

# **RADICAL GAME DESIGN**

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## **ABSTRACT**

This thesis examines the potential of video games as a medium for fostering critical thinking and discussion about social issues. The research starts with an overview of the game industry and its strategic role in the contemporary cultural industries. My critique of the mainstream industry is coupled with an analysis of the spaces of intervention for non-corporate producers such as artists, hackers, and activists. I propose the liaison between video games and the military-industrial-complex as a privileged point of view to understand the political implication of video games. Games and simulation are analyzed as representational forms, which unlike others such as narrative media as books or films, create models by means of a set of rules. I argue that these models and rules are not politically neutral as they reflect the creators' system of values, cultural contexts and ideologies. Every chapter revolves around a broad topic and is followed by a thematically related project that I developed in the past five years.

**Author Keywords:**

Video games, propaganda, ideology, politics, media-activism.

# 1. Introduction

I can picture the scene: it's a day in fifteenth century Florence, a peasant enters a recently renewed chapel. He's instantly overwhelmed; the new frescoes are like nothing he's seen before. The use of perspective, a cutting edge innovation of the time, was so powerful that its use quickly changed the rules of composition and the very idea of pictorial representation. If the flat and symbolic medieval figures were becoming pedantic in the eyes of the men of the Renaissance, the dizzily-deep scenes of Perugino and his pals updated the Christian propaganda to the emerging humanist sensibility.

I had a similar experience around 1994. I was in my friend's hardware store office. The personal computer on the desk was meant to manage invoices and bills but a few magic commands at the DOS prompt could hide the boring data sheets and disclose an awesome and terrifying world. *Doom* defined the popular genre of first person shooter. The gameplay consisted in nothing more than exploring claustrophobic mazes and destroying an army of demonic cyber-aliens, but the fluid immersive environment represented a quantum leap in the universe of action games. Employing a rudimentary but effective three-dimensional engine, it showed the world from the hero's point of view. Synthetic environments were often seen on TV and movie theaters but just a few privileged humans were able to explore and manipulate those artificial paradises.

The archetypal dungeons of *Doom* didn't just open a new visual horizon but set new parameters and expectations around the perceived quality of a video game. During the nineteen nineties, the stylized and symbolic iconography of the early video games was gradually replaced by carefully designed three-dimensional objects and environments. Game companies started to compete in providing the most immersive and verisimilar audiovisual experience. Realism was back in style and this time it was walkable

and shootable.

It would be an error to read this general trend as a pure aesthetic evolution or as a sort of techno-deterministic drive toward more detail in synthetic representations. A whole industrial complex is humming beneath the playground of electronic entertainment. With no more communists in space to chase, the post-cold war hi-tech sector had to redirect its investments to the war on boredom.

Hi-tech manufacturers have their own ideology of growth called Moore's law. According to Gordon Moore (Moore 1965), co-founder of the semiconductor giant Intel, the computational power of semiconductors tends to grow at an exponential rate. The law describes with a fair accuracy the advancement of several aspects of computer hardware in the last thirty years and is often used by techno positivists to evoke the glorious achievement of the human race (Kurzweil 2001). Obviously Moore's law is not a natural law like Newton's law of gravity, but a self-imposed parameter for setting research and development goals of a quickly expanding industry.

The problem of having all this overwhelming computational speed and memory is that it needs to be put to work to convince consumers to throw away their hardware every few years and enable another cycle of investment. Video games play a fundamental role in this regime of planned obsolescence. They are the only common-use applications that really require fast processors and loads of memory. Hardware and software development are interlocked in a race with no competitors or purposes other than capitalist growth. Powerful marketing apparatuses inoculate appetite for more polygons, more textures, more content that needs more powerful hardware. The interest for high production value games resonates with the end of the century techno-fetishism. This forced march doesn't just produce chronically dissatisfied consumers and tons of unrecyclable electronic waste, but also reshapes the software's modes of production. Content-intensive games require big, structured teams and conspicuous investments. During the late nineties, small software houses and "bedroom programmers" became endangered species while the game

industry started to resemble the Hollywood studio system of the “golden age”. A handful of large companies, which the gaming community refers to as “majors” analogous to classification systems in the music community, dominated the market.

The first victim of this process of corporate concentration is the medium's linguistic innovation. Big investments operate as deterrents to experimentation: original and potentially risky projects are rejected in favor of titles belonging to established genres or supported by cross-media licenses as popular movies, toy franchise or sports. Major companies' business model becomes hit-based, needing only a few winning titles to make up for the many unsuccessful investments (Costikyan 2005).

Toward the mid 2000s, a double front of resistance started to erode the hegemony of the majors. Players looking for new compelling experiences were increasingly dissatisfied by the offerings from these companies. At the same time, workers in the game industry saw their creative potential thwarted by giant conservative structures.

A new generation of independent game developers emerged from the Internet. The creators of independent games have something in common with their indie rocker and filmmaker “cousins”: the DIY-derived ethic, the drive toward experimentation and development of distinctive styles, and a different vision of career and success. The mainstream aggressive narrative “get rich or die trying” is rejected in favor of a more low-key approach; do what you like now and with the available means, do it primarily for yourself, make your work public, and you might get recognition and some money in the process.

The indie games scene is weaving alternative networks through festivals, exhibitions and game jams (intensive programming sessions modeled after the musical improvisation events). A new game criticism rewarding creativity and content over production values is making its way on the blogosphere, and it might soon challenge the glossy

magazines on the major's payrolls.

The distribution is also being reconfigured. The limited “shelf space,” often used by conservative corporations like Wal-Mart to justify political censorship (Pedersen 1995) (Kirkpatrick 2003) is being overcome by digital delivery. Gamers are not particularly attached to boxes, DVDs and manuals and they are increasingly buying from Internet portals or virtual shops set up by the producers themselves thus effectively cutting out the middlemen. Even the producers of game consoles, traditionally more inclined to exert control over content, are opening to small developers. Last generation machines such as Wii or Xbox 360 are integrating a secondary supply of downloadable software to the regular titles.

On another front, the population of casual gamers is steadily growing (Gibson 2006). Players with little time or money to invest in expensive devices are surfing the net looking for cheap (or free) bits of entertainment. Portals offering online games are seen as popular destinations among the thousands of kids disaffected by TV screens. Advertisers looking for the missing “eyeballs” are making substantial investments that more than often dribble to the amateur game developers who provide the content (Gonzalez 2007).

A look at the economic context in which video games are produced and consumed is a necessary step for anyone who wants to use this medium to achieve some kind of social impact. Often artists and activists are only concerned about the textuality of media objects ignoring the modes of production, the channels of distribution and the conflicts that inform these products.

The game industry at the end of the first decade of the millennium is in rapid mutation. The scenario is becoming more open and volatile and offers interesting opportunities for non-corporate cultural producers willing to venture into this largely unexplored terrain. The breach opened by independent games should not be considered as a simple

attempt to bring young blood into a decadent industry, but instead, as a new space for critical cultural intervention where the transformation of video game styles and languages can be coupled with the transformation of relations of production.



