VIDEOGAMES OF THE OPPRESSED:

VIDEOGAMES AS A MEANS FOR CRITICAL THINKING AND DEBATE

A Thesis

Presented to

The Academic Faculty

By

Gonzalo Frasca

In Partial Fulfillment

Of the Requirements for the Degree

Master of Information Design and Technology

School of Literature, Communication and Culture

Georgia Institute of Technology

April 2001

THESIS APPROVAL PAGE

Supervisor Professor:

Dr. Janet H. Murray   _____

Committee Members:

Dr. Philip Auslander   _____

Dr. Jay D. Bolter   _____

Dr. Robert Kolker   _____

Dr. Kavita Philip   _____

ACKNOWLEDGEMENT

Many thanks are due to my supervisor Janet Murray for her timely and useful comments and guidance, along with her unlimited stream of patience and support. I would also like to thank my committee members for their support and help. This Thesis would not have been possible without my friend and colleague Markku Eskelinen's support and wise comments. It was him who suggested to "take a look" at Augusto Boal's work in order to see if his ideas could be applied to videogames. Last, but not least, I would like to thank the support and patience from my friend and wife Virginia, who endured Oregon's rainy days while I was playing videogames in sunny Atlanta. To her, all my love.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES AND ILLUSTRATIONS

SUMMARY

This thesis examines the potential of videogames as a medium for fostering critical thinking and discussion about social and personal problems. This analysis focuses on simulation as a representational form, which unlike others such as narrative, creates models that not only display the characteristics of the source system, but also reproduce its behavior by means of a set of rules. Therefore, videogames have the potential to represent reality not as a collection of images or texts, but as a dynamic system that can evolve and change.

After studying how the process of interpretation functions in simulations, I propose to adapt the basic elements of the work of drama theorist Augusto Boal into videogame design. Boal created a set of techniques for participative theater that raises the spectators' awareness about their reality and encourages personal and social change.

I propose two examples of how these goals could be attained by using videogames. One is based on a popular videogame that simulates suburban life. By modifying its design, I suggest ways for players to deconstruct the simulation's ideological assumptions and discuss alternative constructions that reflect their personal opinions. The second, uses videogame design in order to

allow players to present their personal problems as unresolved simulations that

will be shared and discussed among peers.

CHAPTER I

INTRODUCTION

      Vidalita arisca, vidalitay,
      que vivís a monte
      por qué hay tanto campo,
      vidalitay, tanta gente pobre[1].
      (Zitarrosa, 1998)

The above verses belong to the song <u>La desvelada</u> (the insomniac), by Uruguayan singer Alfredo Zitarrosa. They belong to a "Vidalita", a sad and melancholic folk genre performed by the *gauchos* of the South of South America. In this song, Zitarrosa, who finds himself sleepless, literally starts a dialogue with his song. Among many questions, Zitarrosa asks to the song probably the most relevant question that could be asked in an agrarian country like Uruguay. Why, he wonders, if the fields are so large, there are so many poor people? Sadly, the song does not answer back.

Zitarrosa used several times the technique of asking questions to inanimate objects, such as his guitar. Obviously, these are rhetorical questions

---

[1] Unfriendly Vidalita, Vidalitay,
You live in the wild.
Why the fields are so large,
And there are so many poor people?

that are presented to the audience. Zitarrosa looked in his art for the answers

that he could not find in reality.

Like Zitarrosa, I believe that some of the most relevant questions should

be addressed to the medium itself, to the representations that we construct in

order to explain the world that we live in. Also like him, I am interested in

answering very simple questions about the life of people and the contradictions

of our culture and society.

However, the medium that I am interested in is not folk music but games,

and specially videogames. As a recent medium, originated after the second half

of the twentieth century, videogames have become an important part of our

popular culture. However, until recently, it never dared to deal with real-life

contents. Instead, it focused on fantasy genres, monsters and trolls.

This thesis is based on my personal belief that, as any representational

medium, videogames could become a mirror where players could look for answer

to the problems of their lives, just like Zitarrosa did with his songs.

This is why my research focuses on finding design strategies for building

videogames that foster dialogue and critical thinking among players. In order to

do this, I will start by analyzing games as videogames from a formal perspective,

focusing particularly on the way videogames are interpreted. Later, I will analyze

Augusto Boal's drama techniques, which allow actors and spectators to participate in the kind of discussions that I would like to see in videogames. Finally, I will propose two different design examples of how videogames could be designed, inspired by Boal techniques, in order to encourage critical thinking and debates among players.

CHAPTER II

GAMES AND VIDEOGAMES

<u>1. Towards a Definition of Videogames</u>

In this work, I will use the term videogame in the broadest possible sense, including any forms of computer-based entertainment software, either textual or image-based, using any electronic platform such as personal computers or consoles and involving one or multiple players in a physical or networked environment. While this definition explains what I mean by videogames, it does not describe them in an ontological sense. A naïf approach to answer to this question would be to define videogames simply as "games that are played with a computer". Still, we first need to understand what games are and, later, which are their particularities when developed in electronic form. So, the first question that needs to be answered is what a game is. As we are going to see, the definition of a game is not always as precise as it would be desired.

One of the classic references in game studies is Johannes Huizinga's essay, <u>Homo Ludens</u>. Huizinga gives two different definitions. The extensive, first

4

one has been criticized by anthropologist Daniel Vidart (1995) as patchwork that

only adds confusion to the subject. This is why I will just reproduce Huizinga's

second, more concise definition.

> A voluntary activity or occupation executed within certain fixed limits of
> time and place, according to rules freely accepted but absolutely binding,
> having its aim in itself and accompanied by a feeling of tension, joy, and
> the consciousness that it is different from ordinary life. (Huizinga, 1968)

Many elements emerge from this definition. Firstly, that it is an activity that the

player volunteers to perform and, therefore, she is able to quit at will. According

to this definition, play has both time and space constraints. Rules appear as

essential elements and the whole activity is described as being performed by

acknowledging it as different from reality.

Not everybody agrees that games could be explained by a single

definition. Wittgenstein (1994) rather finds a "family of similarities" between them,

"for if you look at them you will not see something that is common to *all*, but

similarities, relationships, and a whole series of them and that". In other words,

Wittgenstein does believe that games have so many different characteristics that

it is not possible to group them under one category.

Unlike Wittgenstein, Roger Caillois does believe that games form a

coherent corpus of activities. In his Les Jeux et les Hommes: le masque et le

vertige, Caillois (1967) defines four main categories of games. The first category is *alea* and it includes all the games that are based on chance, such as bets and lotteries. Games grouped under a *gon* are mainly based on a competition where players try to beat each other, like in races. *Illinx* groups all the games based on the pleasure produced by movement, such as jumping or merry-go-round. Caillois describes role-playing games as *mimicry*, where the player pretends to be part of an alternative reality. Caillois is aware that many games could be included in more than one category (for example, poker could be both *alea* and *agon*). In addition to this classification, Caillois describes games depending on the complexity of their rules. He classifies games with very simple rules as *paidea*, a Greek word that means both child and school. He uses the term *ludus*, the Latin word for game, to describe games which rules are more complex. For example, merry-go-round would be an example of *paidea* and poker would be *ludus*. *Paidea* and *ludus* could be associated with the English terms "play" and "game", respectively.

Jean Piaget studied the role of play and games in children's development. He observed that certain kind of games precede others and studied their relationship with the cognitive, affective and social evolution of children. He classified games in three main groups: games of exercise, symbolic and with rules (Piaget, 1991). The first category includes the games performed by babies and young children, during their first two years of life. These are games where

6

both the senses and movement are involved. The actions of the player are usually repetitive and serve to explore the environment and its objects. According to Piaget, children develop symbolic games between age 2 and 7, approximately. These games rely a lot on the player's imagination and include, for example, role-playing games. In this stage it is common that children associate one object with a different one (for example, a piece of wood might become a "gun"). When children are about 7 years old, they get involved in a new form of play that involves rules, like soccer or racing. Piaget named this third category "games with rules" and it develops while the child goes under the socialization process. These three main groups of play behaviors emerge, according to Piaget, as the child develops, but the three classes will remain during adulthood.

1.1 Paidea and Ludus

I have previously reviewed the difference between play and game activities (Frasca, 1997a). Since that work is not available in English, I will summarize its main characteristics. From both Caillois and Piaget's works, it is possible to distinguish games associated with early childhood from those played by older children and adults. Caillois describes the first group, *paidea*, as having less complex rules, while Piaget argues that they do not have rules at all. However, Piaget cannot be right, according to the point made by anthropologist Daniel Vidart in his study of games. Vidart points out that the child who is playing and pretending to be a plane is following a clear rule: to extend his arms

7

pretending to be flying. This "plane" make-believe game has particular rules, and they differ from, say, pretending to be a doctor or a locomotive. According to Piaget's classification, these make-believe games would be symbolic and could not be described as "games with rules". It is clear that Piaget and Vidart have different definitions for "rule". The problem is that none of them gives an explicit definition. However, two examples given by Piaget will give us a better idea of his understanding of rules. The first one is about a young boy (Piaget,1991) who has not reached the stage of "games with rules" but plays to run around some bushes. Piaget is particularly interested in his behavior, since the child seems to be following a rule: to run in circles as fast as he can without touching the bushes. Piaget concludes that he is not following a rule, but a *regularity* (Piaget does not explain the difference between rules and regularities). Later on his book, Piaget describes another case where he questions a group of young, pre-socialized kids that have been playing for a while. He asked them who won the game. The children looked amazed and do not answer, because they do not understand the question: there is not winning and losing before socialization. This example seems to indicate that Piaget's idea of rule is associated with defining a winner and a loser. According to the previous example, it would seem that Piaget thinks that what regulates exercise and symbolic games are not rules, but regularities. This would explain Vidart's observation of rules in young children, since he uses a single term, "rule", to refer to both Piaget's "rule" and "regularity". As we are going to see in the next chapters, the difference between

games that define a winner and a loser from those that do not do so is very useful to understand both games and videogames. For the sake of better understanding, I propose to differentiate those groups by using two different nouns. I propose to use Caillois' terms, but with a slight change on their meaning. While Caillois stated that the difference between *paidea* and *ludus* was the complexity of their rules, I will use the term *ludus* to refer the games that have a result that defines a winner and a loser (this group would match Piaget's "games with rules" category). On the other hand, I understand by *paidea* all the games that are based on Piaget's "regularities" and do not define a winner and a loser. For the sake of coherence, I will also refer to Piaget's "regularities" as *paidea* rules, and to Piaget's "rules" as *ludus* rules.

Game	Category	*Paidea* rules	*Ludus* Rules
Merry-go-round	*Paidea*	To turn in circles; players must hold hands	None
Chess	*Ludus*	Pawns move one square at a time.	To take the other player's king.

Table 1. Examples of *paidea* and *ludus* rules

Merry-go-round and chess are the two examples analyzed on Table 1. The first one is a clear case of *paidea*, since it does not have *ludus* rules (nobody wins or loses at this game). It has many *paidea* rules but I have just described two of the

main ones. One states that players must hold hands, the other that they have to turn in circles. The second game, chess, is a *ludus* since one player will win at the end of the game session (unless the match results in a draw). This game has both *paidea* and *ludus* rules. The *ludus* rules on the table states that one player must take the other's king. Even though I have given just one example, chess can have several *ludus* rules. For example, another rule states that one player can give up the match. In addition to this, it is possible to define a winner after a certain time, depending on the amount and value of each player's tokens. Chess also have *paidea* rules, like the ones that describe how to move the tokens. These rules are necessary for playing the game, but do not state a condition for ending the match.

The problem with the categories of paidea and ludus is that they are not easy to distinguish for an external observer. For example, a child who is jumping on one foot is following a *paidea* rule: to maintain her equilibrium without using both feet. But if the child has a watch and wants to see if she can stand jumping during 10 minutes, she has created a *ludus*. As we can see, it is easy to switch from *paidea* to *ludus*.

In general, most of the play involving toys such as construction and role-playing can be described as *paidea*. The traditional space for *paidea* is the playground, while the space for *ludus* is the board, as in the chessboard, or the

field or court, as in the soccer field. Time is also different in both categories. Unlike *paidea*, *ludus* games are usually time constrained.

1.2 *Ludus* and *Paidea* in the Computer

Paidea is present in the computer in such simple activities as playing around by typing random characters on a word processor. Solitaire, the popular card game distributed with Microsoft Windows, is an example of *ludus* in the computer.

There are many ways to classify videogames. The industry and the specialized magazines use different genres, such as *simulations*, *platform games*, *fighting games*, etc. These typologies emerged as a need to classify the different products that are available to the players. It is common that these categories overlap and it is common that specialized magazines classify a particular game under two or more different genres. In other words, these typologies are naïve rather than scientific.

Two French videogame critics, the Le Diberder brothers, created a particular classification (1993) based on the industry's genres. They group videogames in three main categories: *arcade*, *simulations* and *adaptations*. The first category includes, among others, shooting games (like Space Invaders) and

platform games (<u>Super Mario Bros</u>.). <u>Sim City</u> and <u>Microsoft Flight Simulator</u> are included on the simulation category. The third group is defined as games that existed before computers and were adapted into the new medium, such as Microsoft Windows' <u>Solitaire</u>. Canadian media theorist Jean Paul Lafrance (1994) disapproves Le Diberder's classification, pointing out that it does not follow the basic rules of taxonomy (for example, some games could be described both as simulations and adaptations). It is beyond the goals of this work to provide a coherent taxonomy of videogames. Even if it is clear that Le Diberder brothers' classification could be improved, I find useful their description of the genre "simulation". The Le Diberder brothers describe the genre as having three main characteristics: they represent a "world"; they pay great attention to detail and they have no clear goals. These games have evolved from early computer simulations, which were used by scientists to predict the behavior of complex systems or for training purposes, as in military flight simulators. Scientists are interested in this form of representation because it lets them to predict the behavior of the original system. Instead, players find in simulations a realm where to experiment with a complex system; they simply "play around" with it.

A videogame simulator like <u>Sim City</u> models the behavior of a real city on the computer. As Le Diberder brothers state, <u>Sim City</u> has a complex set of rules and no clear goal. The player can set her own goals: to create the smallest city without becoming dysfunctional, or to create the richest city, or the biggest city,

or the most aesthetically beautiful urban organization. It is impossible to win in

Sim City: it is a *paidea* videogame[2]. The Le Diberder brothers use the term

"world" to describe the space of simulations. Actually, the space of simulators

usually behaves like a playground, where many different activities can be

performed. For example, it is possible to play with all the objects that are

available on the city simulator.

As it happens in the real world, it is easy that a player switch from *paidea*

to *ludus* and vice versa. A single player might be involved in paidea while piloting

in Microsoft Flight Simulator without any goals, but she may suddenly define a

rule of *ludus* if she decides that she would win if she manages to fly under a

bridge without crashing. The rule of *ludus* would be: "I win if I can make it; I lose if

I can't". In general, many simulators are both designed as environments for

paidea and *ludus*. For example, many flight simulators include different missions

(particular goal-oriented activities where the player has to accomplish a certain

task, such as bombing a city or landing under bad weather conditions). These

ludus are hard coded within the program: the program includes a *ludus* rule and it

will tell the player if she succeeded of not at the end of the session. However, this

same mission-based simulator could also be used for *paidea*: the player could

simply not follow the rule and would just play around with the airplane. Actually,

this is true is any *ludus*. And it is true in any simulated environment. I could use

---

[2] While winning is impossible, the session ends when players run out of resources.

Microsoft <u>Word</u> as an environment for play, even if it was not designed with that goal in mind. I could play around by typing randomly and then coloring the text. I can even create a *ludus*: let's see how many words I can type in one minute. Any object and space, concrete or abstract, real or simulated, could be used for *paidea* and could be used for creating a *ludus*. It is the player and not the designer who decides how to use a toy, a game, or a videogame. The designer might suggest a set of rules, but the player has always the final decision.

CHAPTER III

GAMES, VIDEOGAMES AND REPRESENTATION

Brenda Laurel starts her <u>Computers as theater</u> (1993) by narrating the story of how <u>Spacewar</u>, the first videogame, was born. According to its creators, <u>Spacewar</u> was the "natural" thing to create when they first had access to a CRT (cathode-ray tube) display. Laurel wonders why they did create a game instead of just displaying images. She concludes that the computers' "interesting potential lay not in its ability to perform calculations but in its capacity to *represent action in which the humans could participate*" (Laurel, 1993). In order to understand videogames, it is essential to understand this participatory form of representation. Is this kind of representation available in other media or is it just an essential characteristic of computers? In which ways is it different from other forms, such as photography or narrative? How is the participation orchestrated? The main goal of this section will be, therefore, to find formal tools that will let us understand the mechanics of videogame representation and interpretation.

First of all, it would seem that it is possible to create similar forms of participatory representations outside the computer. For example, games and toys can behave similarly to <u>Spacewar</u> (think of the manipulation of a toy rocket).

While the toy rocket is clearly a representation (it models an actual rocket through its design and may include other characteristics, like sound effects), the videogame rocket can mimic a spaceship with a different kind of complexity. Not only the virtual rocket can be animated, but it can also model the machine with more accuracy by including characteristics such as fuel levels, acceleration, gravitational power, etc. The player is usually able to manipulate some of these characteristics, such as the speed of the spaceship. Even if they are different, both the toy and the videogame represent rockets in a different way than an image or a film. Real and virtual toys allow the player to modify the characteristics of the representation, while the content of a photograph or a film will not change based on the observer's actions. It seems clear that the first group of representations differ from the second. Still, the main question remains: what is the real difference between them? Is it just user participation? Is a videogame interpreted in a different way than a film? How do those processes work? Does the relationship between author and reader change? In order to answer these questions, it is necessary to first understand the essential characteristics of the computer as a medium. During the last decade, many authors have proposed alternative descriptions. I will give next a short review of the three most relevant ones.

