player increases the power variable on the simulator, the simulated plane will move faster through the virtual sky on the computer screen. As we will later see, video games are just a particular way of structuring simulation, just like narrative is a form of structuring representation.

To an external observer, the sequence of signs produced by both the film and the simulation could look exactly the same. This is what many supporters of the narrative paradigm fail to understand: their semiotic sequences might be identical, but simulation cannot be understood just through its output.[10] This is absolutely evident to anybody who played a game: the feeling of playing soccer cannot be compared to the one of watching a match. Apparently, this phenomenological explanation is not as evident as it may seem. As Markku Eskelinen argues, "Outside academic theory people are usually excellent at making distinctions between narrative, drama, and games. If I throw a ball at you I don't expect you to drop it and wait until it starts telling stories."[11] This problem might be because we are so used to see the world through narrative lenses that it is hard for us to imagine an alternative. But it may also be true that it is easier to try to apply narratology, which most researchers are already familiar with, than starting from scratch from a whole new approach. Also, because both the public and the media production industry are already extremely proficient in consuming and creating narratives, the temptation to constrain games to this existing channel may be too high. Video games imply an enormous paradigm shift for our culture because they represent the first complex simulational media for the masses.[12] It will probably take several generations for us to fully understand the cultural potential of simulation, but it is currently encouraged from different fields, such as the constructionist school of education and Boalian drama. One of the most interesting cognitive consequences of simulation is its encouragement for decentralized thinking,[13] which may in the long-term contest Mark Turner's claim of a "literary mind" by introducing the possibility of an alternative "simulational" way of thinking.

For several years, I have tried, with mixed success, to expose my nonnarrative theory of games to both researchers and designers by isolating the structural formal differences between the two. In this essay, I will propose a complementary approach based on their rhetoric characteristics. For my argument, I will assume that video games are capable of conveying the ideas

and feelings of an author. My claim is that simulations can express messages in ways that narrative simply cannot, and vice versa. Sadly, our current knowledge of simulation rhetoric is extremely limited but I am confident that it will develop in the near future. Interestingly, it may not be through the game industry—that has been quite conservative since the marketing people took over the show, encouraging cloning over originality—but, rather, through *advergames. Advergaming* is one of the new buzzwords that are popular among e-marketers. According to *Wireds* Jargon Watch,[14] an *advergame* is: "A downloadable or Web-based game created solely to enable product placements." I am not fully satisfied with this definition, since it clearly denotes the problems of shifting from a representational paradigm to a representational one. In my opinion, "product placement" is probably the most straightforward and obvious form of *advergaming.* Instead, this genre's key lays in modeling—not simply representing—the product or a related experience in the form of a toy or game. Many *advergames* are still satisfied to show an image of the product or its brand logo within the game instead of trying to convey experiences that are related to what is being sold. While I am a big supporter of the concept of the video game designer as an auteur, and it is true that many of them do use the medium to express their thoughts, their main goal remains to entertain. Advertisers, by contrast, use entertainment as a means but not as an end. What they want is to promote their brands and products and, because of this, they see in games a tool for persuasion. This puts them in an extremely privileged position for realizing that the potential of games is not to tell a story but to simulate: to create an environment for experimentation. An agency can place an ad in a magazine to enumerate the set of gizmos in a new car, but images, sound and text are not enough if they want their audience to be able to play around with them. In such a case, a simulated environment provides an experience that traditional advertising cannot deliver. As *advergaming* grows in popularity, it will hopefully also spread the idea that games may not just be a form of entertainment. Gaming literacy will some day make players aware that games are not free of ideological content and certainly *advergames* will play a role in this education because they have a clear agenda.

Game Rhetoric: Freedom of speech. Freedom of Play?