Figure 1 - *Braid* is an innovative platformer developed almost entirely by one person with no support from major companies. *Braid*'s critical and commercial success opened new horizons to the independent game developers. (<http://www.thegamereviews.com/article-993-Very-British-Gamer-We-Solved-Braid.html> Date Last Accessed 12/07/09)

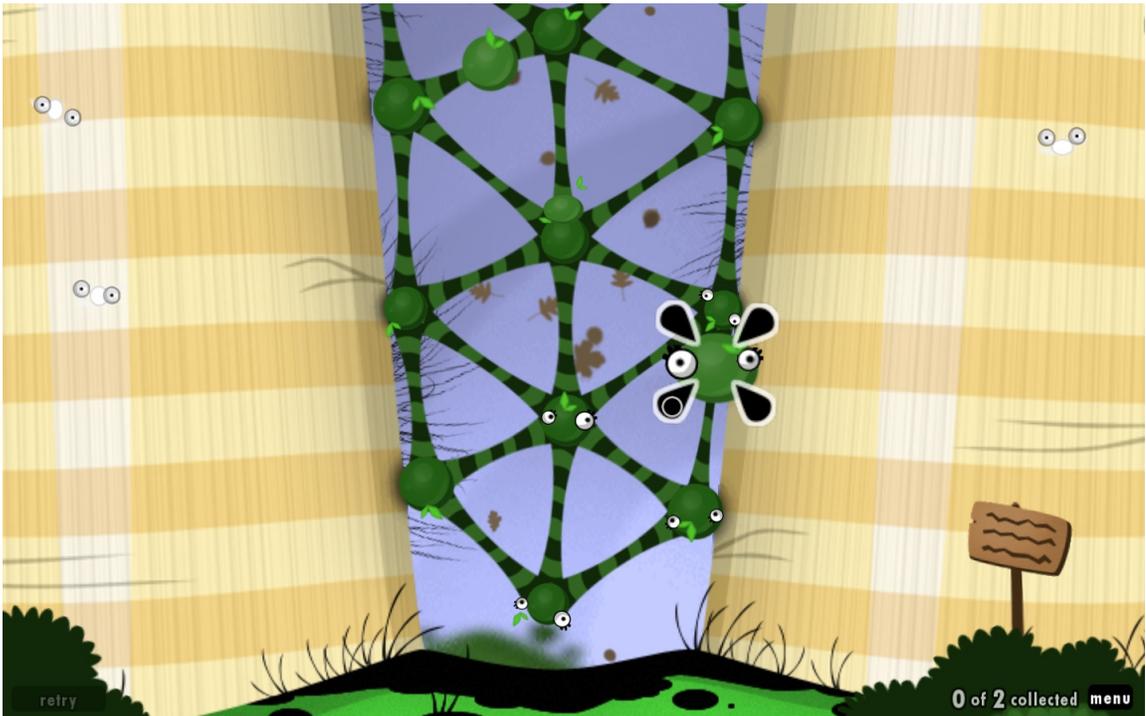


Figure 2 – *World of Goo* is the most popular spin-off of the *Experimental Gameplay Project* (see next chapter). Its original prototype employing a distinctive jelly-like physics was developed in less than seven days. (<http://dobragra.pl/world-of-goo-recenzja/?pid=574> Date Last Accessed 12/07/09)

## 2 Work: Kosmosis and Ergon/Logos

### 2.1 The Experimental Gameplay Project

At the forefront of the independent game scene there's a loosely connected group of developers whose mission is to demonstrate that linguistic innovation - new types of gameplays beyond the established genres – is pursued more effectively outside the rigid schemes of industrial production. Started as a master thesis project by four Carnegie Mellon University students, the Experimental Gameplay Project consisted of a series of contests with different general themes and with the same time constraint: one week. During the course of a semester, dozens of quirky games were released: some were little more than half-baked ideas, others were ambitious experiments gone wrong, and some became very successful titles that developed into proper products for the market (Irwin 2008). Intrigued by the exuberance and attitude of the independent game community, I decided to contribute to the project. The first two experiments are short games developed in a few days in the fall of 2009.

### 2.2 Kosmosis

*Kosmosis* is an alternative take on the trite genre of space shooter (also known as shoot-em-ups) games. The assumption was that certain features of space shooters can be easily related to the militarist and capitalist environment in which these games are designed. The following features illustrate my assumption: obsession with bullets, compulsive accumulation of power-ups, Manichean contraposition against de-humanized others, and individualism embodied by the figure of the one-against-all hero/player. *Kosmosis* tries to alter some of these traits by proposing a procedural interpretation of collectivist / revolutionary principles and challenging the player's agency. The game is presented as a

“communist space shooter from an alternate present where non-degenerated socialist values are hegemonic.” It is introduced by a series of statements loosely based on the Marxist-Leninist doctrine such as: “The task of the vanguard is to instill the revolutionary class consciousness in the intergalactic proletariat.” Every principle is methodically implemented into a gameplay that is still reminiscent of a classic shoot-em-up but with some meaningful variations. The player’s primary goal is to transform passive proletarians into revolutionaries. There’s a growing swarm of semi autonomous characters the same size as the player’s avatar. The revolutionaries confront the “reactionary forces” not by firing weapons but by gathering a critical mass and organizing a collective strike.

Finally, and this is the most radical design choice, as the revolutionary masses grow, the importance of the player (“the political vanguard”) is reduced and the space proletariat will begin to gain more and more autonomy. Toward the end, the player realizes that she’s not able to control the swarm anymore as she’s just one subject among many. He might blend with the collective intelligence of the swarm or even die while the rest of the revolutionary forces continue on the path of revolution.

### **2.3 Ergon / Logos**

*Ergon / Logos* was developed for a contest themed “bare minimum.” It’s presented as an “unidentified playing object” due to its overtly hybrid nature. The visuals are entirely composed by words arranged into a tree-like path with frequent typographical variations reminiscent of visual poetry or the futurist technique of words in liberty. The player has to navigate in this hypertextual fiction, reading the fast flow of words and occasionally choosing the preferred path in the narrative forks. The well-known structure of choose-your-own-adventure books is blended with a fast-paced gameplay and abundant lyricism.

The story is initially a meta-commentary on the platform genre presented as a

stream of consciousness coming from a typical video game hero. During the development of the short narrative, the hero can discover his xenophilic tendencies and fall in love with a monster; he can die, abandon the quest, or even jump to another dimension.

The second part is completely abstract and without an identifiable narrator. Powdered with references to French post-structuralist theory and with frequent reflexive statements, it can be read as a delirious collection of rants about the nature of text itself. While the first part (“ergon”) is about action and player’s agency, the second (“logos”) outlines a gameplay based on abstract concepts and thoughts.

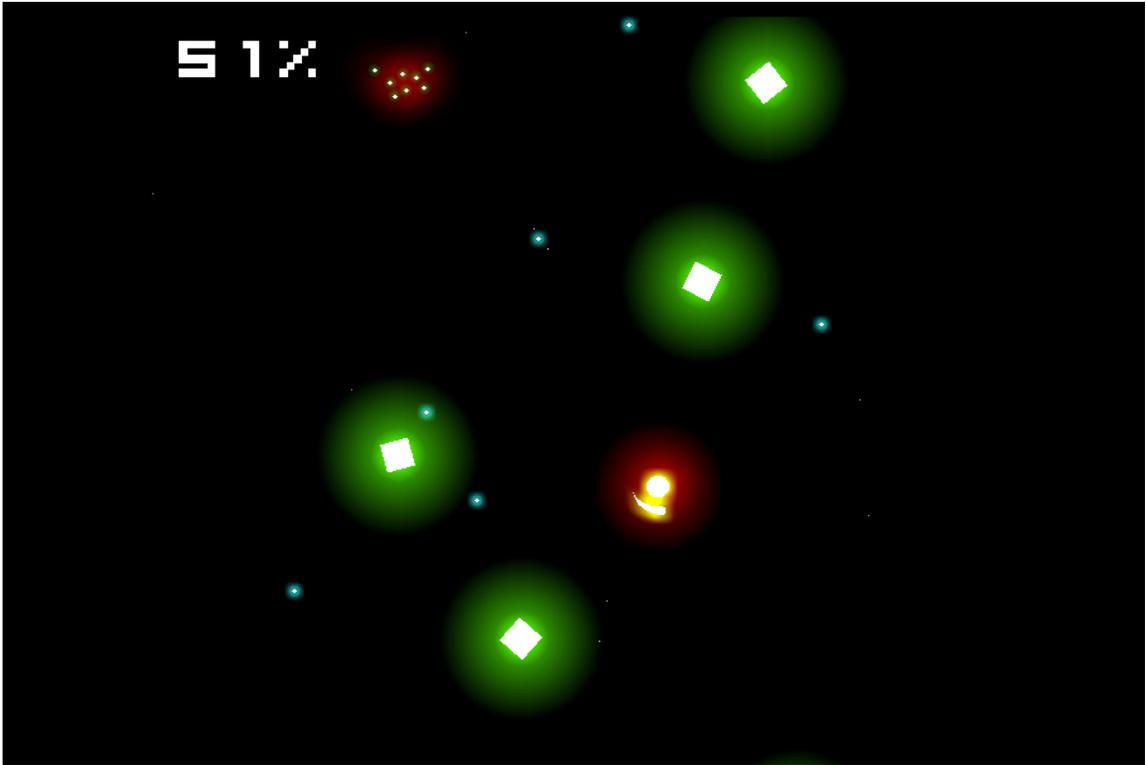


Figure 3 – *Kosmosis*. A group of space proletarians controlled by the player form a critical mass while another faction is swarming independently.