1. Three Takes on Computer Representation: Laurel, Murray, Aarseth

Brenda Laurel's Computers as theater was probably the first serious attempt to understand computers as a medium instead of looking at the machine as a big calculator. Her approach was very original mainly because she argued that software design should be created under the same rules that apply to drama, as described by Aristotle more than twenty centuries ago. Laurel uses Aristotle's Poetics not only as a guideline for creating videogames but basically any software, particularly graphical user interfaces. Her approach focuses on one main characteristic that drama provides and traditional narrative lacks: user performance. She views the computer as a medium for designing action where users play equivalent roles to both the drama performer and audience member. The title of her book shows that she sees the relationship between drama and the computer as a simile (she does not argue that computers are theater) in order to help designers to create useful software that remains compatible with Aristotelian ideals. Interestingly, the idea of the computer as theater did not catch on as much as the comparison with narrative. During the last decade, researchers such as George Landow or Jay Bolter have been more interested on textual-based software, like hypertexts, where they could apply the rich corpus of previously existent literary theories. Therefore, the idea that the computer and narrative were related grew stronger among the academy. In addition to this, the fact that the videogame industry became closer to Hollywood and not to

Broadway, easily explains why developers feel more at ease with seeing the computer as a medium for narrative rather than drama.

The second and most popular approach to date, is Janet Murray's <u>Hamlet on the Holodeck</u> (1997), where she describes the computer as a new medium for the old practice of storytelling. Her analysis includes videogames along with other artifacts such as hypertext, web serials and interactive chat characters. She distinguishes three main qualities in the medium: immersion, agency, and transformation. By immersion she understands the power of the medium for helping the user to construct belief, rather than just suspending disbelief. Agency is the capacity of the medium to allow the user to perform actions that have consequences on the representation. Finally, by transformation she means the ability to morph into multi-perspective, simulated worlds that can enhance the two previously described characteristics. Murray views the computer as a medium that allows storytelling expanding towards new expressive possibilities. Murray expands the concept of storytelling –which she calls *cyberdrama*-, that includes both traditional (literature, film, drama) and interactive forms (videogames, hypertexts, chatting robots such as Eliza).

While both Laurel and Murray describe the computer as a medium and analyze different phenomena including interfaces, games and hypertext, Espen Aarseth focused his <u>Cybertext</u> (1997) exclusively on the analysis of textual

representations. While most of his examples are computer-based (hypertexts, adventure games, multi-user dungeons), his analysis includes conventional texts, too. Instead of comparing them to drama or narrative, he focuses on their behavior, comparing them to machines. Aarseth's "cybertext" term derives from Cybernetics, a discipline that studies system dynamics, and has been applied to the study of complex systems, including organizations and human behavior, and particularly computer simulation. Aarseth's "cybertexts" are machines that produce signs, which vary from reading to reading. It is important to distinguish between different sequences of texts that readers perceive and their interpretations. This difference is crucial for the understanding of Aarseth's concept:

> Since literary theorists are trained to uncover literary ambivalence in texts with linear expression, they evidently mistook texts with variable expression for texts with ambiguous meaning. (Aarseth, 1997)

Different readers may interpret in different ways the meaning of a traditional text like Les Misérables. However, the sequence of signs (words, paragraphs and chapters) in Les Misérables is fixed. The meaning of a hypertext story like Afternoon, a story can also be interpreted in different ways. But unlike Les Misérables, different readers will access to different sequences of words and paragraphs. Aarseth views Afternoon, a story not as a text, but as a cybertext: a machine that produces different texts.

Even if Aarseth studies texts, this does not mean that his ideas cannot be applied to games. Actually, he does analyze adventure textual-based games and argues that

> to claim that there is no difference between games and narratives is to ignore essential qualities of both categories. And yet, as this study tries to show, the difference is not clear-cut, and there is significant overlap between the two. (Aarseth, 1997)

Aarseth complements the concept of cybertext with the one of "ergodics". Instead of using the vague, but in vogue, term "interactive", Aarseth prefers to describe these texts as *ergodic* literature, defined as texts where "nontrivial effort is required to allow the reader to traverse the text" (Aarseth, 1997). By nontrivial, he means active participations -like clicking or typing- rather than the traditional actions associated with reading - like turning pages-, which does not modify the shape of the text itself.

Unlike the three authors that I have just reviewed, I am strictly interested in games, not in drama, storytelling, nor texts. As I have previously stated, my goal in this section of the thesis is to find formal tools for understanding the mechanics of videogame representation and interpretation. I am interested in understanding how players interpret both the rules and the content of games and how authors craft them. Since Aarseth makes a formal distinction between the interpretational level and the "ergodic" (understood as the rules that govern the reader's use of the representation, for example the set of rules in a videogame), I am inclined to follow his ideas. Even if Aarseth analyzes both graphical and textual games, his

focus remains in texts. This is why I will need to expand the reach of his

approach to include videogames. In order to do this, I will take further his

application of cybernetics in the study of computer representation by using

simulation theory. Simulation theory is a direct descendant of cybernetics and will

let us analyze videogames, cybertexts and non-electronic toys, games and texts

as systems whose behaviors can be modeled on other systems.

2. Simulation and Systems

Computer simulation heavily relies on system theory, which is defined by

the "Principia Cybernectica Web" as

> the transdisciplinary study of the abstract organization of phenomena,
> independent of their substance, type, or spatial or temporal scale of
> existence. It investigates both the principles common to all complex
> entities, and the (usually mathematical) models which can be used to
> describe them.[3]

Computer simulation studies the modeling of systems, understood as "a set or

arrangement of entities so related or connected so as to form a unity or organic

whole"[4]. Scientists have found in computers a natural medium for simulation.

Historically, simulation has been performed long before the invention of

computers. For example, early airplanes have been tested by creating small

models. This kind of simulation is known as analog, in opposition to digital

simulations, which are performed by computers. The Encyclopedia Britannica

---

[3] <u>Principia Cybernetica Web</u>. http://pespmc1.vub.ac.be/SYSTHEOR.html
[4] "System" [Definition of]. <u>Web Dictionary of Cybernetics and Systems</u>.
http://pespmc1.vub.ac.be/ASC/System.html

defines computer simulation as "the use of a computer to represent the dynamic

responses of one system by the behavior of another system modeled after it."[5]
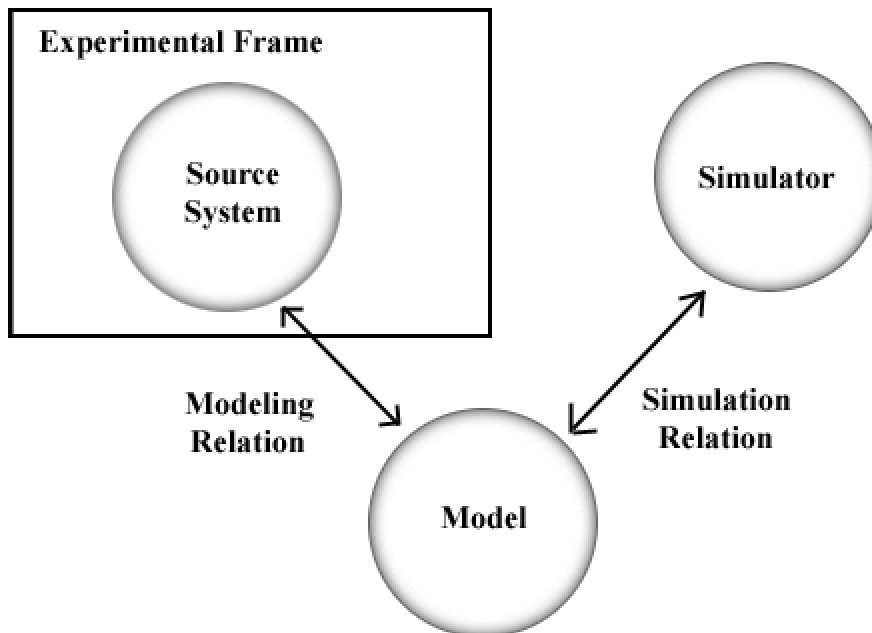
Figure 1 – Basic elements in a simulation

Figure 1 represents the basic elements in a simulation, as described in Theory of

Modeling and Simulation (Zeigler et al., 2000). The three main elements are the

source system, the model and the simulator. Let's use the example of a boat

simulation. The source system is a real boat, like the Titanic. The experimental

frame is the "set of conditions under which the system is observed or

experimented with". For example, if our simulation was performed in order to

understand how the Titanic worked, the experimental frame would focus on the

---

[5] Encyclopedia Britannica Online. Computer simulation.
http://www.britannica.com/eb/article?eu=1635&tocid=0

characteristics of the boat as a machine, including its shape, weight and mechanics. For this purpose, some characteristics, such as the price of a first class cabin or the number of eggs in the kitchen, would be excluded.

The model is another system, a "set of instructions, rules, equations, or constraints for generating I/O [input/output] behavior" (Zeigler et al., 2000). For example, it could be a set of equations that model the behavior of the different mechanical elements of the ship.

Finally, the third element is the simulator, which is defined as "some agent capable of actually obeying the instructions [of the model] and generating behavior" (Zeigler *et al.*, 2000). In computer simulation, the simulator is a program in the computer. However, it could also be the human mind (a person could simulate on her mind how the Titanic worked).

It is possible to find many examples of simulation on the computer. For example, a folder in Microsoft Windows simulates a real folder. Not only the virtual folder looks like a cartoonish representation of a real one, but it also behaves similarly: it can be opened to access to documents and it can be labeled. However, the virtual folder is not a completely accurate representation: for example, it is impossible to bend it or to make a drawing over it. In short, the

virtual folder is a simulation. In this case, the source system is the real folder, the model is the virtual one, and the simulator is the operating system.

Interestingly, the definition of simulation perfectly describes how toys represent reality. Unlike photographs, words or sounds, toys do not simply represent but they model a system. A toy car is not just the representation of the static characteristics of a real car (color, shape) but it also represents its behavior (it runs, its wheels turn). While computer simulation theory was certainly not designed to explain the mechanics of toy representation, theorists do explicitly keep this analogy in mind, as this quote from Paul Fishwick shows:

> The use of simulation is an activity that is as natural as a child who *role plays* with toy objects. To understand reality and all of its complexity, we must build artificial objects and dynamically act out roles with them. Computer simulation is the electronic equivalent of this type of role playing (Fishwick, 1994)

Since both videogames, non-electronic games and toys can be separately understood as "a set or arrangement of entities so related or connected so as to form a unity or organic whole"[6], they fit the definition of system as defined in the Web Dictionary of Cybernetics and Systems. I propose to use simulation theory to analyze these games as simulations, in order to understand how they work and, particularly, how players interpret its content.

---

[6] "System" [Definition of]. Web Dictionary of Cybernetics and Systems.
http://pespmc1.vub.ac.be/ASC/System.html

2.1 Simulation and Non-Real Source Systems

While, historically, simulations have modeled real systems, computers and particularly videogames, have allowed to simulate systems that have no real referents. As Juan Grompone (1996) states when he describes the classic videogame Breakout where the user controls a paddle that has to tear down a wall made of bricks, this is the first simulation where the simulated rules of physics are not consistent with reality. Still, some authors think that a simulation needs to be based on reality. Aarseth (1997) does not describe John Conway's *Game of Life*[7] as a simulation "since there does not have to be any external phenomenon that can be said to simulate". On the other hand, Fishwick claims that it is possible to simulate "non-real systems". I think that the reason why some authors think that there is a need for a real referent is a historical one. Since simulation has its roots in science, it was normal for scientists to simulate real systems instead of fantastic constructions. The computer, and particularly videogames, has allowed authors to simulate systems that do not exist and even contradict the rules of physics of our universe. To claim that there is a need for a real referent in simulations is similar to say that the word *unicorn* is not a sign since its referent is not real. Therefore, I will apply the term "simulation" to the

---

[7] The *Game of Life* is a mathematical game constituted by mathematical objects known as cellular automata, which behave according very simple rules. Even if these rules are simple, the behavior that emerge from it as much more complex. For a Web version of this game, visit http://www.bitstorm.org/gameoflife/

representation of processes that mimic a system by the behavior of another, even if its source system is not real.

For example, I personally think that the game <u>Tetris</u> is not based on a real source system: it is not simulating reality but just creating an abstract environment where the player can test her skills. I have been playing <u>Tetris</u> for years and it never bothered me that it lacked characters or settings. This is why I was particularly surprised when I started hearing some people saying that it was a "narrative" game. To me, this was shocking. I was not able to find any "narrative" characteristic on it, any more than I could find them in my yo-yo. I remember having a discussion about this with Janet Murray and at the moment I really thought that she was pushing her interpretation way too far. As she explains in *Hamlet on the Holodeck*, she believes that Tetris

> is a perfect enactment of the overtasked lives of Americans in the 1990s - of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught. (Murray, 1997)

Obviously, Murray was referring to the same blocks - or tetraminos, as they are technically called - that I played with. Her interpretation was not of the signs in <u>Tetris</u>, but of her relationship with them. She had referred to a particular system – the overtasked life of the nineties- and interpreted system as a simulation of the

first one. Instead, I was playing the game as a functional level, without needing to refer it to some higher, more complex structure.

It is important to stress that Murray uses the word "enactment", instead of representation. Of course, a theatrical play is also enactment, but the difference is that she recognizes the source system not by the signs that it produces but by the signs that are produced as a consequence of the player's actions. A spectator of Tetris may arrive to the same conclusion by watching Murray to play. However, the difference is that all he can do is infer the simulation rules by observing, when the player can do it by testing.

This example clearly shows that the author does not set the meaning of a simulation but it is rather interpreted by the player (or observer, since an external viewer can also interpret it). Therefore, it seems that the definition of simulation that I have been using – the representation of a system by the behavior of another- is incomplete. It is the observer and not the author who connects the source system and the model.

CHAPTER IV

SIMULATION AND INTERPRETATION

1. Simulation and Semiotics

      The fact that simulation theory may have taken for granted that

simulations could have different interpretation, reminds me of the difference

between the Sassurean and Peircean models of sign (Eco, 1976). While

Saussure's model distinguished between two poles of the sign–the *signifiant*,

understood as the material manifestation of the sign and the *signifié*, which is the

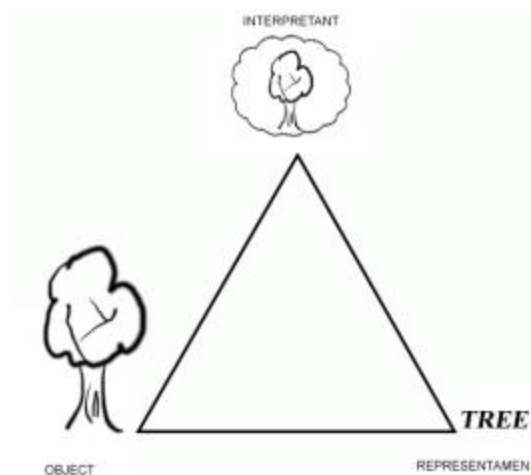concept that it refers to- Peirce's introduced a new element, the *interpretant*.

Figure 2 – Peirce's triadic model of sign

Peirce's defines a sign as "something which stands to somebody for something in some respects or capacity"[8]. He proposed a model that included three categories (Figure 2): the sign (or *representamen*, which is the equivalent to Saussure's *signifiant*), the *object* and the *interpretant*, which he defines as the product of the interpretation of the sign in somebody's mind. Umberto Eco (1976) describes Peirce's *interpretant* as the "definition" of the *representamen*; "as another representation which is referred to the same 'object'". Peirce states that sign is a sign because it is interpreted by somebody and that interpretation creates a new sign, the *interpretant*, which would be an idea that the observer has about the original sign.

As we have seen in the example of the differences between my interpretation of <u>Tetris</u> and Murray's, the interpretation of simulations[9], as any semiotic interpretation, does not escape from the need to consider that different observers may interpret it differently and, therefore, associate it with different source systems[10]. However, as I will show, the reasons for different interpretations of a simulation may not be just caused by two observers having different concepts of which is the source model that is being simulated. I will explain this by using two examples. The first one is <u>Pong</u>, the classic videogame, and the second is a toy.

---

[8] Peirce CP.1.372 .

[9] Simulations can be considered signs since they fit Peirce's definition: "something which stands to somebody for something in some respects or capacity". Simulations can be described as a model that stands to somebody for the source system in some respects or capacity.

[10] Where the concept of "source system" in simulation theory would be the equivalent to Peirce's "object".

In Pong, the first highly popular arcade videogame, the player controls a paddle and must use it to hit a ball. While its original name clearly refers to another game, ping-pong, it would make perfect sense to say that it is a tennis videogame. Obviously, ping-pong and tennis are structurally very similar games, but they are still different. The fact that the first is also called "table tennis" shows both its similarities and its main difference: the use of a table instead of a tennis court.