On Friday, April 19, 2002, senior U.S. District Judge Stephen Limbaugh rejected a request against a St. Louis ordinance passed in 2000 that limited the access of minors to video game arcades.[15] According to the Associated Press, Limbaugh reviewed four games and found "no conveyance of ideas, expression, or anything else that could possibly amount to speech. The court finds that video games have more in common with board games and sports

than they do with motion pictures." One week later, CBS reported that former wrestler and Minnesota governor Jesse Ventura was considering the use of video games for political propaganda.[16] Obviously, Ventura's campaign committee did regard games as a form of speech. Political video games are not new—a great example is the popularity of amateur anti-Osama online games[17] that were posted after September 11—but until now they have almost always relied on parody. If Ventura had gone through with his proposal,[18] he would have broken into new rhetorical ground, because electoral propaganda is one of the most visible examples of ideological speech.[19] Because of Ventura's status as a pop icon, his games would have probably been related to the action genre (he is supposed to be a tough guy, after all). However, political video games would probably shine with more dynamic, exploratory genres such as real-time strategy or simulators. Simulation has been used, with different degrees of complexity, to showcase urban dynamics *(SimCity)* or South-American dictatorships (*Tropico*).[20] It would not be surprising if in the near future politicians tried to explain their plans on tax or health reform through simulation. As Ted Friedman has pointed out,[21] Marx's *Capital* would make a much better simulator than a film.

Even if *advergames* are likely to be the Petri dish for simulation rhetoric, the example that I will propose is closer to art than to marketing. This is because most advocates of the narrativity of games always compare them to novels, films, or drama. So, I will suggest a topic that has both known success in traditional narrative and is as distant as possible from today's commercial video games: a worker's strike. In the late nineteenth century, Emile Zola wrote *Germinal,*[22] a novel about a strike held by mine workers in the north of France. At the end, the workers are defeated. All their efforts were in vain; their fight was not able to change their miserable work conditions. In the late twentieth century, Ken Loach described in his film *Bread and Roses*[23] a similar story about janitors in Los Angeles. The story ends differently: the janitors are victorious, even if their leader, an illegal immigrant, is deported back to Mexico.

Traditional storytelling normally deals with endings in a binary way. When Zola wrote *Germinal* he faced two options: the strikers could win or lose.[24] He opted for the second one, probably for conveying the idea that the social revolution was going to be a hard task. By contrast, Loach seems more optimistic. He depicts these oppressed janitors who stood up for their rights and were able to obtain better working conditions, even if their leader failed on a personal level. Narrative rhetoric is a well-lubricated tool. As we can see in these two examples, it allows authors to state that even a defeat could mean hope and even victories cannot be attained without losing something. Both storytellers are arguing that change is possible. However, neither of them is telling us to what degree that change is possible. We learn that

workers may fail or win, but diegetic media is not able to break its inherent binary structure. Narrative authors or "narrauthors" only have one shot in their gun—a fixed sequence of events.[25] At most, they could write five or six different stories describing strikes, so the reader could make an average and decide the probabilities that workers have to succeed. But traditional narrative media lacks the "feature" of allowing modifications to the stories, even if exceptions happen in oral storytelling and dramatic performances. In such media, it is always possible for an audience to go through several iterations of a story. In a game, going through several sessions is not only a possibility but a requirement of the medium. Games are not isolated experiences: we recognize them as games because we know we can always start over. Certainly, you could play a game only once, but the knowledge and interpretation of simulations requires repetition.

Unlike narrative, simulations are not just made of sequences of events, they also incorporate behavioral rules. Imagine that we designed *Strikeman,* a real-time strategy game in the tradition of Ensemble Studio's *Age of Empires* in which you could play the role of a labor organizer. Your goal would be to have the most workers join your strike and then deal with its organization and implementation. Unlike what would happen in storytelling, the sequence of events in a simulation is never fixed. You can play it dozens of times and things would be different. In one session, the boss could call the police and repress your workers. In another game, you may have to deal with spies infiltrated into your organization or another worker may contest your leadership and try to sabotage your actions. Games always carry a certain degree of indeterminacy that prevents players from knowing the final outcome beforehand. To paraphrase Heraclitus, you never step in the same video game twice.