Figure 4 – *Ergon / Logos*. An example of narrative fork.

## 2. War Games

The videogames origin myth takes place in an aseptic computer lab at the Massachusetts Institute of Technology (MIT). It's 1962: the cold war is escalating, JFK promises to put a man on the moon by the end of the decade and MIT is almost completely funded by the Department of Defense (Halter 2006). A bunch of researchers are toying with an expensive, wall-sized Programmed Data Processor (PDP-1). Computers are still numb data crunchers, no video peripherals, no input devices. The programmers have to hook up a World War II radar screen to produce any visuals. After 200 hours of coding, the first proper computer game was born. It is called *Spacewar!*

*Spacewar!* is a bastard child of the military-industrial complex and the space race era. It features two human-controlled spaceships battling each other for outer space supremacy. Players have to deal with limited resources, a gravitation field and bullet trajectories. One can easily argue that all the elements of the following 30 years or more of action games are already there: shoot and dodge projectiles, keep an eye on the energy bars, destroy or be destroyed.

The promiscuous relationship between the entertainment industry and the Department of Defense can lead to the conclusion that there are intrinsic militaristic qualities in computer games. The U.S. Army has looked at videogames with interest since 1980 when Atari released the coin-operated arcade game *Battlezone*. The game employs a revolutionary first person view, the player operates a tank in an immersive virtual environment. Although *Battlezone* used a primitive wireframe graphics, the simulation was good enough to convince the army to commission a modified version for training purposes. Bradley Trainer, the result of the collaboration, is today a sort of Holy Grail for

arcade collectors (Halter 2006).

The research in immersive environments and battlefield simulations becomes a serious concern for Defense Advanced Research Projects Agency (DARPA) during the 1980s and culminates with the development of SIMNET, a distributed network of training simulation units. With SIMNET, soldiers from all over the United States can battle in the same virtual environment based on data from actual war scenarios (Lenoir and Lowood 2003).

In the collective mind, the dirty images of the Vietnam war portrayed in movies like *Platoon* and *Apocalypse Now* have been carefully substituted with the sexy war machines in *Top Gun* (Robb 2004). At the end of the cold war, public opinion in the Western world was ready to accept the idea of a hi-tech conflict without victims. The first Gulf War (1990-1991) appeared on CNN as a cold videogame featuring pixelated night-vision scenes and "surgical" attacks by smart bombs.

Operation Desert Storm is fought in a perfect abstract space - the desert - almost exclusively with aircraft and battleships. The art of killing at a distance, perfected with simulation technologies in the previous decade, couldn't find a better reality check: Iraqi forces were annihilated in a few months with no losses, images of victims and ruined cities barely flashed on the television screens between segments of war-porn.

In the 1990s, with U.S. military supremacy at its highest peak since the end of World War II, commercial game developers actively looked for collaborations with the military institutions. This, coupled with the post-Cold War budget cuts in defense spending that pushed military organizations toward more collaboration with private sectors of electronic entertainment gives birth to the military-entertainment complex (Herz 1997).

*Counter Strike* is the paradigmatic example of the militarization of videogame culture. The science-fiction first person shooter, *Half Life*, widely acclaimed for its com-

plex plot, is completely transformed into a contemporary warfare game by a couple of devoted players. Aliens and lasers are replaced by terrorists and AK47s, dystopic research complexes by mosques and minarets.

By 1999, the U.S. Army has already shifted the focus from videogames as training devices to videogames as public relations tools. The relatively peaceful decade characterized by the fall of the Berlin wall and the utopian visions of economic globalization is coming to an end. The “New American Century” imagined by the neo-conservatives is inevitably going to be marked by conflicts for declining resources and the reassertion of U.S. dominance over emerging countries. These new challenges would require lots of cannon fodder and the best pool for recruiting new soldiers is obviously the gaming community. After all, these teenagers were already spending hours and hours aiming and shooting targets. The notion of games as eye-hand coordination training devices blends perfectly with the cyborg image of the 21st century soldier.

*America's Army (AA)*, the first game entirely developed by the United States Army was released in July 2002, just in time for the military adventures of the two Bush administrations. Free for download and deadly “serious” and “realistic,” *AA* is meant to provide the public an engaging and informative insight into the life of a soldier. And, in the process, collect information about potential recruits (Webb 2004). In addition to the free download and on-line information gathering, the Army began connecting with young people in person through demonstrations in game shows and public events. At the demos, young people readily exchange their personal information for a chance to try out immersive game environments located inside flashy vehicles. Then recruiters aggressively contact these people in order to sign them up for the Army. The success of *AA* encouraged the Army to produce sequels and spin-offs including action figures based on existing soldiers. The Army even opened a futuristic recruiting center in Pennsylvania with actual training simulators and videogame tournaments (McLeroy 2008).

Predictably, the sanitized representation of war provided by *America's Army* did not match the actual war scenario. In a land invasion, without the support of the local population, the ability to aim and shoot plays a minor role. The festival of computed ballistics of the first Gulf War is a memory of the past. Young soldiers are deployed in the midst of hostile cities, confronted with a highly fragmented social fabric where the distinction between friends and enemies, oppressors and liberators is blurred. For kids who grew up with fast action shooters that systematically removed civilians and all the non-war related information from the landscape of the game, the experience must be shocking. The training technologies and the war propaganda 'a la *America's Army*, failed to prepare troops for a purely asymmetrical war.

By the end of the second G.W. Bush administration it was clear that the U.S. military intervention failed to win the heart and minds of the Iraqi and Afghan peoples. Moreover, it is the invaders' hearts and minds that are shattered: a 2008 study found that nearly twenty percent of returning war veterans from Iraq or Afghanistan reported symptoms of post-traumatic stress disorder or major depression (RAND 2008). The military fantasy of a cold-blooded killing machine ends in desperation and alcoholism.



Figure 5 – *Spacewar!* running on a PDP-1.  
(<http://www.computerhistory.org/collections/accession/102618914> Date Last Accessed 12/07/09)



Figure 6 – *America's Army* screenshot of the video game.  
(<http://www.americasarmy.com/aa/media/index.php?id=36&type=mission> Date Last Accessed 12/07/09)

#### 4. Work: Welcome to the Desert of The Real

*Welcome to the desert of the real* is a six minutes and thirty seven second video that uses footage captured from America's Army to highlight symptoms of post-traumatic stress disorder, an increasingly prevalent condition among U.S. service personnel returning from combat zones in Iraq and Afghanistan.