As a simulation, Pong is representing a complex system through a less complex one. During the process of abstracting the source system, Pong only kept some of its characteristics: the ball and the paddles, plus an abstract delimited space. Since ping-pong and tennis are very similar systems, their abstract simulations could be very similar and the final system could be interpreted as either of them by a player.[11] Pong could have been marketed as either a tennis or ping-pong simulation without any problem.

Let's suppose that the worst videogame player on Earth, who until that moment never heard of Pong, decides to give it a try. This player does not understand that he has to hit the ball back. Instead, he thinks that the computer-

---

[11] This would happen in the early days of videogames, where graphical limitations made designers to create very abstract visual representations of the game. Nowadays, videogames extensive use of photo-realistic 3D animation would make the confusion impossible.

controlled paddle throws the ball against him and his goal consist on dodging it.

This player would not recognize tennis as the simulation's source system.

Instead, he might think that this is a weird soccer penalty-kick simulator, or

maybe that the thing does not make any sense at all. His interpretation would be

different from the one of somebody who is very experienced in <u>Pong</u>. The fact

that both think of different source systems is not caused by them having different

ideas of what penalties and tennis are but because of their particular perception

of the model. While one saw a model that has the basic rules of a penalty game,

the other perceived a model that has the rules of tennis. These different

interpretations are caused by the particular experience that each player had with

the model. Interpretation not only depends of the idea that the observer has from

the source system, but also from the idea that the observer has from the model.

I will propose a second, simpler example to explain this situation. .

Imagine that we have a toy representing a robot. If we analyze it as a Peircean

sign, we can say that we have a *representamen* (the toy), which represents

something else (a robot, the object) according to the observer's concept of

"robot", the *interpretant* ("if it is anthropomorphic but made of mechanical parts,

it's a robot"). But there is a very particular kind of toy, known as "Transformer".

Based on a Japanese animated television series, the Transformers are robots

that can transform themselves into different machines. When you first open a box

containing a Transformer, you see a puppet with all the characteristics of a robot.

After certain manipulations --which may be tricky and, in certain cases, puzzle-

like-- the robot can be transformed into, let's say, a plane. The toy is articulated,

made of connected moving parts but at any moment you have to dismantle it into

different pieces: the transformation takes place without the toy losing any matter.

Obviously, the toy has two different states: robot and plane. Each one of them

can be understood using the triadic sign (Figure 3). Our problem starts when we

try to understand the Transform as a whole. Is it a robot or a plane or both at the

same time?
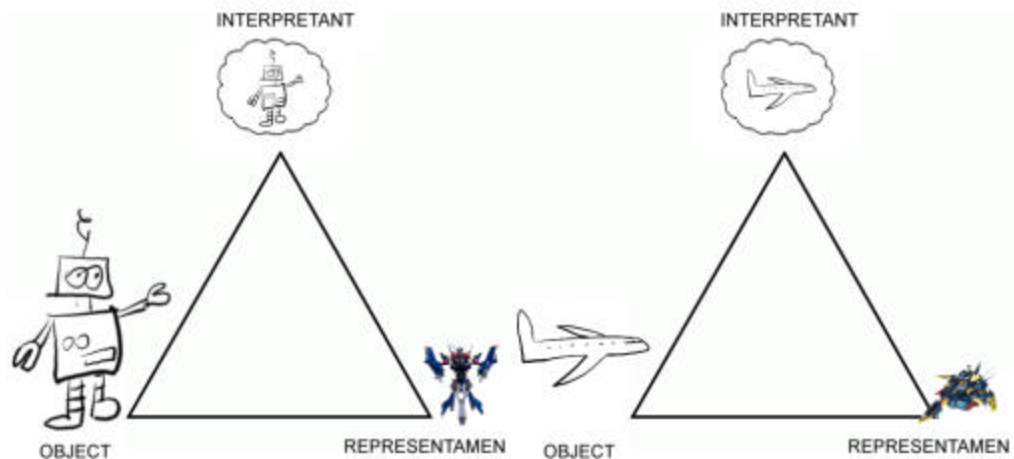
Figure 3 – Is the Transformer a robot, a plane or both?

Imagine that we gave a Transformer to a child who has never watched the

television series and is not familiar with its ability to change. If the transformation

is not easy to perform --actually, it is quite common that you have to use a lot of

pressure to transform the toy -- the child will just use it as a robot and never

discover that it could also become a plane. In order to fully appreciate the toy you

need something more than the mere object: you need a rule of behavior. In this case, the rule is "if you perform certain movements, your toy will change its state". Without that rule, the toy is simply a robot; with it, it becomes a Transformer, a dual state toy. Peirce's model of sign does not take into account this inner mechanism that can modify the *representamen* and transform it into something else.

Before going further, it is important to make sure that the reader is not thinking that the Transformer issue is nothing more than an interpretation problem. There is a classic example in semiotics about different interpretations: the color black is conventionally used by occidentals for showing grief after somebody's death, while some cultures use the color white. Facing a woman dressed in black, the Frenchman's interpretation of her feelings will differ from the Chinese's. In this case, the *representamen* (the woman in black) remains the same. What varies is the *interpretant*. In the case of the Transformer, the *representamen* does change depending on the player's actions. Of course, the interpretation that the player makes of the resulting sign may differ. If we created a robot that got transformed on a doll dressed in black, it would be open to different interpretations. Our Transformer toy is not just open to different interpretations, but, unlike most signs, it can change its *representamen* through the performance of the player by applying a particular rule. Of course, it is possible to consider the Transformer not as one toy, but as two. To do this would

be to avoid the issue, without trying to understand the essence of the problem[12].

The Transformer[13] was designed to have two different states. There is a specific rule that transforms it from robot to plane and vice versa.

Since Peirce's triadic model of sign does not take into account that the *representamen* could be dynamic, it seems that it would need to be expanded it in order to allow it to explain simulations (for the sake of the simplicity of the explanation, we will keep using toys as examples of simulations. However, this could be applied to more complex simulations).

2. Mental Model and Simulation

Peirce suggested that there is not a universal concept for an object. For example, different observers have different ideas (*interpretants)* of what a tree is. A botanist may think of it with more detail than somebody who lives in a desert and had very little contact with trees. A similar thing happens with simulations. Based on our previous example, it would seem that, at least in the case of simulations, *representamens* are not fixed entities, but they also depend on the observer's idea of what it is. Again, the idea that an observer has about the

---

[12] If the Transformer had dozens of different states, the problem would become evident. In order to understand its mechanics, we have to analyze it as a whole, not in isolated parts.

[13] Something interesting happened when I was looking for some Transformers in Amazon.com. Unlike most of the toys that they sell, which are represented by only one photograph, Transformers are the only that always have two, representing its two opposite states.

Transformer just by playing with it during two minutes is different from the idea that somebody who owned one for a year may have. Actually, there is a category in human-computer interaction (HCI) theory that exactly described this missing category: the mental model. Philip Johnson-Laid introduced the concept of mental model in his book Mental Models (1983) and, since then, it became a crucial concept in HCI. In The Design of Everyday Things (1990), Donald Norman explains the concept of mental model as the idea that a user has of a system based on her interactions with it.

> People form mental models through experience, training, and instruction. The mental model of a device is formed largely by interpreting its perceived actions and its visible structure. (Norman, 1990)

However, HCI theorists' idea of interpretation of simulations heavily relies on the designer's intention. They usually pay attention to what the author meant and not on what is interpreted by the observer, as this quote from an HCI manual shows:

> Mental models are often partial: the person does not have a full understanding of the working of the whole system. They are unstable and are subject to change. They can be internally inconsistent, since the person may not have worked through the logical consequences of their beliefs. They are often unscientific and may be based on superstition rather than evidence. However, often they are based on an incorrect interpretation of the evidence. (Dix, *et al.*, 1993)

The key of this quote is in the words "incorrect interpretation". Semiotics only analyzes interpretations: it does analyze signs as it, independently on what were the intentions of the entity that emitted it. On the other hand, HCI's goal is to make sure that the designer's intentions match the user's interpretation. In other words, that the user's mental model is identical to the design's model.

In the example of the Transformer, it is possible to say that the interpretation of an observer would depend on her mental model of the toy, on the idea that she has on what the toy's behavioral rules are. Therefore, I propose to borrow the concept of mental model form HCI and incorporate it as a new category of Peirce's model of sign. By doing this, we will have an expanded model that would be able to explain the Transformer in particular, and simulations in general, as a sign (and, therefore, will allow us to understand how the interpretation process of simulations work). To be coherent with Peirce's terminology, I propose to call this category the *interpretamen* - since the mental model is to the *representamen* what the *interpretant* is to the *object*- understood as the idea, or mental model, that an observer has from the *representamen*.
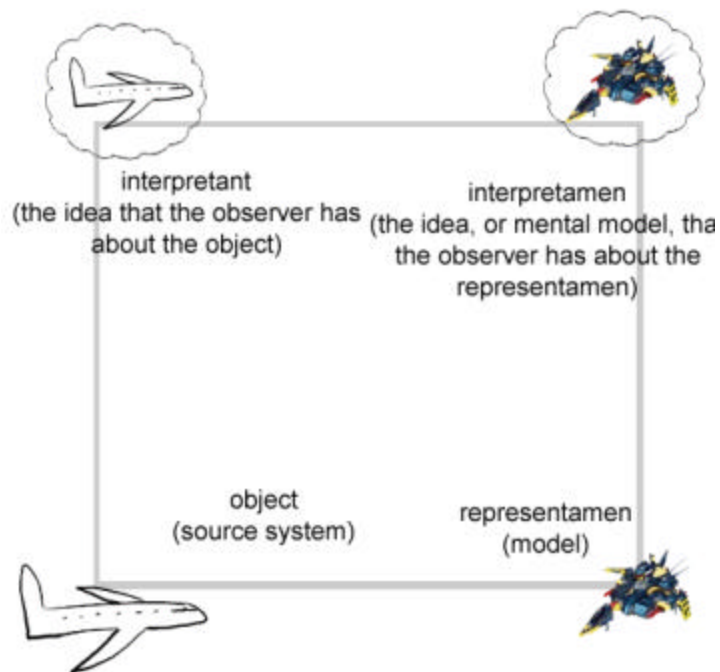
Figure 4 - Observer A views the Transformer as a toy plane.

interpretant
(the idea that the observer has
about the object)

interpretamen
(the idea, or mental model, that
the observer has about the
representamen)

Transformer
object
(source system)

representamen
(model)
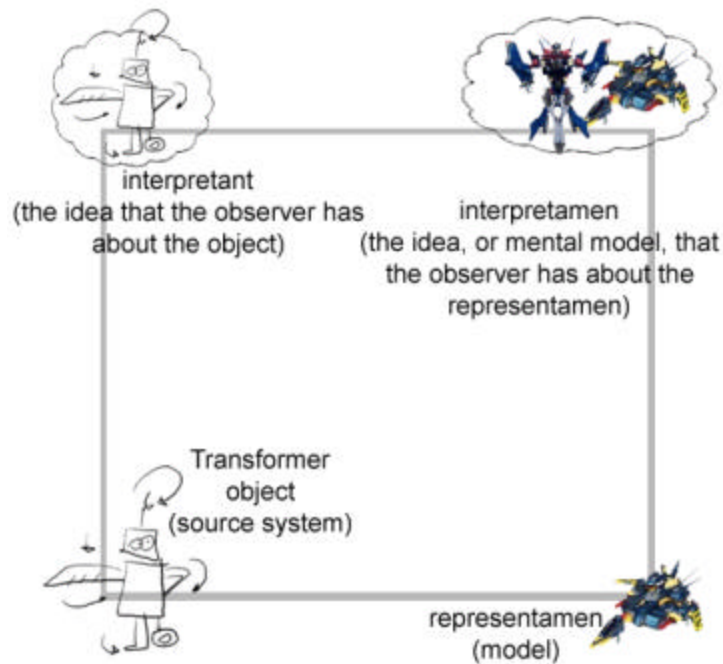
Figure 5 - Observer B views the Transformer as a toy that can be transformed
into either a plane or a robot.

Figure 4 and 5 show two different observer's interpretations of a Transformer.

Observer A (Figure 4) was given a Transformer without knowing that it could be

transformed into different states. Instead of considering the Transformer as a

multiform toy, observer A viewed it as a static toy. In this case, the

representamen is the plastic toy object, the *interpretant* is "articulated object with

the shape of a plane", the *interpretant* is the particular idea that the observer has

from planes (for example, that they are metallic and they have wings) and the

object is the ideal concept of plane. In the second case (Figure 5), observer B

was able to interact with the Transformer and changed its shape into a robot.

Therefore, observer B had a different *interpretamen* of the *representamen*. In this

case, the *interpretamen* could be described as "articulated object that can be

transformed into two different objects: a robot or a plane". Both observers A and

B interpreted the Transformer differently: one recognized it as a plane, while the

other interpreted it as a dual-state toy. These interpretations were a

consequence of the different ideas, or *interpretamens*, that the observers had

about the Transformer as a system – or as a sign, or model-: one viewed it as a

plane, while the other recognized it both a robot and a plane.

As Murray (1997) states, one of the main pleasures of digital artifacts is,

precisely, transformation. By applying a rule of behavior (i.e. to manipulate the

toy in certain way), the player discovers that the robot can become a plane. In

other words, the player discovers the possibilities of the system through

manipulation. As Aarseth (1997) explains, this manipulation is not trivial, such as

the flip of pages in a book, but requires that the player get engaged into a

process of decision-making that will affect his experience of the system. This

process of manipulation and transformation is what renders possible the

interpretation of the multiple facets of a simulation.

With the example of the Transformer, I have showed that simulations allow two

different kinds of interpretation. One is the traditional kind, as described by

semiotics. The second is the one that the observer makes of the representamen

as a system, represented by the *interpretamen*, and it is based on the personal experience that she had with it.

In my expanded version of Peirce's sign, the *representamen* is not static but works rather as a machine that produces different signs (*interpretamens)* for different users. This is exactly what Aarseth meant by cybertexts as machines, but in an expanded version that can be applied not only to texts but also to any simulation.

3. Simiotics 1.0

Before moving on, I would like to describe in this chapter how my expanded Peircean concept of sign not only can be applied to simulations, but to any kind of signs. What I have done is to separate Peirce's category of representamen in two different ones: representamen and interpretamen. Traditional semiotics does not differentiate these two categories because, in general, signs have only one state: remain unmodified for different observers. However, this does not apply to some particular examples, as cybertexts, toys or works of art that Umberto Eco (1989) described as "works in movement". In The Open Work, Eco defines the "work in movement" - here "movement" must be understood in the same way as Murray's concept of "transformation" in computer software- where he includes, among others, Calder's mobiles. The concept of "works in movement" is clearly defined by David Robey when he states

39

what such works have in common is the artist's decision to leave the arrangement of some of their constituents either to the public or to chance, thus giving them not a single definitive order but a multiplicity of possible orders. (in Eco, 1989)

Calder's mobiles can be pretty immobile if there is a lack of wind. Therefore, the perception of the mobile itself, as a representamen, will vary depending on the amount of wind of a particular moment (or in the ability of the observer to produce wind or push the structure to make it move). Again, an observer who sees the mobile without wind would consider it simply as a statue, without learning its ability to move. The interpretamen in this case will be different to the one of an observer that can see it moving, even if their interpretation (interpretant) is similar or different.

This effect can also be found in more traditional works of art. The interpretamen of an observer that just sees a statue from a single angle is different from the one of somebody that can turn around it. The second can perceive details that the first could not, such as the signature of the sculptor that could affect his interpretation of the work. The same happens in the process of skipping words, paragraphs or even pages of a book, as described by Barthes (1973) in Le plaisir du texte. While the book itself will remain the same as a physical object, two readers will have a different exposure to the text if one of them systematically skips certain chunks. This is different to say that the two readers will interpret the text in a different way. What happens is that the idea (interpretamen) that they have of the text is different. This becomes evident in

works such a hypertext or Cortazar's Hopscotch (1994). If somebody reads the novel starting on the first page in a lineal way, the idea that she will have of the text would be significantly different that the one of somebody who followed a random pattern. Thus, both share the same *representamen* (the book), but different *interpretamens* (the text as crafted by their different readings). The interpretant (their personal interpretation) could be the same or different - but it is likely that the more their *interpretamen* differs, the more different will be their *interpretant.*

In a more subtle way, it is possible to apply the concept to painting. The cathedral in the French city of Rouen[14] is famous for having been painted by Monet at different times of the day and the year, each one of them being different in color and shades. If somebody sees the cathedral in a single photography, her interpretamen will be different -and narrower- than Monet's, who was able to perceive the same object under various lightning conditions. The cathedral (representamen) is still the same, what changes is the way light reflects on it and its perception by different observers.

In some cases, such as words or other graphic signs, the difference between interpretamen and representamen is very subtle or almost non-existent. In general, the concept might be useful to analyze certain particular cases, like

---

[14] Visit http://www.ibiblio.org/wm/paint/auth/monet/rouen/ to view some of these paintings.

the ones that we have previously described. By incorporating the interpretamen we were able to integrate simulation with "traditional" semiotic representations. Simulations are not essentially different from other representational objects, since, as we have seen, most signs can produce different "readings" of their representamen. Still, some simulation *representamens* are far more complex than a painting and, even if there are related by the continuum between their *interpretamens*, it is advisable to classify them as different genres of signs.