Let's focus on two characteristics of such a game. First, the result of the strike is in part a consequence of your performance as a labor leader. This may seem obvious—we like to believe that we are responsible of the consequences of our actions—but it is not a feature available in storytelling. After all, as we learned from classical Greek drama, stories and fate go together. No matter how badly literary theorists remind us of the active role of the reader, that train will hit Anna Karenina and Oedipus will kill his father and sleep with his mother. Similarly, the strike in *Germinal* is going to be a failure because the narrauthor decided beforehand that it should be that way. Nevertheless, simulation authors or "simauthors" can also incorporate different degrees of fate (through hard-coded events, cut-scenes, or by manipulating pseudo-random events) into their games. Victory is partly because of the player's performance but other things are beyond her control. The software could randomly slip in constraints (like an infiltrated saboteur), making your goal more difficult to reach. The simauthor always has the final word: she will

be able to decide the frequency and degree of events that are beyond the player's control.

Second, imagine that we had a library of different simulations dealing with strikes, designed by different simauthors from different cultures and ideologies. Even assuming that all simulations would incorporate a winning scenario, some would be much difficult than others, depending on how they were programmed. Some might depend more on chance while others would define their outcome based solely on the player's performance. Whoever designs a strike simulator that is extremely hard to play is describing his beliefs regarding social mechanics through the game's rules rather than through events. Simulations provide simauthors with a technique that narraufhors lack. They are not only able to state if social change is possible or not, but they have the chance of expressing how likely they think it may be. This is not just by stating info (for example, "the probability of winning is 93 percent") but, rather, by modeling difficulty. This technique is also transparent: it is well hidden inside the model not as a piece of information but as a rule. Narrative may excel at taking snapshots at particular events but simulation provides us with a rhetorical tool for understanding the big picture.

Aristotle on the Holodeck

I previously described stories as being heavily associated with the concept of fate. This idea is the backbone behind the Marxist drama school, developed by Bertolt Brecht and more recently expanded by Augusto Boal. Marxists argue that Aristotelian drama and storytelling neutralize social change because they present reality as an inexorable progression of incidents without room for alterations. Boal's answer to this problem can be found in his corpus of drama techniques, the Theater of the Oppressed,[26] which combines theater with games in order to encourage critical debate over social, political, and personal issues. The forum theater, one of his most popular techniques, reenacts the same play several times by allowing different audience members to get into the stage and take the protagonist's role. This short play always depicts an oppressive situation and the audience is encouraged to participate by improvising possible solutions to the problem that is being staged. Boal's ultimate goal is not to find an actual solution to the crisis— even if sometimes the technique actually accomplishes this—but, rather, to create an environment for debating not just through verbal communication but also through performance. Forum theater perfectly fits the definition of simulation:[27] it models a system (the oppressive situation) through another system (the play).[28]

Video game designers have searched for decades for a way of bringing together the pleasures of stories and "interactivity." As Lev Manovich states,

"Interactive narrative remains a holy grail for new media."[29] Brenda Laurel, a long-time advocate of interactive stories' feasibility has recently defined them as "a hypothetical beast in the mythology of computing, an elusive unicorn we can imagine but have yet to capture."[30] Nevertheless, Boal was able to create a non-computer-based environment that combines a high degree of freedom for participants while creating a compelling experience. However, Boal's success is probably due to the fact that he took a different path than the one suggested by Laurel in her now classic *Computers as Theater*. Laurel, as well as most "interactive narrative" supporters, focuses on Aristotelian closure as the source of the user's pleasure. The biggest fallacy of "interactive narrative" is that it pretends to give freedom to the player while maintaining narrative coherence. The pleasure in Boalian drama is given not by its seamless three-act structure but by the opposite: the ability to interrupt and modify it. Simulations are laboratories for experimentation where user action is not only allowed but also required. Coherence from session to session is simply not a requirement in the game world. The gratification for Boalian actors is not the one of the professional actor but rather the one of the child who plays make-believe. The child is constantly adapting his fantasy to different changes, without the grown-up's obsession with closure. Certainly, simulation challenges narrauthors because it takes away their source of power: the ability to make statements through sequences of causes and effects. To use a metaphor, narrauthors "train" their stories so they will always perform in an almost predictable way.[31] By contrast, simauthors "educate" their simulations: they teach them some rules and may have an idea of how they might behave in the future, but they can never be sure of the exact final sequence of events and result. The key trait of simulational media is that it relies on rules: rules that can be manipulated, accepted, rejected, and even contested. Narrauthors have executive power: they deal with particular issues. On the other hand, simauthors b e h a v e more like legislators: they are the ones who craft laws. They do take more authorial risks than narrauthors because they give away part of their control over their work.