The practice of using in-game footage to produce digital videos has been adopted by artists in the last decade (Wallin 1997) (Stern, Sheik Attack 1999/2000) (Manetas 1997) and more recently it became popular among video game enthusiasts. Most of vernacular machinima (a contraction of machine and cinema) can be classified as *fan-fiction*: amateur products that expand the narrative of the original product; some machinima authors take advantage of the accessibility of videogames' engines to tell stories that have nothing to do with the original work. With *Welcome to the desert of the real* I appropriated a game produced by the Army, and I put the images in relation with textual excerpts from the Post-traumatic stress disorder checklist, a self diagnosis tool also published by the U.S. government. This juxtaposition of (almost) ready-made elements is meant to reverse the fascination mechanism of America's Army: the intense, fast paced action of the original game is substituted by a slow, low-key almost hypnotic narrative. The long sequences, reminiscent of Gus Van Sant's *Gerry* (Van Sant 2002), show a marine wandering in the desert, possibly after killing an enemy from a distance. The interplay between the items on the checklist (questions like: "Feeling emotionally numb and incapable of loving feelings?") and the metaphysical space of the desert, create

a short circuit between the reality of war and the simulated battlefield; a battlefield that, without gunshots and explosions, appears in all its low-resolution misery.



Figure 7 – *Welcome to the desert of the real.*



Figure 8 – *Welcome to the desert of the real.*

## 5. Playable Art

Here's a joke with no punch line: there are three artists and a computer in a room. The first approaches the machine with a bit of skepticism. He opens some common applications; he recognizes familiar objects: desktops, folders, paint brushes, typing and editing tools. He connects to the Internet, makes some social network friends and starts to spam everyone about his forthcoming gallery opening. He leaves the room satisfied.

The second artist spends a little more time with the computer. He looks into code he's supposed to ignore; he writes some of his own devise. He is amazed by the unexplored potentials of this machine; a tool conceived by square-headed engineers can be bent and transformed to produce art! For him, digital technology is something that happens to be available and oddly suitable for fulfilling his indomitable need for self-expression. He makes beautiful, enigmatic, fascinating works that don't look like anything made before. The artist is immediately hired by a company in the Silicon Valley and now works with the same square-headed engineers who designed the tools. Or maybe his ideas are stolen by a marketing firm and used to sell stuff... I don't quite remember this part.

The third artist is as skeptical as the first but he decides to explore the guts of the machine as the second artist did. What he sees is both intriguing and scary. The minute texture of integrated circuits seems to mirror bigger systems: the structures and the ideologies of human institutions. He realizes that power is a fractal inscribed in every artifact, on every scale. He starts to look for glitches and bugs to exploit. He frantically unplugs and plugs connectors and boards. He produces dysfunctional monsters, unusable interfaces, and deceptive artifacts that mock the shiny machines built for war or consumption. At the end the computer gasps and blows a puff of smoke; its belly open like a slain pig; its monitor flickering binary code. This technological crime scene is the art-

work. You can look carefully into these leftovers and see the patterns that unsettled the artist in the first place.

This third approach informed the early artistic explorations of videogames. Spinning off from the obscure software/net.art community, artists like Jodi (Jodi, SOD - Castle Wolfenstein Mod 1999) (Jodi, Untitled Game - Quake Mod 1996 - 2001) and Joan Leandre (Leandre, nostalg 1999) (Leandre, retroYou R/C 2000) tackled the medium with luddite fervor. Hacking the source code of commercial games, they tore apart the polished surfaces of 3D engines to reveal their true digital flesh. Their radical game modifications are the computational equivalent of informal art. Their main concern is the visual quality of the digital matter: the algorithms at work, the hidden bounding boxes, the clipping glitch behind every texture. The artists' concerns with making visible the more abstracted visual qualities of games offered an antidote to the game worlds' representational obsession.

In the mid-nineties some game companies adopted the practice of releasing the source code of old games in order to give the users the possibility to enhance and extend (in jargon "to mod") their titles autonomously. Modding communities effectively extend the life cycles of certain games and function as a diffused, *crowdsourced* research and development department (Howe 2008). Artists' mods are unexpected consequences of these policies, parasitical interventions (A. M. Schleiner 1998) that criticize the very same products they are built upon.

Artists' oppositional attitudes toward games are not limited to the code. The militarization of game worlds, especially in the context of the post-9-11 authoritarian trend, is a central concern for socially and politically engaged artists. The crowded online fighting arenas of *Counterstrike* and *America's Army* can be used as public spaces for disruptive performances (A.-M. Schleiner 2002) (Delappe 2006). Instead of breaking the produc-

tion-consumption routine of grey urban spaces with active desire and playfulness as prescribed by the Situationists (Situationist International 1958), virtual performers open a window of “reality” in the colorful, alienating, playable online worlds.

In certain cases, it is the nature of *play* that is under investigation in artist interventions. Videogames are not just code; they become what they are only when their text is *activated*. The interface is what enables this human-computer dialog (or computer mediated dialog between humans), and it deserves as much attention as the software. The most notable experiments in artistic game interfaces seem to push the typical videogame machismo to the limit. By implementing a system of punishment that affects the player on a physical level (//////////fur//// 2001) (Stern, Tekken torture tournament 2001) (InterpretiveArson 2005) artists blur the physical-virtual divide and grant the machine a problematic power. The safety of the “magic circle” (Huizinga 1955), one of the basic principles of games (especially the electronic ones), is undermined. Unmarketable but still playable and compelling, these experiments outline the sado-masochist component of play and inject a dose of seriousness in the supposed triviality of games.

On a different front, artistic interfaces made by women try to subvert the testosterone features of a male dominated medium. Examples include joysticks designed for multiplayer collaboration (Flanagan 2006), controllers that need to be caressed (Cadet 2004), wearable joypads that turn a lethal “combo” into a massage (Satomi and Perner-Wilson 2007), or arcade games into foreplay (Chowdhury 2007).

Artists working on experimental interfaces and mods share a common critical attitude toward mass culture. Their role is not to “elevate” a medium generally perceived as shallow and childish to the status of high culture, but, instead, to create works that can respond to mainstream production. The marginal role of the art system, compared to the

overwhelming power of the cultural industries, is an undeniable fact. Because of this, artists must then choose simple but conceptually powerful gestures to attack the dominant discourses that resonate in commercial games.

Another aspect of game design susceptible to guerrilla ambushes is language. In over forty years of history, videogames developed their specific grammar; they clustered into defined genres; they established tropes and clichés. Sometimes, in order to develop new forms, it is necessary to challenge the old ones. As the Surrealists attacked the emerging continuity system adopted by classical Hollywood cinema with plot inconsistencies and experimental techniques, some contemporary game designers are turning upside-down the well-established formulas of classic videogames. *Psychosomnium* by the Swedish game designer Cactus looks at first sight like a standard platform game but its dreamy world follows a completely different logic. Bricks, spikes and traps reminiscent of *Super Mario Bros* can trigger unexpected results. The main character dies after a few seconds and is promptly replaced by a different character. *The Graveyard* by the Belgian studio Tales of Tales, clearly references the classic third person view popularized by action games like *Tomb Rider* but it features an old lady visiting a cemetery. The peaceful environment, the black and white tones, the lack of interaction and freedom of movement moved some and outraged others in the community of “hardcore” gamers. It’s not the “sophisticated” theme of death-and-memory that makes the *Graveyard* an outstanding artwork, but the idea of presenting it in a game form. Creating expectations and then refusing to fulfill them is a way to reveal the standardization of entertainment and allude to the untapped expressive potential of the medium.