My goal in this section was to understand how interpretation works in simulations, in order to later analyze videogames. I have suggested an expanded version of Peirce's sign by incorporating the *interpretamen*, defined as HCI's mental model of the sign. As we will see later, the incorporation of this fourth category will allow me to better understand how some of Augusto Boal's theatrical techniques work. While I do believe that this expanded explanation of signs could bring more light on the understanding of how simulations work as representations, I do not think that a semiotic analysis would be enough to fully explain simulations and videogames. When he analyzed previous attempts to explain computer software through semiotics, Aarseth (1997) affirmed that this approach "is not beneficial as a *privileged* method of investigation". While I agree in general with Aarseth's claim, I do think that an expanded semiotics that takes into account simulations would be helpful to understand the basis of how videogames work as a representational medium. Other non-semiotic tools that

focus on the internal rules of simulations, like the concepts of *ludus* and *paidea*

that I have proposed, are also needed to understand how videogames behave.

CHAPTER V

SIMULATIONS AND IDEOLOGY

The interpretation of a simulation is a complex process that involves two levels. From an author's point of view, this complexity represents an even greater degree of uncertainty in the communication. It seems that there could be a much higher probability of "noise" between what the author tries to convey and what the observer may interpret. It is not anymore just the matter of what is interpreted from the model, but in which degree the observer is familiar with the system that models the source one.

Eco has presented the concept of a "model reader" (1979) that the author has in mind when creating her work. The "model reader" is an ideal reader that is "supposedly able to deal interpretatively with the expressions in the same way as the author deals generatively with them." In a similar way, we could suggest that simulations need a "model player" who is supposed to deal with the model and retain from it similar laws and characteristics to the ones that the author intended when she designed it[15]. Several techniques are available in order to diminish the distance between interpretamen and representamen in videogames. One of them

---

[15] This would be equivalent to the ideal user conceived by HCI.

is the book of rules that explains the basic rules of behavior of the system, as intended by the author. Another, similar one but implicit rather than explicit, is to include a "demo session" which shows an iteration of how the game could be played. Obviously, these demos do not show very bad players nor they try to confuse the player. In addition to these techniques, some games include training levels that precede the actual game, where the player is guided through the system and can safely experiment with it, under authored supervision.

However, it is possible that this "noise", understood as misinterpretation, could be conceived by the author not as a problem but rather as a goal on itself. Again, it is important to keep in mind that this "noise" is in the reading of the work, not in its interpretation. This is what happens in Michael Joyce's hypertext Afternoon, a story. The text implies a game structure: the reader wants to discover what really happened to the protagonist family, because they may have died in a car accident. However, the text sabotages the reading by promising a resolution but never offering it. Afternoon, a story is a very unusual kind of *ludus*: it has a rule of *ludus*, but the system does not allow the player –reader- to achieve it. It is a riddle with no solution, a game designed to deceive its players. What makes Afternoon, a story very original in videogame terms is that no game that we know has ever tried to convey confusion not through its contents but through its playing. Of course it would be possible to create a videogame based on the same structure – think of it as Sisyphus' game- but it would probably

generate rejection from the players, who are used to consume products that do have an ending and can be solved.

The author of simulations has also a different responsibility than, say, the novelist. The writer describes just a finite sequence of actions; we usually witness how her character's behaved, not how it may have. The novelist has to write specific actions, the simulation author has to write rules of behavior that will result on specific actions. If a writer usually represents women as housewives, we can infer her beliefs about women. But if a simulation author simulates women as housewives, she is not only representing but explicitly creating a rule that connects women with a certain behavior. The rule may be absolute (100% of simulated women are housewives in this virtual environment), concrete (between 50 and 70%), random, or dynamic (the number of housewives will vary depending on other elements, for example depending on the availability of education or the average number of toothbrushes used by the virtual people in the system). While the 18th century writer's ideas on women might have been transmitted through the use of adjectives and the portrayal of certain events, the simulator author is required to be much more explicit since she has to create a rule that defines how women are portrayed.[16] Authors in traditional media are just accountable for one or more instances of possible actions. Simulator authors are

[16]It is true that that some behaviors do "emerge" without being hard coded by the programmer. However, current simulation techniques are not as subtle when simulating human behavior. Maybe in the future simulated systems may become so complex that their level of authorship as I understand it may decrease. But it is not likely that this will happen in the near future.

not only creators, but also legislators, because they decide which rules will apply to their systems.

Ideology in a simulation is not just conveyed through how characters are represented. Even subtle choices in deterministic or indeterminist models speak about the author's option and vision of both the real and simulated world. Are some scenes hard-coded into the system and therefore are as inexorable to the player as destiny? Or maybe they are just a consequence of the player's actions? What is the role of chance in the simulated world? Has the player real means of cooperation with other characters or the game is designed to foster individualism? These are some of the issues that the designer has to deal with while crafting simulated worlds.

Ludus incorporate an extra ideological level. The *ludus* creator not only has to design the rules that make the simulation work (*paidea* rules), but also defines what is the ultimate goal of the game (*ludus* rules). The creation of a final goal creates a new value for every action performed by the player. Now everything that the player does or does not will be measured in relationship to how close or far it placed her from the final goal. Creating a *ludus* creates a moral set of rules, defining what is right and wrong. For example, Mario Brothers' rule of *ludus* is to rescue the princess. Therefore, any action that does not help Mario on this task becomes wrong or, at least, not advisable. Mario cannot take a

rest or spend extra time on his quest. Instead, he has to walk or run in one direction, beat the monsters and rescue the princess. There is an essential difference between creating a simulated environment where it is just possible to murder people, and another were you get a reward (score, extra levels) for doing it.

There is another important consequences of *ludi* structure: its binary logic. In general, *ludi* imply that you either win or lose; there is no middle term. Even if you score in the seventh position out of three hundred, the cultural value behind *ludus* tells you that this is nothing but a not so terrible way of losing. This binary logic is usually translated to the actions of the player. If killing the gatekeeper will allow the player to enter the castle and therefore to win, then killing is right and not killing the gatekeeper is wrong, at least by the game standards. Therefore, the simulation author –and the videogame, game or toy designer- is ideologically responsible for the creation of three levels of representation.

Level 1 - It is shared with traditional storytellers, and is related to scripted actions, descriptions and settings.

Level 2 - It has to do with the rules of *paidea*, the rules that model the simulated system. An example is the rule in <u>Quake</u> that states that the monsters fire at you, or the one that states that you can fire at the monsters but you do not have the ability to talk to them.

Level 3 - The third level is the *ludus* rule. It states what is the goal of the *ludus* and defines a winning, and therefore a desirable, condition.

I will now use these categories in order to do a brief analysis of Will Wright's The Sims (Figure 6). The Sims allows players to simulate the American dream. As it is stated in the game's box "Open-ended gameplay gives you the freedom to set your own goals and chart your Sim's destiny […]. Whether they prosper or perish is completely up to you". An immigration officer at Ellis Island could not give you a better description of the ideology behind capitalistic America... The simulation takes for granted that all the characters start from an equal state, without leaving room for physical, economical or social disadvantages.

Figure 6 – A screenshot from The Sims

The Sims is an interesting case of a videogame because it is not a *ludus* (therefore it has no "Level 3" rules). You do not win or lose on this simulation, you are instead encouraged to experiment and observe how the characters – who are called Sims- evolve. The lack of a goal – understood as "winning or losing"- may lead an uncritical player to believe that the game is ideologically "safe" –as if such a thing existed- because, after all, it is not giving you a bonus for killing human beings or chasing girls in underwear, as it happens in the infamous Panty Raider. Therefore, it seems that "level 3" is nonexistent in this game. However, even if there is no winning ending on this game, there are certain sections of the simulation that cannot be unlocked unless certain actions are performed. In this case, the representation of consumerist suburban American life is maybe too literal: a rule states that the more goods a player has in her house, the more friends she would have. And in order to access these goods, it is necessary to have money, which leads to encourage attending to work. A player that did not play in this direction would not "lose". However, she would lose part of the attraction of the environment that is testing and playing around with "new stuff".

About "Level 1", I can say that the game, which is particularly original because it simulates human life, sets the action in a very particular environment: the American suburban neighborhood. The designer chose this place instead of all the other possibilities that include, for example, the Canadian or French suburban neighborhood, the Brazilian *favela* or the Chinese mountain town. At

this level, the ideological choices are identical to the one of a narration in a traditional medium, such as in a film or novel. All the "cosmetic" characteristics of the game also pertain to this level. For example, the system allows the player to select gender, age and skin color. However, the skin color does not affect the development of the game: it is simply a matter of political correctness. A similar kind of diversity is offered through the available ornaments for house decoration: a couple of zebra-patterned ethnic objects can be used to help the darker-pixeled Sims to feel at home.

The main differences arise at the "Level 2". The characters in The Sims are defined through five main characteristics (Neat, Outgoing, Active, Playful, Nice) that can evolve through the game. Not ten thousands nor three: the Sims are have five. In the recent "Entertainment in the Interactive Age" conference at University of Southern California in January 2001, Janet Murray criticized this choice from designer Will Wright, because – I paraphrase – she "believed that human beings could be more complex than that". The criticism was not aimed at a particular representation but at the model itself: she considered that the model was too simple and did not produce a behavior that is comparable to the human referent. Wright's answer was that he first tried to build a more complex model of human behavior, but he discovers that it was too complicated.

However, The Sims' biggest ideological message is extra-simuletic – if I may use the neologism to refer to what is situated outside the simulation itself. What makes The Sims a vanguard work is not how it simulates human life, but the fact that by attempting to simulate it is affirming that human life can be simulated, that we can be modeled as a less complex system. This is a major breakthrough in videogames, which previously attempted only to simulate simpler organisms, such as Dogz, Catz, Tamagotchi and Babyz. The characters in The Sims are not mutants in a distant galaxy, but doctors, clerks and housewives, characters that refer to real people that we are very familiar with and know what to expect from. It is clear that we cannot even dream about dealing with social, political and philosophical issues in videogames just based on monsters and trolls: believable human characters are an absolute requisite. This is why The Sims should be welcomed as an advance in game design, in spite of its questionable depiction of consumerist life.

In order to close this short review on videogames and ideology, I would like to explain how videogames embody one of the main myths of the digital media: the myth of a democratic medium where consumers can become producers. This myth got particularly stronger with the Internet and its cheap, fast and easy way for everybody with a computer to publish texts, sounds, animations, videos, photographs, games, etc. It also became a popular idea among hypertext theorists, particularly George Landow (1992) and his concept of

the reader-author. I am not going to discuss that the computer could allow highly participative experiences, but to claim that it allows users to become authors is, in general, far-fetched. The reader does not become the author of Cortazar's Hopscotch just because she decides which textual path to follow. Yes, she is in part responsible for how she will experience the novel, but all the possible combinations were already "authored" by Cortázar. Still, some hypertexts do allow user to annotate extensively, therefore becoming co-authors of the textual system. But this is done through active writing, not by merely browsing.

Videogames also allow, or give the illusion of allowing, players to become designers. Most first person shooters allow players to create "mods", modified versions of the original games where it is possible to create a new environment with different objects and characters. Some games even allow accessing the programming code, so players can expand the characteristics of the original engine in order to create their own, expanded versions. Some "mods" created by independent players have been bought by the original producer company and became "official" expansions. However, "mods" are hard to create and most require a high degree of proficiency in programming and/or design. While there are no official statistics, the fact that only hundreds of *mods* are available for games that sold millions of copies made me think that only a very small fraction of players are "mod" designers. In other words, "mods" are just an option but not

a standard way of using the software. The videogame player could become a designer, by in fact, this activity is marginal in current videogames.

Now that I have defined a set of concepts and formal tools to help us understand the mechanics of videogames and, particularly, how players interpret them, it is time to start working on the techniques for creating videogames that would serve as a medium for fostering the player's critique on her personal and social reality. Later, I will explore how both Brechtian and Boalian techniques will prove to be helpful in attaining my design goals.

CHAPTER VI

THE THEATER OF THE OPPRESSED

In order to think on how to transform videogames into a tool for criticism, it is necessary to first review previous attempts to transform the computer into a tool for questioning, discussion and understanding. The most obvious reference on this field is the educational work performed by the constructivist school, lead by Seymour Papert, which was the first to use computers for educational purposes.

1.1 Constructivism

The basic idea behind constructivism is Jean Piaget's concept that education is not, as education theorists used to think, transmitted from educators to students, but rather constructed by the student. Papert, a mathematician who studied with Piaget, proposed in 1980 an extremely radical idea: computers could be used for educational purposes, particularly with children. This was by the time Apple introduced the Apple II personal computer, and long before the Apple Macintosh made the computer another popular appliance in American households. Papert proposed to use the computer to create what he called

microworlds (Papert, 1980) constrained simulated environments where children would be able to learn by experimenting with its inner rules and by constructing projects that were relevant for the student, such as drawings, poetry and even simple games. By getting involved in this process, the student would develop a critical attitude towards both the analyzed subject and the medium itself. Papert's most famous *microworld* is the LOGO programming language, which became extremely popular in schools.

Some work has been done about constructivism and videogames, notably Yasmin Kafai's <u>Minds in Play: Computer Game Design as a Context for Children's Learning</u> (1995), where she explains her work with a group of children that designed, programmed and discussed videogames in a constructivist setting.

It would seem that constructivism could be a perfect theoretical framework for my goal of designing videogames for critical awareness. However, the main problem is that my particular interest is in creating environments where players could question and discuss both their personal and social realities. Constructivism was not created with these goals in mind. Instead, it mainly focuses on science education and particularly on mathematics. Papert acknowledges this limitation of constructivism after comparing it with Brazilian samba schools. He previously chose these popular dancing schools as an example of an ideal constructivist environment, where people from all ages

gather to both dance and learn to dance through dancing. However, he admits

that

> Despite these similarities, LOGO environments are not samba schools […]
> Ultimately the difference has to do with how the two entities are related to
> the surrounding culture. The samba school has a rich connection with a
> popular culture. The LOGO environments are artificially maintained oases
> where people encounter knowledge (mathematical and mathetic) that has
> been separated from the mainstream of the surrounding culture […]
> (Papert, 1980)

The ideal situation would be to be able to find a theoretical framework that would

allow us to create constructivist environments that dealt with social and personal

issues rather than with mathematical constructions. And, just as the samba

schools described by Papert, my main intention is to build this around an element

from popular culture that already exists: videogames. Psychologist and

sociologist Sherry Turkle envisioned this possibility when she analyzed a

particular kind of *microworlds*: videogames (and particularly simulations, like Sim

City). In Life on the screen (1995), she studied how people get involved with

simulation games as models of complex systems. She identified two main

attitudes towards simulations. One is what she calls "simulation denial" which she

describes as what affects people who reject simulations as representational tools

because they offer a simplified view of the source system. By "simulation

resignation" she identifies the behavior of those who identify simulation

limitations –notably ideological bias, such as the ones that I previously described

on The Sims- but accept them because the system does not allow to modify

them. However, Turkle imagines another possible kind of relationship:

But one can imagine a third response. This would take the cultural pervasiveness of simulation as a challenge to develop a more sophisticated social criticism. This new criticism would not lump all simulations together, but would discriminate among them. It would take as its goal the development of simulations that actually help players challenge the model's built-in assumptions. This new criticism would try to use simulation as a means of consciousness-raising. (Turkle, 1995)

What Turkle is suggesting seems to be a deconstructive approach towards constructivism. Instead of encouraging the participants to build a model, Turkle envisions a simulation that would foster its own dissection by letting players to constantly challenge its own rules. Interestingly, this is a literal description of some of particular the techniques that drama theorist Augusto Boal has been performing for many decades now.

1.2. Pedagogy of the Oppressed and Constructivism

It is important to mention that Augusto Boal's work heavily relies on fellow Brazilian Paulo Freire's Pedagogy of the Oppressed[17](2000), an educational theory developed from a Third World perspective, originated through Freire's involvement in adult literacy programs. Like Papert, Freire also draws on Piaget's idea that knowledge is not transmitted but constructed. Freire's pedagogy is based on the dialogue between educator and student, and on the student's recognition that, even if he is illiterate, he already holds the key to knowledge. In other words, the education is not done through an imposed

---

[17] Boal's own "Theater of The Oppressed" literally borrows its name from Freire's work.

program but rather constructed based on the student's particular personal and social reality. This is closely related to Piaget's technique of learning through projects that are really relevant to the students. Actually, as Papert admitted in a forum about the future of school[18], he was influenced by Freire while developing constructivism. However, unlike Piaget, Freire did not impose technology as a medium for education, but rather proposed to build alternative strategies depending on the resources that were available. What is particularly interesting to me about Freire's pedagogy is the fact that it focused on personal and social issues rather than on science. As a Marxist, Freire considered education as a natural way for social change. While Papert's pedagogy does involve collaboration among students, Freire's is essentially social: he does not conceive education without the student going through a process of self-awareness (*conscientisaçao*) in both a personal and social level. Both authors seek a revolutionary change. Papert's revolution is essentially an "intellectual one", as described by Henry Jenkins (1998), while Freire's is a political and economical one. It is not an accident that Freire worked in one of the poorest regions of the continent – the Brazilian *nordeste*- and Papert in Massachusetts[19]. Freire's pedagogy is better suited to deal with social and personal issues because the students that he dealt with did not have reached the minimum acceptable conditions for a decent living. Unlike Papert, who mainly criticizes the society's view on education, Freire questions society first. This is why I believe that the

---

[18] Transcript and videos available at http://www.papert.com/articles/freire/freirePart1.html
[19] Although he did supervise educational projects in Latin America, particularly in Costa Rica.