Chances are that Aristotle's famous lost book of Poetics was not about video games, but the fact is that Aristotelianism is also present in the world of games. There are different typologies of games, which can generally be useful even if they usually do not comply with the formal rules of scientific taxonomy. Roger Caillois's game categorization al*ea*, *agon, ilinx,* and *mimicry* is one of the best known.[32] However, I do not find this classification extremely useful as its groups constantly overlap. Instead, I prefer Caillois's distinction between *paidia* and lu*dus,* which describes the difference between "play" and "game."[33] *Paidia* refers to the form of play present in early children (construction kits, games of make-believe, kinetic play) while *ludus*

represents games with social rules (chess, soccer, poker). Although Caillois describes these categories through examples, he does not provide a strict definition. It is common to think that *paidia* has no rules, but this is not the case: a child who pretends to be a soldier is following the rule of behaving like a soldier and not as a doctor. In a previous essay, I have suggested[34] that the difference between *paidia* and l*udus* is that the latter incorporates rules that define a winner and a loser, whereas the former does not.

Structurally, l*udus* follows the same three-act rule behind Aristotelian stories. *Ludus* sessions go through a first act in which the rules are acknowledged, a second act in which players perform, and, finally, a third act that concludes the game and draws the line between victors and losers. Accordingly, the same terms that the Marxist drama school uses in its critique of Aristotelian theater could be applied to *ludus*. *Ludus* games provide an "organic whole," a closed product that can only be explored within a secluded set of rules defined by the author. Certainly, just as it happens in narrative, the reader/player is free to participate within those limits and this is where the pleasure of reading/playing resides. Even so, *ludus* remains ideologically too attached to the idea of a centralized author. By contrast, *paidia* games are more "open-ended" than their *ludus* counterparts.

In both drama and games, the Aristotelian/ludus approaches are definitively the most widely popular and perfected. We are all familiar with "Hollywood endings" and the generally manicheist philosophy behind industrialized narratives. In a similar way, *ludus* provides us with two possible endings: winning and losing. The popularity of this formula is almost surely because of the simplicity of its binary structure. However, this is also its most important limitation. Certainly, *ludus* works great within worlds built around dichotomies. This explains, in part, why current computer games have so much trouble in trying to escape from the fantasy and science-fiction realms. In other words, the binary logic found in *ludus* stands out when delivering games set in fairy-tale-like environments, where things are generally black or white. When you move onto other topics such as human relationships, suddenly distinctions are not so clear-cut. Only *paidia,* with its fuzzier logic and its scope beyond winners and losers, can provide an environment for games to grow in their scope and artistry.

The choice between *paidia* and *ludus* structures is ideologically essential for a simauthor because both carry different agendas. The simulated world in *ludus* games seems more coherent because the player's goals are clear: you must do X in order to reach Y and therefore become a winner. This implies that Y is a desired objective and therefore it is morally charged. Saving the world, rescuing a princess or destroying the alien menace are all classic examples of *ludus* goals. By stating a rule that defines a winning scenario, the simauthor is claiming that these goals are preferable to their opposite