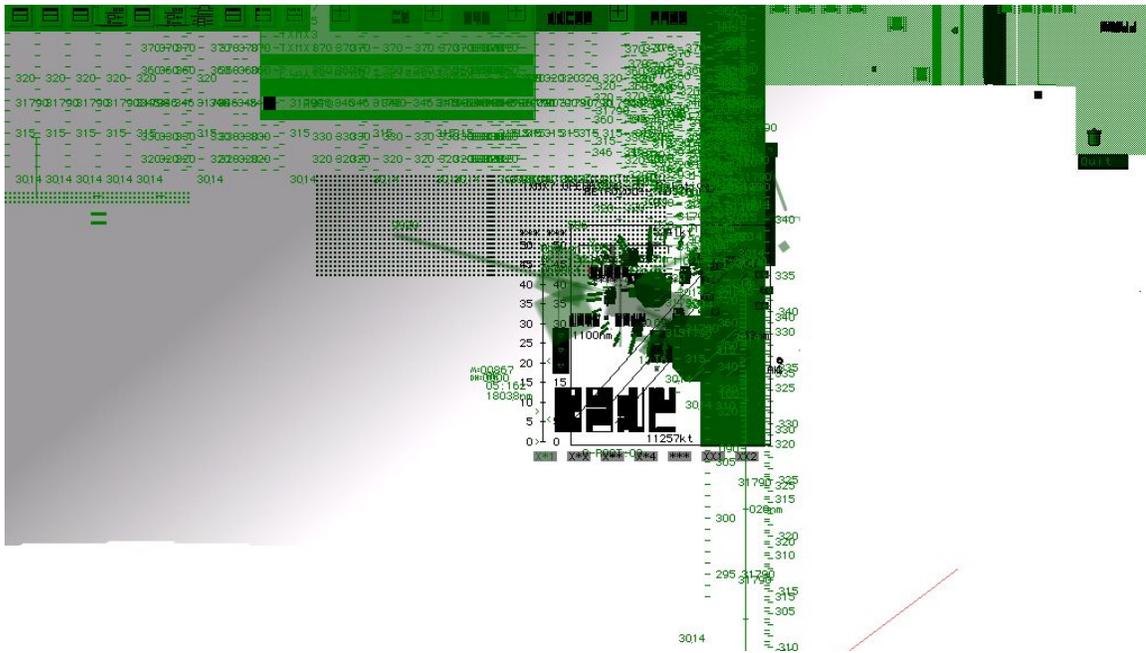


Figure 9– *NostalG*, a deconstruction of a flight simulator.  
 (<https://wiki.brown.edu/confluence/display/mcm1700n/Game+Mods+-+A+Different+Sort+of+Play+Date+Last+Accessed+12/07/09>)



Figure 10 – *Dead in Iraq*, intervention in America’s Army online arenas.  
 ([http://www.unr.edu/art/DELAPPE/Gaming/Dead\\_In\\_Iraq/dead\\_in\\_iraq%20JPEGs.html](http://www.unr.edu/art/DELAPPE/Gaming/Dead_In_Iraq/dead_in_iraq%20JPEGs.html) Date Last Accessed 12/07/09)

## 6. Work: Tuboflex and Orgasm Simulator

### 6.1 Molleindustria

Molleindustria (Italian for soft industry or software factory) is a project of reappropriation of videogames I launched at the end of the year 2003. My goal was to blend the media activist tradition with the emerging field of games studies to articulate a critique of mainstream games while at the same time, producing entertaining products tackling various social issues. It was clear to me since the inception of the project that alternative messages would require alternative forms of gameplay. My early games were designed to target certain features and clichés often considered a “natural” part of the gaming medium such as the win/lose dichotomy, the level linearity and the escapist function of entertainment.

### 6.2 Tuboflex

Here’s a question worth asking: why is *Super Mario* a plumber? Has anybody ever seen him fixing a pipe? He would probably fit better into the shoes of a rampant Wall Street broker, a social climber attacking every being that comes across his path. His eternal dissatisfaction, his continuous run, his orderliness in killing enemies looks suspicious.

In the typical level-based structure of arcade games we can recognize some qualities of the yuppie ideology: success is like a ladder that gets harder and harder to climb. There are many partial achievements, but the whole plan is often difficult to understand. Individualism, competition and accumulation of useless points are constant features. It’s the neoliberal shortsightedness, the means that becomes the end, the obsession with career, the 80’s dream that is embodied in this and other mainstream games.

*Tuboflex* is a sabotage of the meritocratic structure of arcade games. The set is a dystopian future where labor flexibility has reached a paradoxical point. Tuboflex inc., the world's leading Human Resources Services organization, created a complex tube system that makes it possible to dislocate workers in real time, according to market demand. The player is a *Tuboflex* employee trying to survive this Darwinian labor market. He might be working at a call-center, handling an influx of calls from angry customers and suddenly be sucked into a giant pipe to be relocated into a fast-food job. The pace of the game gets more and more frenetic and the player's performance declines until he gets expelled from the labor market, ending up begging on the sidewalk.

The temporary worker - or precarious worker, as we say in Europe - seems to be condemned to an eternal reincarnation cycle, with no career perspectives or social climbing opportunity. I thought I could describe the cruelty of such conditions (that I was experiencing in real life at the time) using a frustrating random level structure. To univocally condemn neoliberal labor policies, I decided there wouldn't be any happy ending. In *Tuboflex* the failure is inescapable and irreversible as is in real life for most people.

### **6.3 Orgasm Simulator**

“Dear girls, simulating orgasms is a useful practice to maintain a good sentimental relation with our partners. Every man dreams of a woman who yells and gets crazy during sexual intercourse, but unfortunately most women are uneasy about these naughty performances. The *Orgasm Simulator* is a simple game that will help you feel confident with the mistreated art of faking orgasms.”

This tongue-in-cheek text mocking the teenybopper magazines sex tips introduces the player to the game. The *Orgasm Simulator* (in Italian the verb “simulare” is used in the expression “to fake an orgasm”) employs a first person view. The player takes the

part of a woman having intercourse with a macho male partner. The man's movements are mechanic; his moans get more and more intense. The player pushes and releases the only button in the interface to control the intensity of her screams. If she is too fast or too loud the partner will realize the faking. If she is too mellow, he will be hurt and a game over message will end the game: "Now he thinks you're frigid."

Game designers are usually too accommodating. They give people the possibility to play the part of valiant heroes, powerful generals or frightful criminals to fulfill a common desire to escape from a boring and frustrating life. Providing disempowered people an illusory agency to release the tension accumulated during the productive time is not just a lucrative business but also fundamental part of social control. Electronic entertainment is the most recent and sophisticated instantiation of the "bread and circuses" construction of consent. Be a virtual hero at night so you can be a humble and alienated production unit during the day.

But game designers can refuse this role, and instead establish a healthier sado-masochistic relationship with the users. The awkward performance required by the *Orgasm Simulator* is an attempt to counter the typical game machismo with irony. I tried to create an uncommon reverse shot to enlighten one of the many subtle forms of gender oppression. And we can force players into many challenging, maybe unpleasant roles to make them see the world from different points of view. What is it like to live as an old lady, a kid from a 3<sup>rd</sup> world country, a refugee or a drug addict? The trappings of designing experiences from the eyes of the Other are many; the risk of trivialization can undermine the empathic identification, "exotic" cultural elements can be distorted when forced into a medium that is still primarily defined by North American and Japanese producers. But the direct involvement of under-represented subjects in game development can potentially transform the medium more deeply than any technological advancement. A family simulator 'a la *the Sims* but not centered on the Western middle-class suburban family

has been envisioned before (Frasca 2002) but never realized. The process of media literacy and democratization of the means of production and distribution that is reshaping the world of video right now might occur for all electronic entertainment. Obviously, this is not a matter of technology but of political will.



Figure 11 – *Tuboflex*, working in a fast food drive through.



Figure 12 – *Orgasm Simulator*, faking an orgasm in first person.

## 7. Modeling Reality

Everything started because of an error. It's the year 1961 and the mathematician and meteorologist Edward Norton Lorenz is playing around with one of the first climate simulations. It's a numerical computer model designed for weather forecasts; the user feeds it with numbers and it produces even more numbers. Lorenz is rerunning a known forecast scenario, but as a shortcut he enters the number 0.506 instead of 0.506127, the full decimal the computer can hold. The result is an enlightening surprise: that minimal approximation of the input variable, processed by a hundred vacuum tubes, produces a completely different forecast scenario.