Pedagogy of the Oppressed –and its offspring, the Theater of the Oppressed- will offer me a more robust set of tools for my videogame design purposes, even if they do not use the computer as its main medium.

2. The Theater of the Oppressed

Augusto Boal's Theater of the Oppressed has evolved through the last decades of the twentieth century, building up a very large repertoire of techniques. Among some of the most popular ones are Forum Theater, Invisible Theater and The Rainbow of Desire. As I previously said, it is impossible to understand Boal without referencing to Freire's work and the particular political and economical situation of Latin America during the sixties and seventies. German playwright and theorist Bertolt Brecht is the other essential reference that is needed to comprehend The Theater of the Oppressed.

Bertolt Brecht was born in 1898 and lived and worked in Germany until the raise of Nazism. While he is usually described as a Marxist dramatist, most of his plays could be better described as promoters of social change rather than being specifically Marxist. He was convinced that the traditional approach to drama, based on the rules that Aristotle stated more than twenty centuries ago in his Poetics, prevented the public from both becoming aware of their social reality and from acting in order to change it. He believed that traditional drama

narcotized the masses by immersing them on the representation, without giving them space to take a critical attitude towards what was happening on the stage[20]. In order to break with this tradition, Brecht proposed several techniques, known as alienation effects or A-effects, for disrupting the representation and make the audience question what they were taking for granted about what was happening on the stage. In Brecht's own words, "When something seems 'the most obvious thing in the world' it means that any attempt to understand the world has been given up" (Willet, 1999). He wanted the audience to make the effort of questioning and to play an active role by thinking about how the play related to their personal and social reality, instead of just being passive spectators.

Augusto Boal took Brecht's ideas much further and created a new form of theater that literally blurred the "fourth wall", by allowing the audience to become actively involved on the play. His theater is based on the concept of mixing performers and audience by creating the new category of the *spect-actor*. The Theater of the Oppressed (TO) usually gathers both professional and amateur actors.

TO has evolved through Boal's personal experiences. As he narrates in The Rainbow of the Desire (1999), his first plays were idealistic, leftist works that explained the necessity of a social revolution to workers and peasants. However,

---

[20] If we compared it through computer terminology, Brecht would have been opposed to enhancing *immersion*.

61

one day, after calling people into arms on his performance, a peasant took the message literally and suggested Boal and his troupe to join him in getting weapons and killing the landlord. Boal had a hard time explaining that they were simple actors and not fighters. At that moment, he realized that he was using his theater to ask others to do what he was not willing to do himself. Since then, Boal's theater main "message" was not to transmit a pamphlet but rather create an environment for *spect-actors* to discuss their own beliefs and ideas.

One of the most popular TO techniques is the Forum Theater, where a short play that represents an oppressive situation is enacted and then *spect-actors* take turns and replace the protagonist in order to show how they think that the oppression could be broken.

While TO dealt with social forms of oppression, when Boal was forced into his European exile, he discovered that his techniques were harder to adapt to the more *bourgeois* problems of people from rich countries. This lead to the creation of the Rainbow of Desire, a set of techniques specifically designed to deal with more personal and psychological problems. Nevertheless, TO remains a highly social theater that is based on group work and critical discussion.

After his exile, Boal was elected member of Rio de Janeiro's city council and he adapted his theater to his new role of politician. In his <u>Legislative Theater</u>

(1998), he takes the concept of theater as a medium for social change to its extreme, by incorporating it on the creation and discussion of civic policies. While Boal's theater has been described as postmodernist (Taussig and Schechner, 1999) because he does not privilege any particular message but rather the discussion of different and opposite points of view, Boal is clearly a humanist, in the best modern tradition. While it may be true that his techniques allow alternative and disparate messages, his ultimate goal is to promote social and personal change through critical thinking and discussion. His techniques respond to a clear ideological belief on the human capacity for changing reality and transcend its limitations.

TO is usually associated with therapeutic techniques such as psychodrama. Actually, since he left Latin America in the seventies, Boal became more involved with therapeutic applications of his techniques, as he shows in The Rainbow of Desire: the Boal method of theater and therapy. Therefore, it seems that it would be necessary to explain my position towards this subject. I view TO as a set of tools for simulation of personal and social problems. My approach is strictly on a communicational and expressive level. This is why I will use them in a videogame mainly a tool for understanding reality. If the end product happens to cure somebody's psychological troubles, that would be wonderful, but it would not be my main goal. I am no psychologist and I am not interested in becoming one.

After this very short and condensed overview on Freire, Brecht and Boal, I will now give a more detailed explanation of the mechanics of some of TO's techniques, particularly Forum Theater.

2.1 Forum Theater

Forum Theater (FT) evolved from an early Boalian technique known as *simultaneous dramaturgy*, where spectators suggested different actions to be performed by actors in order to solve a particular problem that was being staged. In this technique, spectators remained off the stage, and participated through voicing their opinions to the actors. Once, a woman, who was very upset by the situation described by the play, was not satisfied by the proposed solutions and asked permission to walk into the stage and perform herself the solution as she envisioned it. This anecdote set up the basis for FT's mechanics.

Forums are created around a short play (5 to 10 minutes long), usually scripted on-site based on the suggestions of the participants. This original play is what Boal calls the *anti-model*, because it shows an oppressive situation that needs to be solved. The scene always shows an oppressive situation, where the protagonist has to deal with powerful characters that do not let her to achieve her goals. For example, it could be about a housewife whose husband forbids her to

go out with her friends. The scene is enacted without showing a solution to the problem. After one representation, anybody in the public can interrupt the play by shouting "Stop!" and take over the place of the protagonist and suggest, through her acting, the solution that, in her opinion, would break the oppression. Since the problems are complex, the solutions are generally incomplete. This is why the process is repeated several times, always offering a new perspective on the subject.

In Boal's own words, "it is more important to achieve a good debate than a good solution" (Boal, 1992). It is important to stress that Boal uses theater as a tool, not as a goal *per se.* The ultimate objective of FT is not to produce beautiful or enjoyable performances, but rather to foster critical discussions among the participants. Unlike traditional theater which just offers one complete, closed sequence of actions, FT sessions show multiple perspectives on a particular problem. It does not show "what happened" but rather "what could happen": it is a theater that stresses on the possibility of change.

What follows is a list of some of the main FT characteristics.

1. Participants must be part of a homogenous group. One of the main conditions that Boal sets for FT is that the participants must belong to a homogenous group. For example, they could be coworkers, people of the same neighborhood, members of the same club, etc. This requirement is coherent with Freire's pedagogy: the members should see themselves as a group, because their

problems are essentially social and they must both become aware of this as a

group and act accordingly as it, too. However, after Boal moved to Europe, he

experimented with what he calls FT "shows", which work like traditional theater:

the *spect-actors* are an heterogeneous group that buy their tickets in order to

participate in a FT that is staged in a traditional theater. Through FT "shows" Boal

questioned his own technique by creating forums with heterogeneous groups

that, unlike what happened in Latin America, were not concerned about solving

some immediate problems.

2. The need for a moderator: The "Joker" is the moderator of a FT session. She

is the one who explains the rules to the participants and is always available to

solve any problem that may arise during the performance. She is also the one

who moderates the discussions that follow the performances. In addition to this,

she must make sure to forbid the use of "magic". By "magic", Boal means any

solution to the main problem that lacks verisimilitude. For example, if the FT is

about a person who is jobless, *spect-actors* can not propose to solve the

situation by making him winning the lottery.

3. Oppression, not aggression: It is important that the situation that is analyzed

through FT is one that can be changed. Boal requires that the scene depicts

oppression and not aggression. For example, he recalls that once a group

wanted to do a FT about a girl who was raped in the subway by four men.

According to Boal this scene is pure aggression and has not potential for FT

because in there was very little that the girl could do to reverse the situation.

3. Forum Theater as Simulation

If we analyzed it as a game, FT is a clear case of *paidea*. It has *paidea*

rules but not ludus rules. There is no final goal: FT does not look to reach a

solution at the end of the session, but rather focuses on its development. If FT

were a *ludus*, the winner would be whoever found the most accepted solution to

the problem described in the anti-model. However, the social problems that FT

deals have not, unlike videogame puzzles, binary solutions. They are rather

complex problems where many factors and agents interact. Still, sometimes it is

possible that the participants may accept a proposed solution as appropriate.

Literally, what happens in a FT session is a simulation. It is not the

representation of something, but the simulation of how some situation would

happen, depending on many factors. It analyses the world "as *it is* and as *it could*

be" (Boal, 1992). Boal's view of the world, just like Brecht's, is based on the

possibility of change, the belief that oppressive situations can change for good

and that persons can be agents of personal and social change.

Just like scientists that simulate a system to understand or predict is behavior, Boal stages social problems that are presented through an event that affects a particular set of individuals. However, he is more interested in the process itself than on its outcome. Interestingly, this is the opposite of what happens to the authors of computer-generated stories, who want each session to be interesting and problem-free. Although, as Jay Bolter (1991, quoted by Aarseth, 1997) notices, the most memorable examples of computer-generated stories are the ones that show their mechanisms through failures, generally producing comic or surreal narrations. In both cases, the failures let the observers to take a peek into the mechanisms of the simulation. The main difference resides on the fact that while on the computer-generated stories the failure shows a programming or conceptual error, in FT it would serve as a "debugging" tool for social and individual behavior.

Let's now take a look at how the interpretation process works on FT, using the expanded semiotic model that I previously suggested for the study of simulations. It will be easier if we used an actual example described by Boal.

This particular FT was developed in Paris, with bank workers who were on strike. It shows the situation of a woman who is a union leader at work, but a slave housewife at home (Boal, 1992). The story develops as follows. The woman is first shown at her work, were everybody pays attention to her suggestions.

Suddenly, her husband, who is outside the bank, starts hooting his car's horn.

The woman abandons the workplace and goes home, where she takes care of all

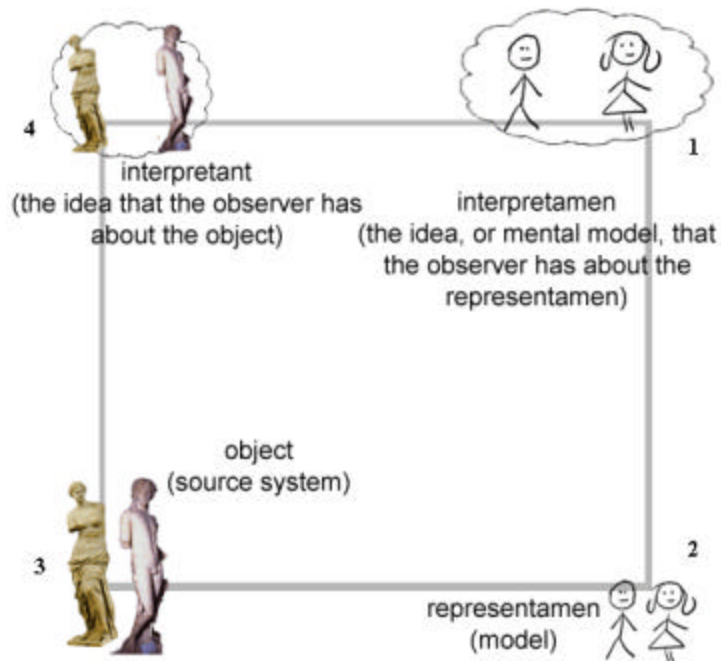the house chores, without being helped by her husband.

Figure 7 – Forum Theater about the relationship between husband and wife

In Figure 7, we have the simulation's model – which is called the anti-model in

Boalian terms- in position 2. It holds the rules that explain the life of the

characters as showed on the first representation of the Forum. In position 1, we

have the idea that a particular observer has of the model, which contain the rules

that he inferred from what he saw. This idea may contain some of the codes that

rule the wife-husband relationship as showed in the model. In position 3, we have

the object, which is the source system: the ideal wife-husband relationship, which is an abstraction. In position number 4, we can see the particular idea that the observer has of how wife-husband relationships are and/or how they should be.

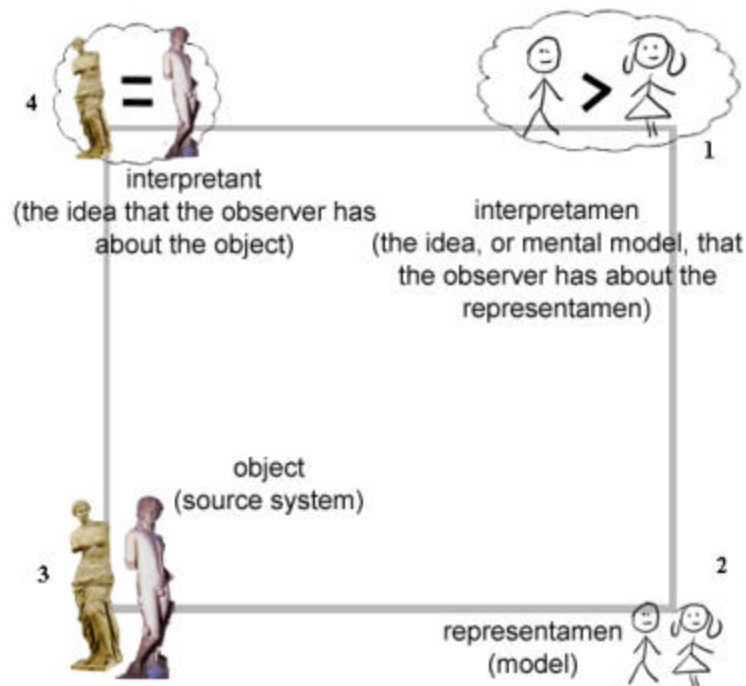Figure 8 – The observer infers from the model that the husband has more power than the wife.

I will analyze one possible interpretation within one particular enactment of the anti-model. In position 2 we have the representamen, or the model of the simulation, which is a particular enactment of play, that sets its codes of rules. For example, if in that enactment the husband oppresses the wife, the main rules

of the model would be -as interpreted by an observer in his mental model

(interpretamen)-: the husband has more power than the wife.

Let's pretend that a FT produces two different sessions (x1 and x2). In case x1, the *spect-actors* tried to talk to the husband, but he would not pay attention. In a second attempt (x2), the *spect-actors* suggested to make the wife to leave the house and break up the relationship. This did not work because the wife found herself alone and without a place to stay. In both cases, the main rule of the model remained the same: the husband is more powerful than the wife. Both cases are iterations of the same model: at the end, the power balance does not change.
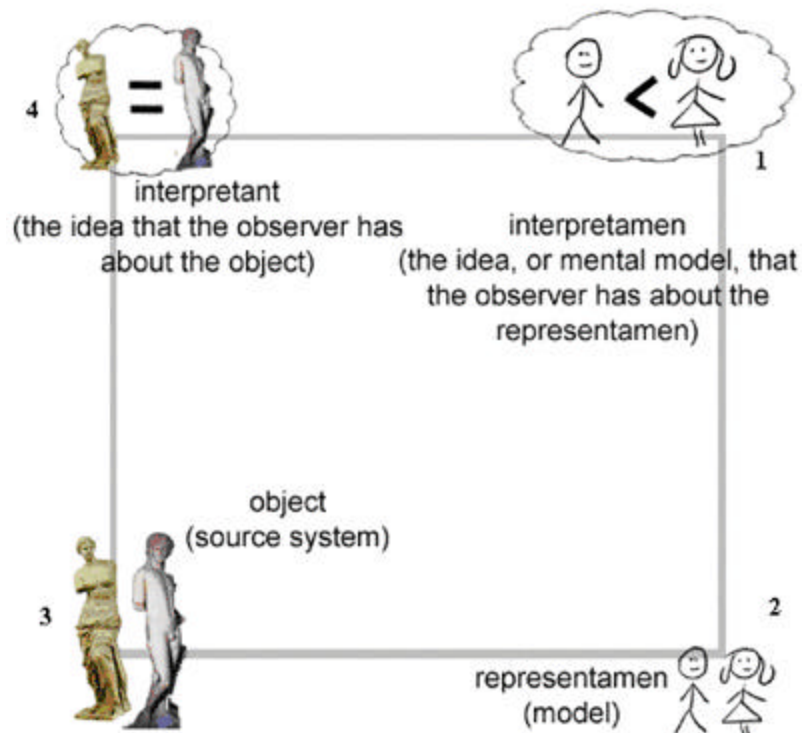
Figure 9 – The observer infers from the model that the husband has less power than the wife.

Now imagine a case x3 (Figure 9) where an *spect-actor* takes the wife's role and blackmails the husband. In this case, the power balance gets inversed: the wife oppresses the husband. Now the *interpretamen* of an observer would show the woman as the most powerful one. The wife's situation would improve, but the oppression would remain. What we have witnessed in cases x1 and x2 is two different outcomes of a same model. The rules of the model remained the same, what changed was the outcome of the simulation. However, case x3 presents a different model, with different rules: the wife is now able to control the

situation. Unlike what traditionally happens in computer simulation, the model in FT is dynamic. It can produce different iterations with slight changes, or it may produce big changes by modifying its inner rules. My point is that while in x1 and x2 there were two different outcomes of the same simulation, case x3 shows a different simulation, with a different model. This means that what FT not only allow to explore different outcomes of a same model, but also to create alternative models. In other words, FT behaves like a meta-simulation: an environment where *spect-actors* can create and question the rules of a simulation by creating a new one based on a different model. If Boal had worked with videogames instead of theater, the basis of FT could be explained as a <u>Sim (Sim City)</u>: a simulator for creating simulations. It would be a simulator that not only would allow players to experiment with the possible outcomes of a particular model, but also to modify that model (and explore the possible outcomes of this new model, and so on).