(letting the world crumble apart, leaving the princess behind, and sharing our living space with the aliens). *Ludus* is the simulational structure of choice for modernist simauthors: these designers have moral certitudes (Mario is good, the monsters are bad). Clearly defined goals do not generally leave much room neither for doubts nor for contesting that particular objective. Not surprisingly, all military games are *ludus* because they do not admit options that break its binary logic (friend or foe, dead or alive, with us or against us). Based on this, it would seem that *paidia* is a less modernist technique aimed at designers who have more doubts than certitudes. Well, this is only partly true. Any *paidia* game, such as *SimCity,* leaves its main goal up to the player who can build any kind of city she wants (the biggest, the most ecological, the prettiest, etc.). In other words, *SimCity is* not necessarily forcing players to model their cities to resemble New York, Tokyo, or Paris. However, even if the designer left out a winning scenario (or a desirable urban structure) ideology is not just conveyed through goal rules. A more subtle—and therefore more persuasive—way to accomplish this is through what I will call "manipulation rules." These rules are opposed to goal rules in that they do not imply a winning scenario. The following is a list of manipulation rules from different games: "you cannot touch the ball with your hands unless you are the goalkeeper" (soccer); "pawns can only move forward" (chess); "fruits will give you extra score" *(Ms. Pac-Man).* As all simulations are constrained, limited approaches to (real or fictional) systems, designers have a limited amount of manipulation rules. In the *SimCity* example, the designer could convey his ideology by adding or leaving out manipulation rules that deal with, say, public transportation, racial issues, or ecology. In other media, such as cinema, we have learned that it is essential to discern between what is shown on the screen and what is being left out. In the realm of simulation, things are more complex: it is about which rules are included in the model and how they are implemented. For example, films can be analyzed on how they portray certain minority groups. A game like *The Sims* does showcase characters from different races, genders, and ages (you can even get a tool to design your own character, selecting from different body structures and skin colors). However, the way that *The Sims's* designers dealt with gay couples was not just through representation (for example, by allowing players to put gay banners on their yards), they also decided to build a rule about it. In this game, same-gender relationships are possible. In other words, homosexuality is really an option for the players and it is included in the simulation's model. However, we could perfectly imagine a conservative game where the designers would have ruled out same-gender relationships. Homosexuality is not the goal of *The Sims,* just a possibility. By incorporating this rule, the designers are showing tolerance towards this sexual option but we could hardly say that they are encouraging it (in order

to proselytize, for example, a rewarding *Indus* rule could be implemented where players could be rewarded by their homosexual behavior).

So far, we can distinguish three different ideological levels in simulations that can be manipulated in order to convey ideology. The first level is the one that simulation shares with narrative and deals with representation and events. This includes the characteristics of objects and characters, backgrounds, settings, and cut scenes. For example, a simple switch of character skins could turn *Quake* into a deathmatch between Israelis and Palestinians. (Actually, there is a pro-Palestinian first-person shooter, *UnderAsh,* available at <http://www.underash.net/emessage.htm>). Here the rules of the game remain unchanged: only the characters and settings are modified. However, on an ideological level, this game completely differs from the original.

The second level is the one of manipulation rules: what the player is able to do within the model. In same cases, certain manipulation rules state a possibility. In others, they are necessary to attain a level three goal. For example, in *Grand Theft Auto III(GTA III)* it is possible to shoot prostitutes In order to get money after having sex with them. Even if many people were disgusted by this possibility, it is essential to point out that this is not the goal of the game. Rhetorically, a game where you may kill sexworkers is very different from a game where you must kill them in order to win. Most *paidia* games work within this level.

The third level is the one of goal rules: what the player must do in order to win. It deals with what the author states as mandatory within the simulation. While it is possible to have fun in *Super Mario* without rescuing the princess, the player cannot win unless he accomplishes this goal. Games with goal rules provide both a personal and social reward: whoever reaches the end of a game will be recognized as a good player. On this third level, simauthors funnel through all the available actions and encourage some that will lead to the winning scenario.