The accidental discovery was formalized in the notion of *sensitive dependence on initial condition* but became popular as the "butterfly effect" (Mathis 2007). The concept was groundbreaking: we live in a crazy world where the flap of a butterfly's wings in Brazil can hypothetically set off a tornado in Texas. This craziness is what scientists try to grasp with chaos theory and Lorenz's findings were one of its most important milestones.

Lorenz wasn't the only genius struck by a piece of software. Computers' ability to interrelate a multitude of variables in a compressed time is playing a fundamental role in understanding complex systems. This development is bridging the field of cybernetics with the fields of biology, meteorology and social sciences (Kelly 1994). Flock simulations are very helpful, not only to explain the dynamics of actual bird flocks, but also to describe many phenomena of the interconnected world such as consumer behavior or financial markets (Macal and North 2005). Computational systems as cellular automata are the basis for the conceptualization of emergence, the idea that complexity in the world

arises from the interaction of numerous agents governed by deterministic rules (Wolfram 1996). In brief, dynamic models can push us to approach real life systems in new ways. They can effectively describe behaviors that might at first sight appear random or systems that might look too vast to be approached as a whole. There is the same underlying potential in video game simulations since they share many characteristics with the aforementioned scientific applications.

*SimCity* is the first episode of a successful series of urban planning games. It is based on simplified scientific models and cellular automata and it is open-ended by design; a virtual sandbox in which the player sets her own goals. To play *SimCity* is basically to understand the behavior of a complex emergent system. The user, in the shoes of a mayor / urban planner, has limited power over the city. She can develop infrastructures, set policies and zone areas to residential, commercial and industrial use, but ultimately the result will be a combination of her active efforts and the internal dynamics of the system; its inertia and its implicit and explicit rules. Virtual cities respond as organisms making the experience of playing close to gardening: the player intervenes then tries to understand how the intervention affected the whole city. She has to negotiate her desires and visions with the inner relations that emerge from the city (Friedman 1995).

There is something intrinsically progressive in *SimCity*. It promotes a systemic approach to problem solving by forcing the player to consider every element as a part of the whole. This kind of approach is typical of a holistic, ecological way of thinking that can be set against the mechanistic and reductionist paradigm of thought that dominated the Western thought since the enlightenment (Capra 1996). Zooming out, thinking globally, imagining the world as an organism that can be gradually transformed but not completely dominated is not a vague new age resolution but a skill that future generations will be required to have in order to solve the incumbent global crisis.

It has been argued that simulation games can describe dynamic interrelations and

processes better than any other media because they are procedural and dynamic in their very nature (Bogost 2007). But there's a risk related to the apparent openness of simulation games: giving the player a certain degree of agency doesn't mean opening the "text" of the game to any interpretations and uses. When I play *SimCity*, I can't experiment with *every possible* instance of urban settlement. Its openness is limited to a specific model of a North American big city. Its implicit rules are informed by the capitalist paradigm's growth imperative (Collins 2006). Its racial neutrality can be criticized as an active removal of the issues of segregation and migration as if they weren't fundamental urban dynamics (Bleeker 1994-95). Moreover, its general ecological approach mentioned above is undermined by its ubiquitous commoditization of nature and glorification of car culture (Hamming 2004).

These problematic features are not surprising. Simulation games are after all man-made representations. Game designers create subjective models of certain real-world systems, and models are necessarily simplifications. They have to choose what to include and what to exclude from the system. They have to institute internal economies and cause-and-effect relations. They have to create systems of reward and punishment. All these choices, even when they are bundled with scientific knowledge, are informed by the creators' culture and system of beliefs. Thus, more often than not, mainstream games reflect the dominant ideologies since normalized, reassuring worldviews are commercially more viable.

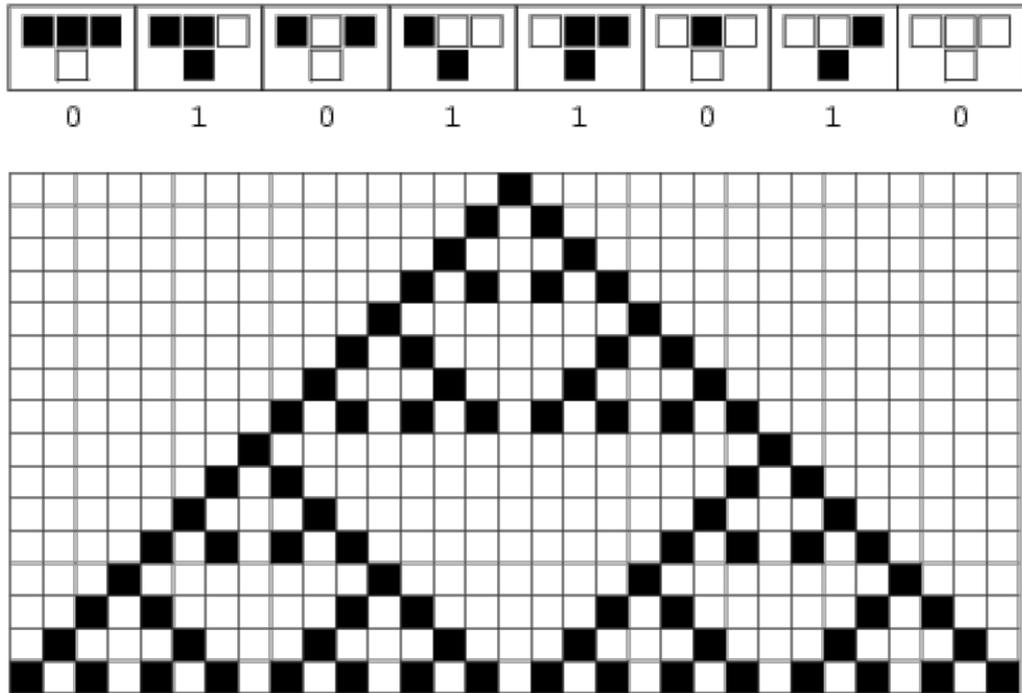


Figure 13 – Simple Cellular automaton scheme, rules and first generations.



Figure 14 – *SimCity 4*. The series is arguably the most popular implementation of cellular automata algorithms.  
 (<http://forum.skyscraperpage.com/showthread.php?t=146290> Date Last Accessed 12/07/09)

## 8. Work: Oiligarchy

### 8.1 The Game

*Oiligarchy* is a playable commentary on the oil industry. The player takes the role of an "oiligarch" managing the extraction business in the homeland and overseas and lobbies the government to keep the carbon-fossil based economy as profitable as possible. *Oiligarchy* can be considered an extended business sim/tycoon game since the player makes decisions and performs actions that are not always in the domain of business. This mixed gameplay is meant to highlight the intricate relations between war, politics, and energy corporations. The purely economical activities range from finding new oil fields to building extraction plants and managing resources. As domestic resources decline, the player is forced to expand their business in foreign countries to meet the demands of the market. The overseas operations could require the political or military support from the government and various crisis management actions.

### 8.2 Peak Oil

*Oiligarchy*'s main mechanic is loosely based on the Hubbert peak theory (Hubbert 1956). The theory can be summarized as follows. For any given geographical area, the rate of petroleum production tends to follow a bell-shaped curve. Early in the curve the production rate increases due to the discovery rate and the addition of infrastructure. Late in the curve the production declines due to resource depletion. Peak oil activists (Heinberg 2005) argue that if global oil consumption is not mitigated before the peak, the availability of conventional oil will drop and prices will rise causing catastrophic chain reactions in the whole economy.

*Oiligarchy* is meant to popularize peak oil as a key issue to understand the present and future crisis and to contribute to the re-framing of the vague and deceptive argument of "dependency on foreign oil" that is dominating the current political discourse in the U.S.