<u>4. The Poetics of Change</u>

Boal's idea of change is different from Freire's. While Freire's goal was clearly to reach change by overthrowing the current social structures, Boal insists that he encourages more the process of criticism rather than the actual proposed ways of change. Still, Freire also prioritizes the educational process, but always as a means for reaching the social change. Personally, I believe that both approaches might not be as different as it seems. If Boal does not explicitly

stress on the consequences of his techniques on encouraging real modification

of society, it may simply be because that the global political situation of the late

20th century is different from Freire's sixties and seventies. Brecht himself did not

believe that his epic theater would not help to social change if certain political

and social requirements where not met.

Boal's TO might be an attempt to give an answer to the failure of group projects

such as the sixties social and political movements and the fall of real socialism.

TO works on the personal level, but integrating the person to small groups, with

the assumed hope that the fostering of criticism at the micro level may, in the

long run, affect society as a whole. However, it is also true that some of Boal's

techniques, such as the Rainbow of Desire, seem to focus on personal change

as an end on itself. But even on these therapy techniques, the social element is

always present. Boal deals with personal problems but always within a group of

participants. Therefore, the social dimension of the personal problem is always

present.

I think that it is necessary to state my personal view on this subject, since it will

clearly influence the production of my Boalian videogames. While I agree with

Boal that the process of critical discussion within a FT session is more important

than the proposed solutions, this does not mean that the solutions themselves

should be discarded. In other words, the process of looking for answer does not

only empowers the spect-actor (or player) by allowing him to take a critical

distance from the subject, but it also gives him a life experience that he might not

get somewhere else. These simulated experiences might help him to become

more street-wise on the explored social and personal problems.

I personally believe that by enhancing critical awareness among citizens, society

could actually change. There is no way that this process could be attained but

through the joint work of educators, politicians and artists. This evolutionary

process contrasts with Freire's revolutionary ideas simply because we are not

living anymore on the sixties. Nor TO nor my Videogames of the Oppressed may

change society by themselves. As Brecht believed, art can only contribute to

social change but it cannot be the main factor that drives change. Therefore, my

approach should not be viewed as an attempt to change society, but rather as an

attempt to contribute to foster the conditions that may help social change.

CHAPTER VII

THE VIDEOGAMES OF THE OPPRESSED

What follows are two different examples on how Boal's techniques could be applied on videogames in order to foster critical thinking among players. Basically, both are design documents that describe how these games could be created, along with descriptions and sample scenarios. It is important to stress that both systems are hypothetical: there is currently no working prototype of any of them. When I first started thinking about combining Boal's theater and videogames, my first intention was to start working on a prototype. However, I realized that, since theater and videogames are very different media, I would first need to make a detailed analysis of both Boal techniques and the particularities of videogames as a representational medium. This was the main reason that lead me to write this thesis. My next step will be to start working on a working prototype, in order to get funding to create at least one of these projects.

It is essential to stress the fact that while the intention of these projects is to foster critical thinking, their implementation will carry the bias of the designer of the system. This is also true for Boal's TO. The mechanics of the different

techniques carry an ideological message, even if their intention is to be open-ended. For example, the fact that the joker decides the level of verisimilitude of a proposed solution will clearly influence the outcome of a FT session depending on the particular joker's ideas and opinions. During his career, Boal has always considered TO as a work-in-progress and had a critical attitude towards its techniques, which he modified several times. While it would be cumbersome to have a FT that encourages the spect-actors not only to be critical towards the anti-model, but also towards FT rules themselves, it is important that they realize that TO techniques are not ideologically neutral. In the case of the "Videogames of the Oppressed", the previous remark is also true. Both its design decisions and the performance of moderators will influence the participants performance and lead them towards certain paths of action. The choice of videogames as a medium is carrying an ideological baggage that includes both videogames conventions and the personal and social perception of computer-based entertainment. Probably the best way to make this bias explicit would be to create different versions of the "Videogames of the Oppressed", developed by people of different age, culture and/or gender. Of course, this would go beyond my current goal of analyzing the basis for a first prototype.

My personal experience as a producer in both traditional media (television, advertising and press) and new media (internet publishing, multimedia and videogame design) made me aware that there is always a very significant

difference between design documents and finished projects. This is why the following ideas should not be taken as definitive. The reader must keep in mind the techniques of the "videogames of the oppressed" as a work in progress that are described here mainly as an example of what could be done on this medium.

1. The Sims of the Oppressed: Modifying the System

The technique that I will describe is based on The Sims and takes the "mod" concept to its extreme, allowing players to modify the game itself. It is based on FT and it would probably be situated closer to the FT "show", which is open to heterogeneous public rather than the traditional that works with homogenous groups of participants. The target audience for "The Sims of the Oppressed" is quite large. With this particular example I am trying to reach videogame players in general. I think that the modifications that I will suggest will not change its status of videogames. In other words, I do not expect people to say "this is the consciousness-raising simulation that also happens to be a game". Even if some of the programming skills required by "The Sims of the Oppressed" may be high, as we will later see, it is not imperative to be a programmer to participate.

If you play The Sims you are able to select or modify different "skins". "Skin" is a word that describes the graphical appearance of your character and it

allows you to dress them with different clothes, faces, and hair and skin colors.

Unlike what usually happens in reality the other characters will show no

difference in their behavior if you are wearing dirty or clean clothes or depending

on the color of your skin. The Sims represents the suburban idea of heaven:

every trace of class, gender or racial struggle was either erased from the original

design or transformed in a decoration with no actual influence on the game. Its

idea of diversity is merely cosmetic. As the author, Will Wright, explained,

decisions where taken to exclude certain cases of deviant behavior: "Basically,

we wanted to stay as morally or ethically neutral as possible. But there were

some things we didn't want to touch, like pedophilia" (Wright, 2000b) [21].

Since simulations are representations of the world, they cannot model it

without conveying the author's idea about how the world works. In his study

about Sim City 2000, Julian Bleeker (1995) analyses how the racial factor is

excluded from the simulated model. While riots are possible in Sim City 2000,

they are always triggered by causes such as heat or high unemployment. No

room here for the "Rodney King factor".

Personally, I have been playing Sim City for several years now and never

thought about how it dealt with racial issues. I did notice, though, that the FIFA

series of soccer videogames does not include Uruguay as a team, even if it is

---

[21] "The World according to Will". Salon, Feb 17, 2000.
http://www.salon.com/tech/feature/2000/02/17/wright/print.html

one of the countries that won more international titles in the twentieth century,

including the World Cup twice. Thankfully, this was easy to fix. A player used one

of the features of the game that allows you to create teams. He included the list

of current Uruguayan soccer players, along with their uniforms. Adding a team in

FIFA is really just writing down some names and adding some colors. However,

to expand Sim City in order to please Bleeker would be a much more complex

task. We should first say that Sim City does not allow you to modify its inner

rules. And, even if it had such a feature, it would require a good deal of

programming. Still, I think that the possibility is compelling since it would not be

just a makeover change, but rather a radical change that would modify the

simulation's ideological assumptions.

Since The Sims deals directly with humans, its ideological assumptions

can be even more evident. What I proposed to do in "The Sims of the

Oppressed" is a modified version of The Sims that would allow players to modify,

add and discuss the simulation's model chore rules, particularly the ones that

affect character behaviors. Think of it as FT with games instead of scenes.

1.1 The Dynamics of "The Sims of the Oppressed"

The basic gameplay would be similar to The Sims'. The main difference

would be that, in addition to downloading objects and skins, it would also be

possible to get user-designed characters with different personalities and particular sets of actions. These characters would be created with a special design tool. Players would be able to rate the different characters and even create their own versions of them, based on behavioral details that they think need improvement in order to have a higher degree of verisimilitude.

1.2 Sample Scenario

Agnes has been playing with The Sims for a while now. She knows the basic dynamics of the simulation and enjoys it. Nevertheless, she feels that it would be great if family relationships were more realistic. So, she goes to the "Character Exchange" website and browses through different characters. She finds one that looks interesting. It is called "Dave's Alcoholic Mother version 0.9" and it is described by its author as

"This mother spends a lot of time working and she is very tired when she gets back home. Still, every night she will have to fix dinner and do some cleaning. In order to escape from her terrible life, the mother drinks a lot of bourbon. She can get very annoyed by children and pets and may become violent".

Agnes considers to give it a try and downloads it into one of the houses that she has been previously playing with. The household is integrated by a couple, three children and a cat. After the download, the mother is replaced by "Dave's Alcoholic Mother version 0.9". The character is interesting. After playing with it for a while, she realized that when she reaches a certain degree of fatigue, she would start drinking. The more she drinks the less she will care about her family. She would remain calm unless her husband insists on cuddling or giving her a back rub.

While Agnes thinks that the character is pretty well depicted, there are details that she does not agree with. For example, the character's background is set as having low educational level. In addition to this, the character has a lousy job. And, to make things worse, the "Alcoholic Mother" will always get her drinks from the little bar in the living room. In Agnes' opinion, the alcoholic should not be described as having a poor education and a lousy job. Agnes also knows that in general alcoholics hide their bottles around the house and try not to drink in public. So, she goes back to the "Character Exchange" and looks for another alcoholic mother. She finds one that seems promising "Dorothy's Alcoholic Methodist Mother version 3.2". After trying it, she realizes that the behavior of this character is much more accurate to the idea that she has about it. She is really intrigued on why the designer insisted on the fact that the mother would be a Methodist, since that fact does not seem to affect her alcoholism. She checks back on the character designer's web page and she founds a short narrative that

explains that the character is actually based on a real person who happened to be a Methodist. Even if Agnes founds the story interesting, she thinks that the alcoholic part of the behavior is superb, but the Methodist part does not make any sense. So, she uses an editor to modify the character's code and removes the religious references. She also adds some small details, like the fact that the mother loves a certain brand of whisky. Then, she posts it online as "Agnes' Alcoholic Mother 1.0 – Based on Dorothy's Alcoholic Methodist Mother version 3.2", along with a short description of the main behavioral rules. A couple of weeks later, she finds out that her behavior has become quite popular. Actually, some players have posted some modified versions. Some of them have even e-mailed her with some remarks and criticisms. She downloads some of these new versions and finds a couple that she likes a lot.

Some weeks later, Agnes gets a little tired of playing with the alcoholic mother and wants to give her some more personality. So, she decides that it would be great if the mother became an ecologist. Agnes downloads a character described as "Peter's Radical Greenpeace activist version 9.1". She edits its code, copy it and paste it, along with some minor modifications, on her alcoholic mother. Now the mother takes more care of the plants and does not kick the cat anymore when she is drunk.

Programming simulated behaviors like the ones that were previously described on the scenario is not an easy task. Even if the design tool involved templates or some kind of visual object-oriented programming, it is likely that the average player would consider the task overwhelming. However, creating an environment where players do program simulations is not impossible, as Amy Bruckman's work (1997) on Moose Croosing suggests[22]. That being said, we can start to analyze the characteristics of this technique.

The mechanics of "The Sims of the oppressed" are inspired on FT's characteristic of allowing participants to create alternative simulation models. Nevertheless, it is much less ambitious on a participatory level because of the fact that it does not expect all the players to actively participate in the discussion and/or the design process. While it is possible that certain players, such as Agnes, could deal with the programming of new behaviors, it is likely that most players would be "lurkers"[23]. Would this fact be necessarily go against the participatory principles of TO? After all, it is not common that every *spect-actor* take the protagonist's role in FT. Even if somebody does not participate on stage, the fact of witnessing the changes and listening to the opinions that are

---

[22] Moose Crossing is an object-oriented MUD (originally, the term refers to Multi-User Dungeons. By extension, it is a text -based multi-user online environment.

[23] Originally, this term referred to the people who read online message boards but rarely or never post any message. By extension, it could be used to describe users that consume content without producing any.

exchanged involves every *spect-actor* and renders them anything but passive. As

Boal states it:

> In a Forum Theatre session no one can remain a 'spectator' in the
> negative sense of the word. It's impossible. In Forum Theatre, all the
> *spect-actors* know that they can stop the show whenever the want. They
> know that they can shout "Stop!" and voice their opinion in a democratic,
> theatrical, concrete way, on stage. Even if they stay on the sidelines, even
> if they watch from a distance, even if they choose to say nothing, that
> choice is already a form of participation. (Boal, 1992)

Still, "The Sims of the Oppressed" is not FT and it is not enough to simply shout

"Stop!" to participate on the behavioral design. However, I argue that both the

multiplicity of behaviors and the fact that amateur designers create most of the

experience would foster a critical attitude even in those players who do not

create behaviors.

The most radical idea behind "The Sims of the Oppressed" is the fact that

it is a meta-simulation: a system that affords the creation of multiple simulations.

Of course, it does not let players to change every rule in the system – otherwise

it could not be considered a product at all. Like any computer program, "The

Sims of the Oppressed" has a model, with its own rules, that define the main

characteristics of the software. This includes, for example, a "design your own

behavior" programming tool, the user's ability to share behaviors and the way

these are integrated into the program. These rules cannot be changed by the

player. Still, there are many rules that can be modified, such as the incorporation

of new behaviors. These rules could have a radical impact on how the simulation

85

works, both in its mechanics and at its ideological level. While the original designers of the software remain their authors, in this case it is harder to make them accountable for what people play with, since there is a lot of freedom to create.

The fact that several design strategies coexist in the game – and that the player knows that other players designed most of the behaviors – enhances the perception of the simulation as a constructed artifact. If a player likes to download behavior created by, say, Peter, she might be able to find certain patterns that keep repeating in his designs – for example the fact that all his characters, for example, do not fight back oppressive situations. This would make the player think about Peter as a designer and about the things that he takes for granted. In addition to this, since the player knows that behaviors were by non-professional designers could make her more attentive to details and possible flaws. And, finally, since there could be dozens of different versions for a same behavioral trait –like alcoholism- states the idea that the perception of a same behavior varies depending on the observer and that it is necessary to have a critical attitude in order to be able to distinguish the nuances between them.

The situation would be different if the original authors offered a fixed set of different characters and behaviors. What it is important in the participatory technique that I am suggesting is that the postings will offer a broad spectrum of

views. It is equally important to stress that players can not only create their own, but also modify others'. By being allowed to change Peter's code, a player is taking a look into the way Peter structures his perception of the world and exercising a critique about it.

I think that even if a player does not participate in the active discussion by rating or commenting on other people's creations by posting a message online, the fact of experimenting with alternative ideological constructions and selecting the more satisfying ones still keeps the main characteristics of the dialogical process.

Nevertheless, a simulation like "The Sims of the Oppressed" would carry several design issues. The most obvious one is that such an open-ended system would make easy for players to create certain characters and behaviors that may be problematic, such as "Benny's Pedophile Clown version 1.2", or even illegal in some countries, where the "Adolph's Holocaust-denier Neo-nazi version 6.66" would be prohibited by law. Personally, I think that since the goal of this technique is to encourage critical thinking, I would not censor any opinion. Still, this would be a major problem for the company that produces the software package. No matter how much you stress the fact that the content is created by the users, I do not think that there is any company on Earth that wants to be known as the "one that provided a platform for creating a simulator where you

force young children to work as prostitutes and sell drugs". The only way that I

can think of overcoming this problem would be to release the whole package as

a collaborative, open-source project that would be distributed online.

"The Sims of the Oppressed" is just an example of how current

simulations could be enhanced to allow more room to discussion and critical

thinking. In this particular case, since the model videogame is a best-seller, it is

not probable that such modifications could ever be done. My main intention was

to give an example on how TO's philosophy could be applied to existing software

to enhance its potential to serve as a consciousness raising medium. The next

example is not a modification of an existing game, but rather a system for

allowing players to create their own simulations by using classic videogames

from the eighties.

2. "Play My Oppression": Simulating Personal Problems

My second example of a "Videogame of the Oppressed", which I will call

"Play my Oppression" (PMO) draws on many TO techniques, including "the

projected image"[24] (Boal, 1992), which is part of a broader category that Boal

calls "Image Theater" (Boal, 1992). These techniques always involve the creation

---

[24] This technique has sometimes been incorrectly translated as the "screen image"

of images –some still, other animated- that represent or symbolize particular situations.

2.1. Image Theater

Boal describes an example of "Image Theater" based on the subject of the family. During many years, he had asked different groups to use people, chairs and a table to create an image that represents their idea of what a family is. Interestingly, Boal claims that is common that different groups of the same culture create the same image. For example, an image in Sicily shows the men playing cards at the table, while women are sitting on the background. The American family is usually represented with a man, surrounded by his family, all chewing gum. An image of an Argentinean family shows an empty seat where everybody is looking at: it is the placed of the "disappeared", the one who was tortured and killed during the seventies' dictatorship.