At first, it would seem that these three levels are enough for a basic description of how ideology works within simulation. However, there is at least one extra one. The fourth ideological level is the one that deals with meta-rules. Certain simauthors do allow players to contest the model's built-in assumption by giving different degrees of freedom to partially modify the three levels that I have just described. A meta-rule is a rule that states how rules can be changed. Many games include editors that allow players to build "mods" or modified versions of the original games. Other games are open-source and can be changed on their source code level. Some only allow you to do cosmetic changes while others permit more drastic modifications. Still, it is important to keep in mind that meta-rules do not imply neither the death of the author nor the player's freedom. Indeed, meta-rules are rules and as such they are present in the game because the author wanted

them to be there. In other words, it is the author's decision to make the source code or editing tools available to the player. Certainly, a simauthor who allows her public to alter her work is quite different from the traditional idea that we have of the role of the narrauthor. Nevertheless, with or without meta-rules, the simauthor always has the final word and remains in charge because total player freedom is impossible since it would imply that no rules are unchangeable and therefore the game could literally become anything.

I have just suggested a typology of simulation rules (manipulation rules, goal rules, and meta-rules) that can help us to better understand how the designer's agenda can slip into the game's inner laws. However, this typology is not exhaustive and could certainly be expanded (for example, by analyzing the ideological role of the interface rules or by examining the nuances between games which have both winning and losing scenarios and those where you can only lose). I am convinced that it will take us a long time to grasp the potential of simulation as opposed to narrative, mainly because we are so familiar and proficient with the latter. Simulation contests our notions of authorship and also the boundaries that we are used to apply to works of art.

In the Rules of the Rose is the Rose

In his poem "The Golem,"[35] Borges tells the story of the rabbi of Prague who, after long permutations, is able to find the key word that holds the secret of life. A monster, the Golem, is created, but the process involves more than magic words. Borges describes how the rabbi modeled his puppet and then trained him, like an ancient virtual pet, into the mysteries "of the Letters, Time, and Space." The Golem learned very much like an expert system. But in this pessimistic view (similar to the myth of Frankenstein) this "simulacrum," as Borges calls it, fails to reproduce the human soul. Certainly, simulation has its limitations, just like representation. Simulation is only an approximation and even if narrauthors may feel threatened by it, it does not announce the end of representation: it is an alternative, not a replacement.[36]

For the first time in history, humanity has found in the computer the natural medium for modeling reality and fiction. Simulation, in both its *paidia* and lu*dus* flavors, provides a different—not necessarily better—environment for expressing the way we see the world. It is common to contrast narrative and drama because the former is the form of the past, of what cannot be changed, while the latter unfolds in present time. To take the analogy further, simulation is the form of the future. It does not deal with what happened or is happening, but with what may happen. Unlike narrative and drama, its essence lays on a basic assumption: change is possible. It is up to both game designers and game players to keep simulation as a

form of entertainment or to turn it into a subversive way of contesting the inalterability of our lives.

Representation and narrative may still hold a lot of tricks in their bags, but the promise of the yet unexplored field of simulation and games is so vast and appealing that some of us can hardly wait to start experimenting with it. Whoever slowly walked back home after buying a long-awaited video game knows exactly the kind of excitement that I am talking about.