I chose to focus on the United States because it is the most oil dependent country in the world. In the U.S., there is strong relationship between the oil industry and government politics. Despite the relative decline of American global influence, U.S. policies are going to affect the rest of the world for many years to come.

### **8.3 Being the Bad Guys**

As in my previous economical simulation, the *McDonalds' Video Game, Oiligarchy* places the player in the shoes of the "bad guys" in order to articulate the critique. My belief is that power structures can be understood more clearly if represented from a privileged position. The player tends to perform actions with both positive outcomes (profits, advancement in the game) and social or environmental costs (negative externalities) forcing the player to deal with responsibilities in a system that does not really punish unethical choices. The unethical gameplay is designed to reflect the free market system, which is ultimately, the object of the critique.

### **8.4 Management**

Although the player believes that their role is to lead a big vertically integrated oil company, the game only shows the beginning of the production chain, as well as exploration and extraction, which is the relevant part for addressing the issue of peak oil. The visual representation of drilling and extraction is grossly simplified, but an important and not broadly known technical detail is taken into account: the extraction rate of every single oilfield tends to gradually decline when the reservoir is half depleted. This is one of

the factors that determine the typical bell shaped curve of oil production. The player will probably tend to exploit resources that are easier to reach and gradually move to more expensive techniques like offshore drilling as well as investment in politically unstable countries.

The bell shaped curve of production is the most counter-intuitive part of the peak oil theory: unlike a car that suddenly stops working when the tank is empty, the global crude extraction (in a business as usual scenario) reaches the peak when half of the oil underground remains. Then it declines gradually, but at progressively increasing speed like a roller coaster slope. This factor deeply affects a typical game session that will have an expanding phase (as in all the mainstream strategy and business simulation games) followed by a contracting phase marked by the struggle to keep up with the demand and the convulsions of the economic system. The player's primary objective is to match the market demand for crude oil. The demand is a function of two variables: the Gross Domestic Product (representing the size of the economy) and an umbrella value called "oil addiction." The "Oil addiction" variable is an homage to George W. Bush's ghost-writers, who popularized the expression in a rare moment of honesty (Office of the Press Secretary 2006), and represents the dependency of the entire economy on fossil fuels. This takes into account a wide range of factors such as agriculture, public transportation, car-centered urban planning and so on. At the beginning of the player's turn which is represented by a year, the oil production is lower than the demand thus triggering a supply crisis algorithm. This algorithm is probably the most critical part of the game as it embodies various statements in a procedural form and it's therefore worth explaining in detail.

A supply crisis in *Oiligarchy* can occur as a result of resource depletion, bad management or political reasons and the systems can react in three different ways:

1. Somebody in the government proposes a bill that tackles the issue. Oil-unfriendly Acts can introduce taxes on gasoline, energy efficiency measures, subsidies to public transportation and so on. Oil-unfriendly Acts generally tend to moderate the demand by reducing the oil addiction. The probability for these types of acts to be approved depends on the government "oiliness." With a fully "oiled" government all the "good" acts are basically blocked; with a fully green government, every year of crisis, a new act should be approved. Every act has a degree of "boldness" that also plays a part in the approval. For instance, an act that promotes electric cars is bolder and less likely to be approved by an ideologically mixed administration than an act which simply reduces speed limits to save gas.
2. If the bill is not approved or the act is not sufficient to solve the oil deficit, the government popularity decreases. The social body tries to react with grassroots initiatives and lifestyle choices such as encouraging biking, carpooling or reducing consumption. These initiatives are more likely to happen if the society has a high level of environmental awareness ("greenness").
3. If, at this point, the demand still exceeds the offer, oil prices and "greenness" rise as the environmentalists have more arguments on their side. When the prices become dramatically high, they may trigger catastrophic events, which generally reduce the GDP. Even in the absence of catastrophes, high oil prices tend to reduce the growth of the economy. After a crisis, oil prices will gradually recover to the previous stable value.

## **8.5 Politics**

Affecting politics is the key to being a successful manager in *Oiligarchy*. The

player is encouraged to keep the government “oiled” by playing the “democracy” mini-game that occurs every 10 years (a 4 year term would have been too disruptive to the main game flow). The democracy mini-game refers to a type of election race, but it does not try to simulate the complexities of the electoral process. The donations during the race are meant to be seen as a representation of the corporate influence on politics in a broader sense, including lobbying, revolving doors and so on. The depiction of the two parties as interchangeable, bulimic, money-burning machines is both a satire of the overstated spectacle of the U.S. presidential campaign and an ironic response to the so-called “political games” simulations of the presidential campaigns that reinforce the widespread deceptive equation: politics=elections. The ability of the player to affect the election outcome is very limited, but his donations have a fundamental influence on the policies of the future administration.

As a part of the satire, the two parties have no ideological features, in other words the Republican Party is not intrinsically more inclined to help the oil industry than the Democratic Party, since by looking at electoral funding by industry you can notice a general preference for the Republican Party but oil and gas industries are not amongst the most partisan industries (Center for responsive politics 2009). Therefore, the experienced player would simply choose to “bet” on the winning party to obtain the most influence according to the model proposed by the economist Steven Levitt (Levitt 1994).

As a function of the result of the elections and the donations to the two parties, the government (a stylized rendition that summarizes the many institutions in a 10 people congress) will be composed by three categories of representatives:

- Oiled: representatives that will vote for oil-friendly bills (see oil-friendly acts) every year and oppose the oil-unfriendly bills.
- Green: representatives that will vote for oil-unfriendly acts in case of supply crisis.

- Gray: representatives that will vote for both kinds of bills with a probability of 50%.

The number of green representatives is directly related to greenness. As environmental awareness emerges (due to global warming or oil crisis), the green representatives will substitute the gray ones.

Big and “wise” donations can affect politics to elect an oil-friendly president. This will grant the player the possibility to access the secret underground room (a reference to the presidential cabinet and the Pentagon) and trigger “Special Operations.” Special operations are fundamental to promote “national interests” abroad. For instance, they will allow the player to invade Iraq and unblock its resources or to prevent or counter a potential nationalization of the industry in Venezuela.

## **8.6 Pseudo History and Futurology**

*Oiligarchy* is an ambitious game: it tries to describe how the U.S.A. became addicted to oil; how it could have been different; and how a successful or a failed transition to a post-carbon society would look. I chose to start from the aftermath of WWII; this period is arguably the beginning of the golden age of oil from the combined effect of the green revolution (Spitz 1987), the rise in car culture and suburbanization (Kay 1998). Since the game’s statement revolves around the major role of the oil industry in shaping the world we live in, I had to give the player the possibility to affect history. At the same time, I wanted to provide some incentives to retrace the events as they actually happened to stimulate a critical reading of history. I tried to resolve the conflict between the game as a device for describing “what if” scenarios and the game as informative media, through design choices I could define as pseudo-historical.

*Oiligarchy* pseudo-history is based on a procedural interpretation of the past. In-game events do not occur on a certain year because that is what happened in reality, but

they are entangled in a web of cause and effect relations. Every event is enabled by certain conditions (game variables, players' actions or other events) and produces certain effects. Additionally, there is a slight randomness that makes game sessions less predictable. Some events that are likely to happen in the post-peak oil phase are based on predictions formulated in recent years by depletionists and climate change activists. I included some heavy handed satirical additions, such as the invention of human burning plants for energy production.

### **8.7 Challenging Meaningful Play**

The contemporary science of game design revolves around the idea of meaningful play. According to Salen and Zimmerman (Salen and Zimmerman 2003), players should be given opportunities to take non-random actions and make decisions that have an immediately clear and integrated (makes "big-picture" sense) effect on the game.

Meaningful game systems are elegant, appealing, easy to understand and internally consistent. Unfortunately, such kinds of games may be inappropriate to describe systems that are inelegant, unappealing, obscure and contradictory like the free market capitalism that is destroying the world.