"The projected image" is a particular technique that combines elements FT and "Image Theater". Since Boal gives a very compact and clear description of it, I have decided to use his own words:

> The model: the protagonist constructs an image of her oppressions without worrying about making it comprehensible. It can be symbolic, it can be whatever the protagonist wants. This dynamic image is played a number of times. Each time, each participant has the right to replace the oppressed character and, within the dynamic of the image, try to break the oppression she has seen […] (Boal, 1992)

89

Both "Image Theater" and "The projected image" use the body as a model to be

sculpted and integrated with others. "Image theater" is usually preceded by

"warm-up" exercises that help the participants to explore their bodies as a mean

of expression –remember that most of them are not professional actors. If "Image

Theater" is basically a body theater, how are we going to deal with it in

videogames? There is an extensive bibliography about the role of the body in the

virtual and online world[25] but it is not my objective to make a literal computer-

based translation of Boal's work. Still, it is clear that trying to build a bodily

theater in a virtual bodiless environment controlled by mice, keys and joysticks

may prove to be a difficult task. By dropping the body out of my videogame

design, I am losing one of the key characteristics of Boal's work: the ideological

body. According to Philip Auslander, Boalian techniques reveal

> how ideology […] is expressed at the most basic material level through
> everyday, habitual routines and regimens of the body and, therefore, how
> non-hegemonic ideologies might be expressed through bodily counter-
> routines exploring physical alternatives to the oppressive regimen
> (Auslander, 1999).

I believe that it is possible to explore the same subjects that "Image Theater"

does by using the particular characteristics of videogames as a medium. If

Boalian theater's main asset is the body, I suggest to use instead videogames

biggest potential: simulation. Instead of creating images, I propose that the

---

[25] See, for example <u>Will the Real Body Please Stand Up?</u> By Allucquere Rosanne Stone
http://www.rochester.edu/College/FS/Publications/StoneBody.html

participants create small simulations (or videogames) that could be experienced and discussed by others.

2.2 The Family Album

The Sims has a feature that sometimes works like a very basic PMO, but producing images rather than models. Instead of allowing players to build simulations, it just allows to build linear narration. Interestingly, this feature has been used –to the amazement of the game developers- in order to tell personal stories, some of them quite interesting. I will explain its mechanics, because it is the only feature that gets somehow close to the idea that I have for PMO.

The Sims' "photo album" allows players to take snapshots of different moments of their play and build a commented "family album" that can be accessed through the Internet. Actually, many people use this feature as a storyboarding tool. They play the game just to create certain situations that will be captured as still images and then edited with the addition of textual comments. While most stories are trivial or melodramatic, some are particularly interesting. One of them, showcased by The Sims author, Will Wright, was created by a girl whose sister had an abusive husband. The story, which is available online[26], explains the relationship of both sisters, and how the older got married to a man who beat her

---

[26] http://thesims.ea.com/us/index.html?action=viewalbum&subject=Ventura&owner=Libra85

up. The story describes how the marriage fell down as the husband becomes more aggressive. While the story could be a work of fiction, it is presented with great verisimilitude. I was personally impressed by how touching the story was and how different was from most of the other, more trivial narrations available on The Sims' site. Wright, who admitted he was surprised by this unexpected use of the "family album" feature, announced that he plans to expand the storytelling feature in the next release of the program. While I think that The Sims' family album is an interesting feature, it is not fully exploiting the particular characteristics of the medium. Using a simulation for creating comics is like using a movie camera to take still pictures. Imagine that the author of the "abusive husband" story would not tell you the fixed sequence of events as they happened, but would rather simulate the situation so other players could experience it through multiple perspectives and by experimenting with different models of behavior[27]. Some players would use it as a way to deal with real problems that they are facing, while others might just play with it in order to expand their understanding on both human and marital relationships. In other words, PMO would be similar to the "photo album" feature, but instead of producing static narrative sequences, it would create small simulations or games that could be experienced by other players.

---

[27] The Sims allows you to download the set of characters of the "abusive husband" family. However, since characters can be defined just by very few variables, they do not really behave like they were described in the family album narrative.

2.3. The Problem of Building Simulations

What follows is a short explanation on how PMO would work. One participant would isolate a particular situation that he is having trouble dealing with. Then he could design a simulation that models that situation. Other participants would be able to play with it and some might even design modified versions that would show their own personal views on the problem. All the participants would be able to play with these different versions and discuss the different models.

However, the difference between crafting comics (as in the Sim's "family album") and simulations is enormous. While both require a high degree of proficiency, players are already familiar with visual syntax through television, film and comics. The mechanics of simulation are certainly much less familiar to consumers. Modeling a simulation requires a certain proficiency in logic and programming. Still, thanks to videogames and other computer-based activities like the use of Internet, the "simulation literacy" level might be on increase. In addition to this, we should not forget that, as we have previously shown, traditional games are also simulations and that knowledge can certainly be applied to its design. Videogame design is a very time-consuming activity. As an example, it took children three months to create their own videogames in Yasmin Kafai's research (1995). Since my plan is to allow participants to design not one,

but many videogames, it seems obvious that the design time frame should be much shorter. In addition to this, if the game needs to be programmed in a particular programming language, this requirement would certainly put off many potential participants. My purpose is to allow anybody interested in videogames to use them in order to discuss other issues, not to transform them into programmers.

Unlike "The Sims of the Oppressed", PMO was not conceived as a project targeted at a massive audience. While it would be interesting to see what would happen if such an online community would be open to the public, I envision PMO as mainly targeted, just like FT, to small groups such as high school classes, design, performance or art groups and even for people going through therapy. Since currently older adults may not be very familiar with videogame aesthetics and conventions, along with certain notions of programming, it is likely that for the next decades PMO should mainly focus on children, young adults and, in certain cases, adults.

2.4. Videogame Primitives for Simulation Building

The solution that I propose is to use well-known videogames as templates for creating simulations. The basic "programming" would be done through a set of multiple-choice decisions, a method usually known in interface design as

"wizards". In addition to this, the designer may use pre-existing graphics and sounds, or create her own through sliders or a drag and drop interface.

Because of my job as an online videogame designer and producer at the Cartoon Network's web site, it is common that I have to describe a game idea to a production company. Sometimes these companies are located in other states and the process has to be done through the phone and the Internet. This it is not an easy task. There are many ways that a particular set of actions can be represented. This is why I developed a strategy that has proven to be very effective: to create similes using "classics" from the golden age of videogames. For example, I would say that the character "moves rotating, like the starship in Asteroids" and that you have to deal with the objects "using the same process that Tapper was based on". While it is hard to say that everything has already been invented in videogames, I believe that most of the basis can be easily found in early videogames. The reason is simple: these games were so technologically constrained that they had to focus on the essence of the action. Games like Pac-man, Space Invaders, Centipede, Adventure, Tetris or Street Fighter hold the ABC of videogame design. Just like in literature, a good knowledge of the classics can be really helpful for the designer.

So, I propose to offer about a dozen different videogame design templates based on classic games. For example, if a player wants to create a game

involving fighting, she could use the <u>Street Fighter</u> template. If the simulation

involves somebody running away, a racing car template might do it, as long as

she replaces the car graphics with images of persons.

Table 2 shows some examples of videogame "primitives", along with a short

description of the main action that they are representing, which may serve as a

design guide for creating different simulations.

Car racing	Running away from a problem
Pac-Man	Trying to run away within a labyrinth that has no exit
Street Fighter	Fighting between two antagonists
Tetris	A never ending task, like in Sisyphus' myth
Space Invaders	A single player is attacked by a group
Centipede	A game where the enemy is destroyed gradually
Simon says	The player tries to imitate somebody else

Table 2. A set of videogame "primitives" based on classical videogames

<u>2.5 PMO Dynamics</u>

PMO would work as a feature available inside a bigger "Videogames of the Oppressed" online community and it is designed to be used through a computer connection, asynchronously. However, this does not mean that the players should not know each other: PMO would probably benefit from working with a homogenous group, such as a high school class or a bigger community integrated by smaller youth groups. Any participant –who will be referred as the "protagonist"-, at any time, would be able to start a "forum" and many forums could be held, asynchronously, at the same time. Each forum will have a short description and any member would be able to join it if she is interested in the topic. In order for a forum to start, a minimum number of participants should be reached - the actual number may vary and it will be up to the moderator to decide.

The protagonist will design one or a series of videogames where she would try to simulate the situation that she is trying to deal with. While these games will be based on *ludus* templates, they should be treated as *paidea* since the point is that the designer does not know how to solve the problem situation. In other words, she does not know what the *ludus* rule is, if any.

Once the game(s) is ready, it will be posted online and all the participants who previously enrolled in the forum will be able to play with it. The participants will then post their comments on a discussion forum, telling the group their opinions about how the design reflects the problem based on their personal experiences. They can also post modified versions of the original game to convey their interpretation of the problematic situation. Each one of these versions could be tested and commented by the group. The goal is not to find a "correct" simulation of the problem, but to achieve a good discussion about the problem. This discussion is mainly done through the process design. However, it could be complemented by textual postings or discussion in chat rooms. The whole process should take, depending on the amount of participants, about a week.

2.6. Sample Scenario

Basically, anybody can start a forum. However, the moderator will first review and approve the proposed topic. This has nothing to do with censorship. The reason is that certain topics are better suited to be analyzed through this technique. This is a problem that Boal has stressed a lot, particularly in Forum Theater techniques: certain situations reflect oppression, while others are simply aggression and there is nothing that these techniques can do.

It is also important that whoever submits a topic is really committed to go through the whole process. In addition to this, the topic must be clearly defined and must focus on just one problem rather than many. An example of a poor topic choice: "The problems of a teenager with her parents". An example of a more focused choice: "My parents do not want me to stay overnight at my boyfriend's house".

While some participants might be able to choose a clear topic from the beginning, others might need some help. For example, a participant might send a private email to the moderator, writing a narrative of her problem. Then, through email communication, the moderator might help her to clearly define the topic. Another solution would be to create a moderated chat room where the possible topics may be discussed among peers. In this situation, more experienced participants will help the newbies.

Once the topic is approved, the moderator will post it on the "New Topics" section for a fixed amount of time (for example, a week). During that time, anybody who is interested in participating can click on the JOIN button. After a week, the session will start. Every session is asynchronous, which means that it is not in real time. The session can be developed during many days, and participant will be able to post their opinions without needing to be logged at the

same time. When the session starts, everybody who previously applied will receive an email notification.

The person who proposed the topic will play a leading role in the session. For the sake of this scenario, let's pretend that the "protagonist" is a teenager named Peter. He submits the following topic: "I have trouble telling my parents that I am gay".

Once the topic is approved (and before the session starts), Peter will have to create games where we would try to explain his problem. For explanatory purposes, I will call them "op-games" (which stands for "oppressive games"). These op-games are created using templates from classic arcade games that are available at the site. The idea is that the op-games represent the particular problems that he has to overcome in order to solve his major problem (sometimes, the protagonist will design just one game or, as in this example, he will create a series of games).

While current videogames are based on a win/lose paradigm, classic arcade games usually do not have a winning situation. For example, it is impossible to win in Space Invaders or Tetris: the game keeps getting harder.

The goal of op-games is not to be able to represent a concrete solution to the participant's problem, but rather to simulate (usually metaphorically or metonymically) it and use it as an "object to think and discuss with".

In this particular example, Peter selected three different problems that he has to deal with. According to him, they increase the difficulty of talking with his parents about his sexual orientation. Each one of these problems will become a particular videogame and has a particular name. In this case, they are called: "Insults", "Who am I?" and "Society". Let's now see the process of creating to create these games.

2.6.1. Game 1 – Insults

The first game deals with how Peter is insulted by other people, particularly schoolmates. Peter will have to choose a videogame genre that he thinks will represent this problem. The selection of which template to use is personal and will depend on the user's creativity and experience. At any time, he will be able to discuss his choices with the moderator.

The templates will allow Peter to customize his game. For example, he will be able to upload his own graphics and replace the original ones. He will also be able to tweak some characteristics, for example if it would include a score, time constraints or which kinds of messages will appear during the game. It might be

wise to create different levels of customizations. The most basic one will be

based on simple multiple choices. However, for advanced users, it might be

helpful to introduce some programming tools that will allow more complex
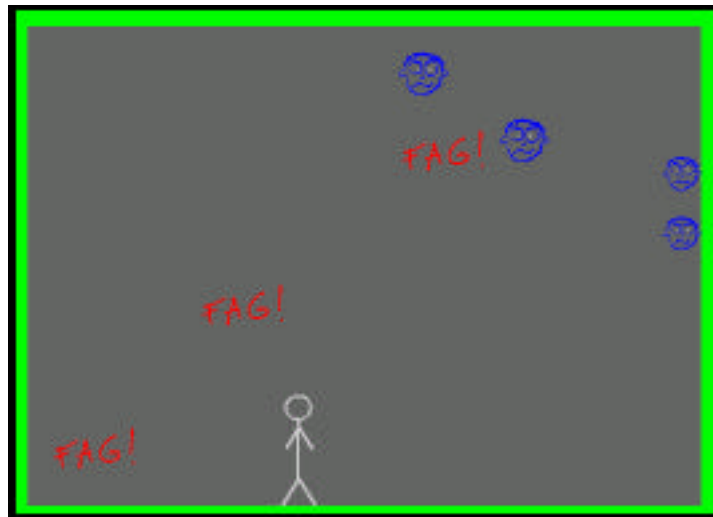
changes.

Figure 10 – A mock-up of Peter's first game

The illustration is a mockup of how Peter's first game may look like. He

used the <u>Space Invaders</u> template and replaced the alien spaceship graphic for a

sketch of a schoolmate. He also changed the graphic of the laser bean and

replaced it with insults.

Unlike the original game, the player is not able to fire back. Peter disabled

that option because he thinks that one of the main problems is that he does not

know how to reply ("fire back") to these insults. Actually, this will appear as a

"design note" and will be accessible to everybody that plays the game. Based on those notes, other users might suggest possible changes or solutions. Some of them will even create a modified version of Peter's game, introducing features that, in their opinion, represent other ways to deal with the problem.
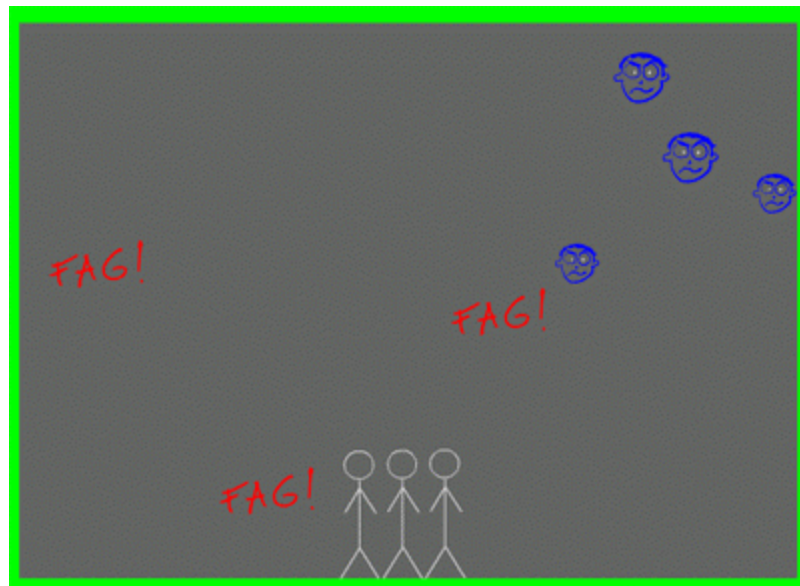

Figure 11 – A modified version of Peter's game

For example, a participant could modify Peter's game by replacing the solitary protagonist by a group of people, as shown in Figure 11. The change may be done just by replacing the graphic of one stick figure by one with three, or may include some functional modifications such as allowing the player to "fire-back" with triple power.
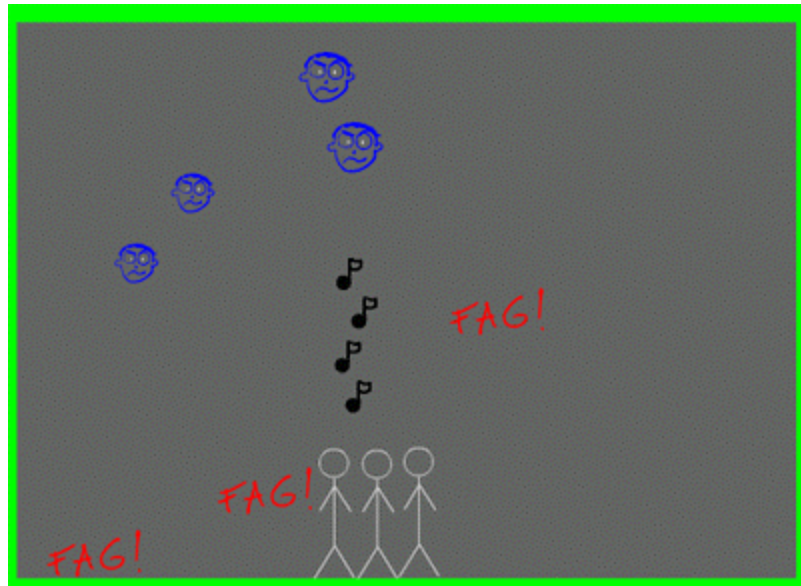
Figure 12 – "Firing-back" with art

Figure 12 shows a particular way of "firing-back" or responding to the problem. It

was designed by a player who argued that the situation could be solved by

creating and sharing art works that would help foster communication on the
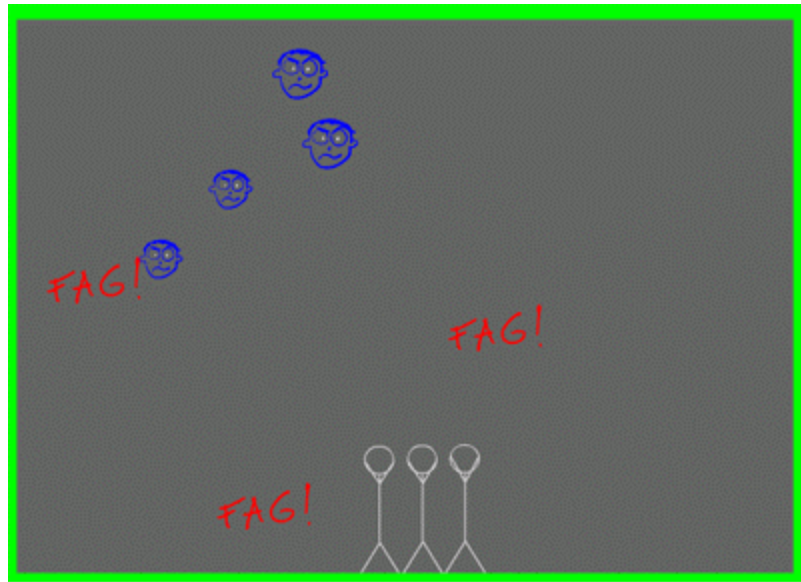
subject.