Notes

1. See <www.gamestudies.org>.
2. Brenda Laurel, *Computers as Theater* (London: Addison Wesley, 1993).
3. Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York: Free Press, 1997).
4. Espen Aarseth, *Cybertext. Perspectives on Ergodic Literature (Baltimore:* Johns Hopkins, 1997).
5. Gonzalo Frasca, "Ludologia kohtaa narratologian," *Parnasso* 3 (1999), 365-371. Also published as "Ludology Meets Narratology: Similitudes and Differences Between (Video)Games and Narrative." Available online at <http://www.ludology.org>.
6. Particularly part of the *Game Studies* journal crew, including Espen Aarseth, Markku Eskelinen, Jesper Juul, Aki Järvinen, and myself, among others.
7. Mark Turner, *The literary Mind* (Oxford: Oxford University Press, 1998).
8. Gonzalo Frasca, *Videogames of the Oppressed: Videogames as a Means for Critical Thinking and Debate* (Master's thesis, Georgia Institute of Technology, 2001). Available online at <http://www.ludology.org>.
9. The accuracy of the simulated model, just as it happens in traditional representation, depends on the observer. A simple flight simulator could be very sophisticated for an amateur but dismissed as simplistic by an expert pilot.
10. Espen Aarseth, *Cybertext. Perspectives on Ergodic Literature.*
11. Markku Eskelinen, "The Gaming Situation," *Game Studies* 1, No. 1 (July 2001). Available online at <http://www.gamestudies.org/0101/eskelinen/>.
12. Toys and games (particularly board games) are indeed previous examples of simulational media. However, their models cannot match the complexity of the ones generated with computers.
13. Mitchell Resnick, *Turtles, Termites, and Traffic Jams* (Cambridge, MA: MIT Press, 2001).
14. See <http://www.wired.eom/wired/archive/9.10/mustread_pr.html>.
15. "St. Louis County's regulations on video games upheld," *TheNando Times* (April 25, 2002). Available online at <http://www.nando.com/technology/story/379154p-3030283c.html>.
16. Ashley H. Grant, "Jesse "Video Game" Ventura," *CBS News.com,* April 26, 2002. Available online at <http://www.cbsnews.com/stories/2002/04/26/politics/ main507378.shtml>.
17. For a collection of Osama games, see <http://www.newgrounds.com/collections.osama. html>. While political games have not yet caught massive attention, games based on news and political events are also a great field for experimenting with game rhetoric. Personallay, I especially enjoy the challenges created by this new genre -which I propose to call *newsgaming*- that combines the characteristics of political cartoons with video games.
18. Ventura later decided he would not run for reelection, so we may never see his political video games.
19. The closest antecedent would be Augusto Boal's use of his game/theatrical techniques— which are nothing but computer-less simulations—for his political campaign as a legislator in Rio de Janeiro. For more information on this unique and fascinating project, see Augusto Boal, *Legislative Theater* (London: Routledge, 1999).
20. While this simulation is definitively a parody, its extreme use of cliches and simplification are a clear example of a colonialist attitude in video game design. Having grown up myself during a dictatorship in Uruguay, I find the game insulting. I would not object to a simulation that dealt with issues such as torture or political imprisonment if it aimed at understanding

politics and sociology. In this case, however, it is simply used for entertainment, which is nothing short of disgusting. Alas, I guess South American oppressed are not yet a powerful lobby in the land of political-correctness.
21. Ted Friedman, "The Semiotics of Sim City," *First Monday* 4 (1999). Available online at <http://www.firstmonday.dk/issues/issue4_4/friedman/>.
22. Émile Zola, *Germinal* (Paris: Hatier, 2001).
23. Ken Loach, *Bread and Roses* (Studio Home Entertainment, 2001).
24. It would be possible for the author to create an "open" ending that would rely on the reader's imagination to decide what happened to the strikers. But again, it is the author and not the reader who ultimately decides the use of this form of ending.
25. The fixed sequence that I am referring to is the one of the actual events. The events as told can be rearranged in nonlinear ways through techniques such as flash-forwards and flashbacks. This is the difference between story and discourse, a distinction widely accepted in narratology.
26. Augusto Boal, *The Theater of the Oppressed* (New York: TCG, 1998).
27. Boal even describes the original forum theater play as a "model" or "antimodel."
28. For a more extensive analysis among Boal's drama, games, and video games, see Frasca, 2001.
29. See <http://www.pause-effect.com/reviews.html>.
30. Brenda Laurel, *Utopian Entrepreneur* (Cambridge, MA: MIT Press, 2001), 72.
31. Again, while the reader's interpretation is not predictable, the mechanics of the narration remain inalterable.
32. Roger Caillois, *Les jeux et les hommes: Le masque et le vertige* (Paris: Gallimard, 1967).
33. Unlike English, French and Spanish only have one term for referring to both "play" and "game." Nevertheless, I still use Caillois's terms, because of the different meanings that English attributes to "play," which can both be a noun or a verb.
34. Gonzalo Frasca, "Ludologia kohtaa narratologian."
35. Jorge Luis Borges, *Ficciones* (Buenos Aires: Emecé, 1971).
36. Actually, I have suggested in my work *Videogames of the Oppressed* (following Aarseth's ideas) that simulation and representation only differ in a matter of degree. But for the sake of clarity during these early days of ludology, it may be safer to consider them as different.