*Oiligarchy* is full of broken connections, meaningless interaction, inverted rewards and randomness. The money factor is central at the very beginning, but quickly becomes totally ignorable as the player's profit skyrockets. The administration's popularity represented by the demonstrators in Washington is presented as a sort of punishment or a bad performance warning, but it does not meaningfully affect the player's routines since, in the eyes of the oiligarch, the parties are interchangeable. In the late stages of the game, donating money to the parties may be a counter-productive habit because there are no more oil-friendly acts left and the prices are rising anyway. Hanging Nigerian activists actually radicalizes the tension, but it is an implicit rule that most of the players may

never get. And, above all, the very same goal of the game becomes quite blurred after the peak.

## 8.8 Game Over?

*Oiligarchy* has four possible endings. In the pre-peak phase the player can be fired for bad management if the demands exceed the offer for too many years. That is an implementation of the free competition mode of production. Competition is not directly simulated for the simple reason that it never played a major role in the history of oil industry, nevertheless, if the player tries to create too much artificial scarcity or refuses the expansion imperative he/she will be kicked out of the market.

The hardcore gamer will probably see the Mutually Assured Destruction ending that represents the failed transition to a post-carbon society. This global nuclear war scenario happens when the oil prices reach the ceiling of \$300 per barrel and it is usually the result of aggressive and persistent efforts to control the government. By buying off the politicians, the player essentially introduces rigidity in the system and prevents a harmonic rearrangement of the society.

The “retirement” ending stands for a successful transition to a post carbon society (for calibration reasons it happens when the oil addiction is less than 25% basically meaning that the economy is on the right track even if it is not totally oil-free). Retirement usually happens when the player loosens the grip on politics around, or after the peak oil. It is basically the happy ending, though it can only be reached after some major catastrophes.

This is basically an implementation of my conclusions and hopes. In brief, I believe that the dependency on oil can be solved by a combination of different approaches:

- A series of top-down, government-lead structural policies ranging from supporting renewable energies to nation-wide infrastructural rearrangement.
- A proliferation of bottom-top, more or less organized initiatives promoting alternative lifestyles such as the rejection of consumerism, promotion of bike transportation and organic, locally grown farming.
- A substantial downsizing of the economy on the whole and the overcoming of the GDP growth imperative.

The fourth possible ending is titled “Farewell West” and represents a mildly dystopian collapse of western civilization as we know it. It occurs when the GDP goes below a certain level, three times the initial value. Apparently the fourth ending never occurred to anyone and may be actually impossible to reach.

At the end of the day, good gamers tend to get rich and blow up the world while the bad, lazy or non-competitive gamers may reach a less tragic end. The debasement and relativization of the binary win/lose formula seems to be the most shocking part for the habitual gamers who have played *Oiligarchy*. The users’ feedback shows how the players are struggling to negotiate between the ambiguous reward and punishment system and the conventions they learned from traditional strategy/business games. Many players posted successful tips for reaching the dystopian scenario with the most money, others proposed counter-strategies about how to get to the happy ending. Some people argued that the best way to “beat” the game is to avoid any imperialist activities, while others suggested building as many human burning plants as possible. In conclusion, the kind of disorientation created in *Oiligarchy* leads players to ask many open, moral questions; this outcome is the biggest accomplishment of the game.



Figure 15 – *Oligarchy*. Alaska scenario: oil platform and seismic exploration.

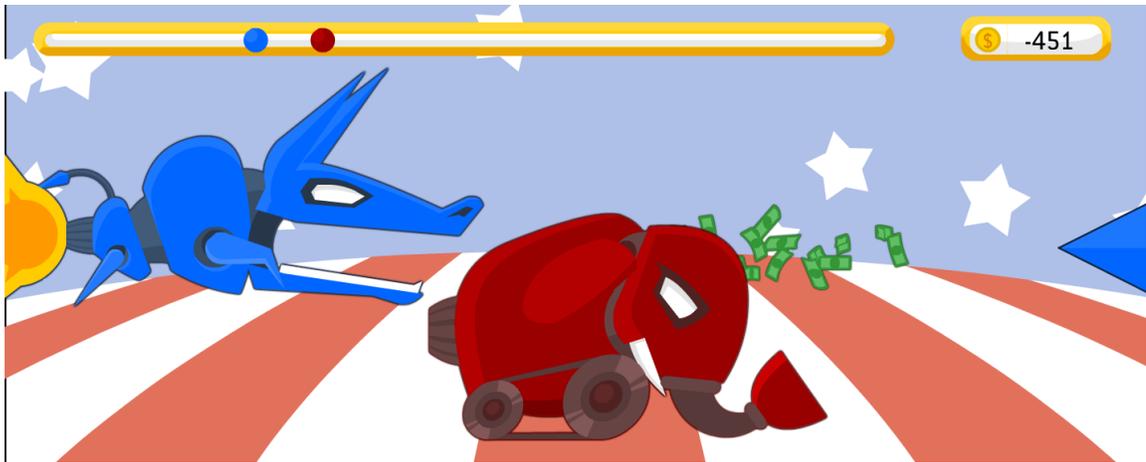


Figure 16 – *Oligarchy*. Democracy minigame: the player feed the racing robots with money.

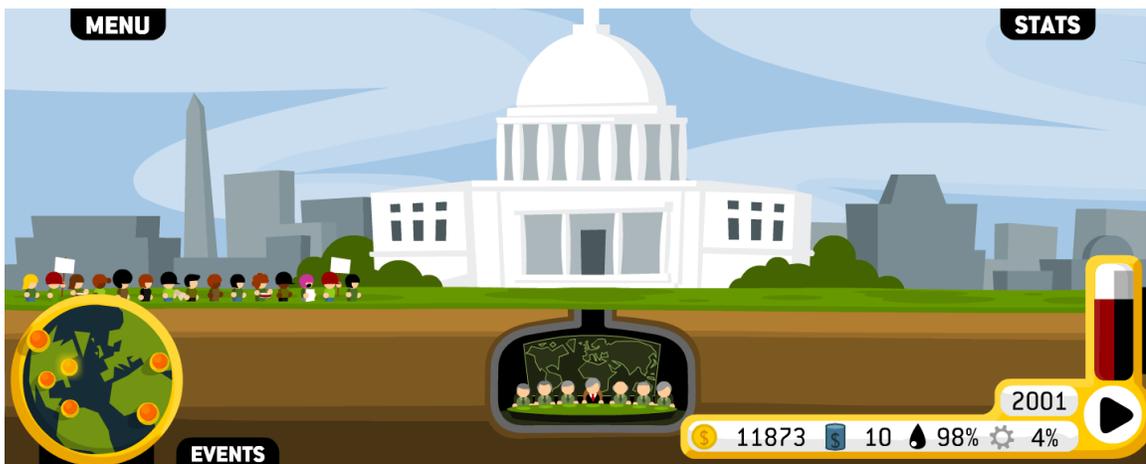


Figure 17 – *Oligarchy*. Washington: demonstration in front of the congress and secret operation bunker.

## CONCLUSIONS

In this paper I tried to define modes of intervention that artists or activists can use to confront the video game universe. In my view, the role of the “critical game designer” is to juxtapose alternative views and alternative models to mainstream products in order to highlight their biases. Proposing overtly politicized games is not just an attempt to pursue a specific communication agenda, but also, and more importantly, a proactive form of new media literacy. Demystifying the supposed political neutrality of off-the-shelves games is as important as spreading alternative messages. Games can be powerful representational media as they can visualize forces in action and complex webs of interdependency, but we need a multiplication of models - 10, 100, 1000 different kinds of *SimCity* - to describe what is removed in the everyday monologue of capital. We need broken systems and unplayable games to describe our dysfunctional institutions. And, above all, we need games that can work as imaginative devices: maps for territories that don't exist yet, dynamic visions of future, playable utopias.

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