Figure 13 – One suggested solution: do not listen

However, not all the participants may have such strategies. Figure 13 shows

another modified version of the game where the designer opted for not listening

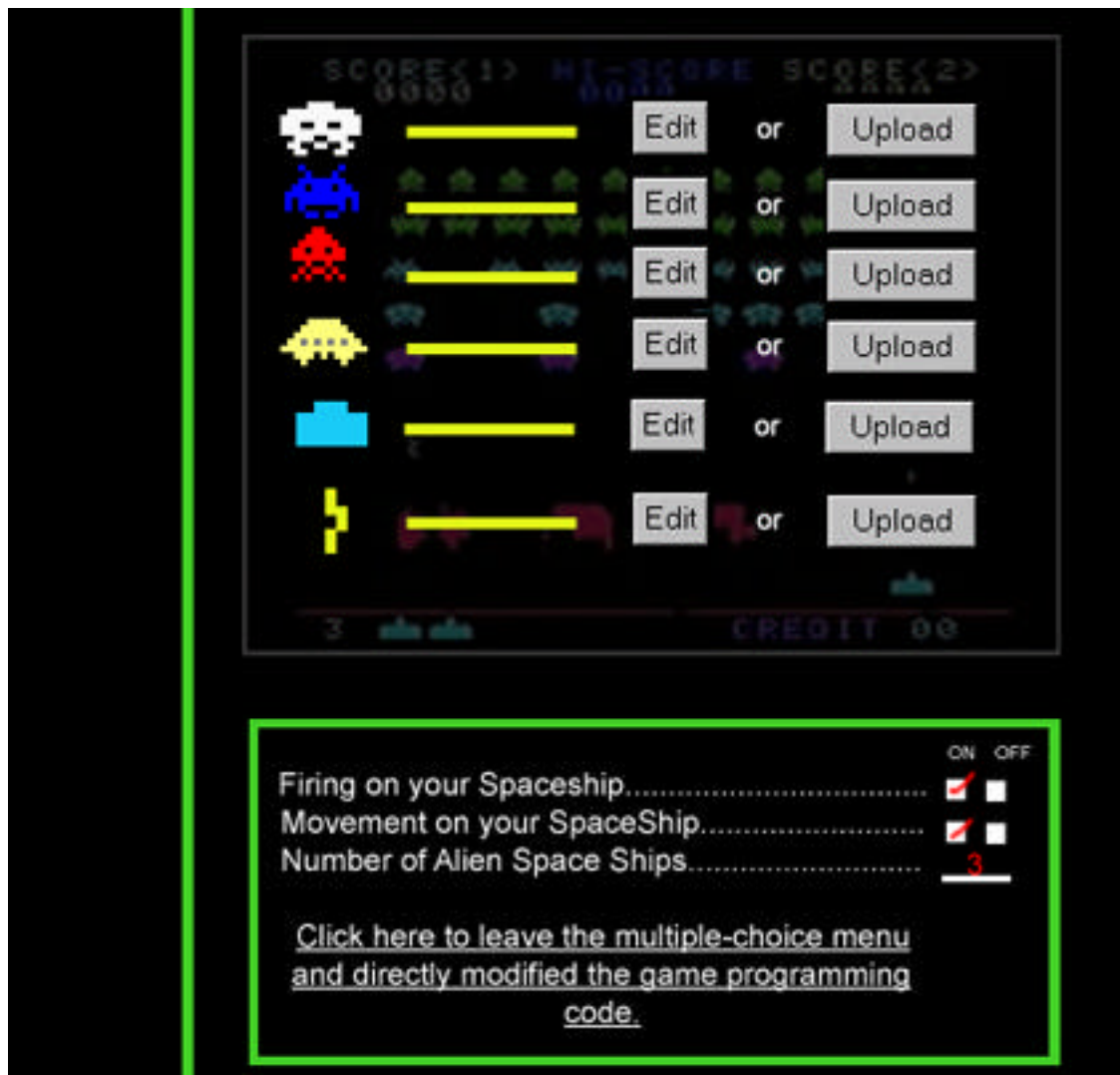to the insults (notice that the stick figures are covering their ears).

Figure 14 – Modify the template

Figure 14 shows a mock-up of the mechanics of the design – or modification- of

a game. The designer is able to edit all the graphical elements and even upload

her own graphics, including photographs. The control of the action can be done

through multiple-choice menus. This method would be ideal for beginners.

However, its possibilities are limited and the choices will clearly reflect the bias of

the original programmer. This is why the designer may have the option to modify

the programming code through a specific language (such as BASIC or LOGO).

While programming languages also reflect the bias of their creators, they give

much more freedom to modify the game than the multiple-choice method.

2.6.2 Game II – Who am I?

Figure 15 – A mock-up of "Who am I?"

        The second game shows Peter's own reflection in a mirror. When he looks

at his reflection, he sees a monster. The game is based on a fighting game (for

example, Street Fighter). In the design notes, Peter explains that this only

happens to him sometimes. Some days he feels like "I am two different people".

In the videogame, there is no way to win: the two keep fighting all the time.
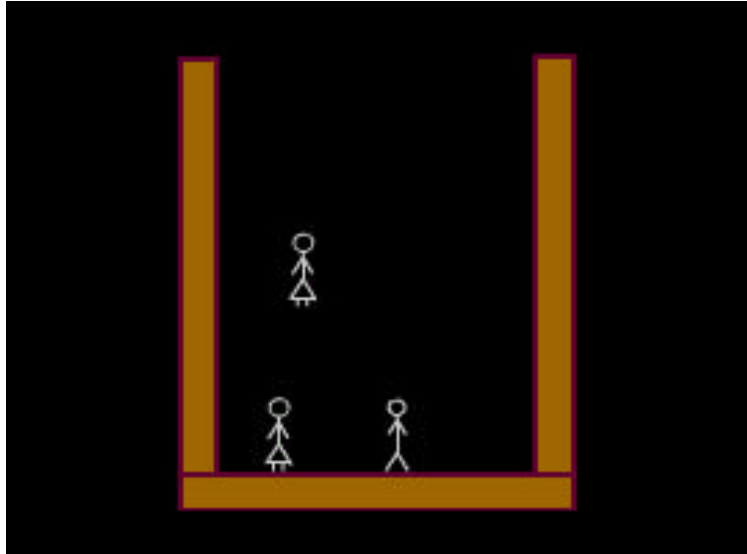
Figure 16 – A mock-up of "Society"

The third game is based on Tetris and Peter calls it "Society". The player has to match gay couples: boy-boy, girl-girl. If he matches girl-boy, that couple will reproduce over time, creating another couple.

Figure 17 – A mock-up of the discussion forum

Once the designs are ready, they are published online and can be accessed by the participants. After this, the participants can post their opinions and suggestions. Participants are encouraged to modify Peter's games and create their own versions. Figure 17 shows the messages on the forum. Those that have a little Pac-Man icon would include a different version of a videogame. While the discussion may be centered on Peter's games, many sub discussion may emerge based on criticism of other participant's games.

For example, Cathy creates a different version of the Monster game. Instead of using a fighting genre as a template, she used a "Simon says" game, where the player has to mimic the monster's movements. If the player does it

correctly, their images slowly swap. In her design notes, she mention that she faced the same problem and used to want to fight against her image, but with time and the support of a friend she was able to learn to deal with it.

2.7. Issues and Future Work

One of the main consequences of an asynchronous design is the possibility that the forum dilutes through time, without reaching a high level of participation. A synchronous forum, where the moderator would be able to foster participation, would solve this problem. However, since the design of simulations is a time consuming activity –even through templates- it is likely that a synchronous forum would take several hours to let participants to create their designs and, therefore, would diminish the group's interest.

Amy Jo Kim (2000) identifies five different roles of participants in an online community: visitor, novice, regular, leader and elder. A way to balance the level of participation in each forum would be that the moderator tries to incorporate different kinds of participants: mainly integrating novices with regular, leaders and elders, so they can learn the dynamics from the most experienced ones. Still, since the goal of the forums is to reach multiple views of the problems, nobody should be banned *a priori* from joining. If all the participants are novices, it is up to the moderator(s) to support and advice them. Some regulars may gain

enough experience to become moderators and expand the reach of the community.

While the community should be open to people of all ages, it is probable that it will particularly appeal, as I mentioned before, to children, teenagers and young adults. There are no reasons to believe that as time goes on and videogame players grow older – and the medium gains wider social acceptance – the age of the participants who could be reached will expand. The difference between gender play preferences, both in traditional games and videogames, plus the digital gender gap, may affect how "videogames of the oppressed" work. This could be a potentially fruitful topic for future research.

Since the whole idea behind "videogames of the oppressed" is to provide a means of communication by using projects that are relevant to the participants, the final design may also include some space for general videogame design discussion. In addition to this, since the technique is based on videogames designed a couple of decades ago, it may be possible that some or many of the participants are not familiar with them. Nevertheless, even if I think that the characteristic that makes these games "classics" is that their basic mechanism is still present in current videogames, it may be useful to include a "training facility" where players who unfamiliar with videogame could experiment with the games that are being used as templates.

Last, but not least, since the technique will deal with very personal

information, it will be extremely important to have a strict privacy policy that will

make clear what kind of information may be available to whom. It may be useful

to restrict access to the records of certain forums, while others may be public.

The main problem would also be how to decide this? Before or after the forum?

By simple majority or a case-by-case basis? Should participants use their real

names or remain anonymous? All these questions, along with many details of the

mechanics of the technique can only be answered through experimentation and

user feedback.

CHAPTER VIII

CONCLUSION

As a medium, videogames have the potential not only to represent reality, but also to model it through simulations. This powerful form of representation is based on rules that mimic the behavior of the simulated systems. As any constructed depiction of reality, simulations convey the bias of its designers. However, unlike narrative authors, simulation authors do not represent a particular event, but a set of potential events. Because of this, they have to think about their objects as systems and consider which are the laws that rule their behaviors. In a similar way, people who interpret simulations create a mental model of it by inferring the rules that govern it. By combining these two processes, as Sherry Turkle suggested, a new way of experiencing simulations could emerge. One where the goal of the player would be to analyze, contest and revise the model's rules according to his personal ideas and beliefs.

I have suggested two different design strategies for achieving the new kind of simulation envisioned by Turkle. For doing this, I have based my designs on the main characteristics of Augusto Boal's Theater of the Oppressed techniques, which foster critical thinking and discussion by letting spectators to

become actors and enact possible solutions to personal and social problems.

The approach that I propose for videogame design goes, like Boal's, against

Aristotle rules for representation, as stated on his Poetics. These rules have

been taken for granted by software and videogame programmers, encouraged by

works like Brenda Laurel's Computers as Theater.

My main goal in this Thesis was to show that videogames are not a trivial

medium sentenced to merely serve as entertainment, but that they could also be

a powerful representational form that encourages critical thinking, personal

empowerment and social change. While I have suggested some paths in order to

achieve this goal, my current work is simply a first approach. Hopefully, future

contributions will help the medium to mature as a representational form that

could help us to understand the reality that surrounds us and, above all, what it

means to be human.

BIBLIOGRAPHY

Aarseth, Espen (1997). <u>Cybertext: Perspectives on Ergodic Literature</u>. John Hopkins, Baltimore.

Andersen, P.B. (1990). <u>A Theory of Computer Semiotics</u>. Cambridge University Press, Melbourne.

Auslander, Philip (1999). <u>Boal, Blau, Brecht: the body</u> in <u>Playing Boal</u>, edited by Mady Schutzman and Jan Cohen-Cruz. Routledge, London.

Barthes, Roland (1973). Le Plaisir du texte. Editions du Seuil, Paris.

Bleeker, Julian (1995). <u>Urban crisis: Past, Present, and Virtual</u>, *Socialist Review,* #24.

Boal, Augusto (1998). <u>Theatre of the Oppressed</u>. TCG, New York.

        (1992). <u>Games for actor and non-actors</u>. Routledge, London.

        (1999a). <u>The Rainbow of Desire</u>. Routledge, London.

        (1999b). <u>Legislative Theater</u>. Routledge, London.

Bruckman, Amy. <u>Community Support for Constructionist Learning</u>. 1998. http://www.cc.gatech.edu/fac/Amy.Bruckman/papers/cscw.html

Caillois, Roger (1967)<u>. Les jeux et les hommes. Le masque et le vertige</u>. Gallimard, Cher.

Cortázar, Julio (1994). <u>Rayuela</u> (Hopscotch) Ediciones Cátedra, Madrid.

Dix, Alan *et al.* (1993). <u>Human-Computer Interaction</u>. Prentice Hall, Cambridge.

Eco, Umberto (1976). <u>A Theory of Semiotics</u>. Indiana University Press, Bloomington.

             (1979). <u>The role of the reader</u>. Indiana University Press, Bloomington.

             (1989). <u>The open work</u>. Harvard University Press, Cambridge, USA.

Fishwick, Paul (1995) <u>Simulation Model Design and Execution: Building Digital Worlds</u>. Prentice Hall.

Foster, E.M (1995). <u>Aspects of the Novel</u>. Harcourt Brace.

Frasca, Gonzalo (1997a) <u>El Videojuego como medio para una narrativa interactiva: notas para una poética del joystick</u>. Orbicom. http://www.orbicom.uqam.ca/en/papers/frasca.html

             (1997b). <u>Don't Play it Again, Sam: One-session games of narration</u>. http://cmc.uib.no/dac98/papers/frasca.html

             (1999) <u>Ludologia kohtaa narratologian</u>. Parnaso, #3, Helsinki.

Freire, Paulo (2000) <u>Pedagogy of the Oppressed</u>. Continuum, New York

Fullop, Rob. Quoted by Scott Rosenberg, <u>The Latest Action Heroes</u>. Wired Magazine, 3.01, 1993.

Grompone, Juan (1993). <u>Yo hombre, tu computadora</u>. La Flor del Itapebí, Montevideo.

Huizinga, Johan (1968). <u>Homo Ludens</u>. Emecé Editores, Buenos Aires.

Jenkins, Henry (1998). From Home[r] to the Holodeck. New Media and the Humanities. http://media-in-transition.mit.edu/articles/australia.html

Johnson-Laid, Philip (1995). Simulation Model Design and Execution: Building Digital Worlds. Prentice Hall.

Kafai, Yasmin (1995). Minds in Play. Computer game design as a context for children's learning. Laurel Erlbaum, Hillsdale.

Kim, Amy Jo (2000) Community Building on the web. Peachpit Press, Berkeley

Landow, George P. (1992) Hypertext: The convergence of contemporary critical theory and technology. John Hopkins, Baltimore.

Laurel, Brenda (1993). Computers as theatre. Addison Wesley, London.

Lafrance, Jean-Paul (1994). Les jeux vidéo. Réseaux #67 (September, October)

LeDiberder, Alain et Frédéric (1993). Qui a peur des jeux vidéo? Éditions La Découverte, Paris.

Murray, Janet (1997) Hamlet on the Holodeck. Free Press.

Norman, Donald (1990). The Design of Everyday Things. Doubleday/Currency, NY.

Papert, Seymour (1985) Mindstorms. Children, Computers, and Powerful Ideas. Basic Books, NY.

        (1996). The Connected Family. Longstreet Press, Atlanta.

Piaget, Jean (1991). La formación del símbolo en el niño. Imitación, juego y sueño. Imagen y representación. Fondo de Cultura Económica, Buenos Aires.

Turkle, Sherry (1995). <u>Life on the Screen. Identity in the Age of the Internet</u>. Simon and Schuster, New York.

Vidart, Daniel (1995) <u>El juego y la condición humana. Notas para una antropología de la libertad en la necesidad</u>. Ediciones de la Banda Oriental, Montevideo.

Willet, John, Editor (1999). <u>Brecht on Theatre: The Development of an Aesthetic</u>. Hill and Wang, New York.

Wittgenstein, Ludwig (1994). Anthony Kenny (editor). <u>Wittgenstein Reader</u>. Blackwell.

Wright, Will (1995). <u>Sim City 2000</u>. Electronic Arts, 1995.

(2000) <u>The Sims</u>. Electronic Arts, 2000.

Zeigler, Bernard P. et al (2000). <u>Theory of Modeling and Simulation</u>. Academic Press, London.0