

Being Virtual: Embodiment and Experience in Interactive Computer Game Play

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Declaration

My signature certifies that this thesis represents my own original work, the results of my own original research, and that I have clearly cited all sources and that this work has not been submitted for any other degree or professional qualification except as specified.

Hanna Mathilde Sommerseth

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Abstract

This thesis argues that the notion of player experience in relation to computer games is intrinsically linked to the body. Taking the idea of aesthetic experience, or sensuous experience, in computer game play as its starting point, my thesis considers computer games from within an interdisciplinary cross section of phenomenology, cultural studies and visual culture. Computer games have in a reasonably short amount of time reached a stage where they are an integral part of contemporary society: historically, economically and culturally. The current field of computer games comprises a vast array of genres, styles, stories, experiments and media. Because computer games are interactive objects, I argue that an analysis should begin with a discussion of player experience, and that this experience is inherently embodied. The embodied and temporal nature of game play means it is problematic to simply transfer established frameworks of meaning making in other audiovisual media onto computer games. The thesis attempts to understand the notion of player experience through a phenomenological reading of the interactive experience, and as such I argue that the individual, temporal and iterative aspect of this experience means computer games should not necessarily be squeezed into already established categories of earlier forms of entertainment media. Through three main chapters I explore the role of the body and embodied experience from three different points of view, roughly divided into the three aspects that make up the feedback loop of game play; hardware, software and interface. Each chapter considers the unique role and importance of the body at each point in the game play process.

Contents

Table of Contents

Introductory Chapter – The Medium of the Computer Game.....	9
<i>An anecdote.....</i>	9
<i>The culture of computer games.....</i>	11
<i>A history of computer games.....</i>	19
<i>The art of computer games.....</i>	22
<i>The problem with interactivity.....</i>	28
<i>The experience of computer games.....</i>	31
<i>A question regarding reality.....</i>	39
<i>Thesis outline.....</i>	41
Chapter 1 – Studying Computer Games.....	47
<i>Game Studies.....</i>	49
<i>A snapshot of an emerging field.....</i>	55
<i>Defining play and games.....</i>	60
<i>Player experience.....</i>	66
<i>Phenomenology and computer games.....</i>	70
<i>Theorising the Virtual.....</i>	78
Chapter 2 – The Body as Hardware.....	84
<i>Rez -immersion and interactivity.....</i>	86
<i>Virtual Reality.....</i>	94
<i>The Senses.....</i>	97
<i>Virtual Experiences.....</i>	101
<i>The cyborg player.....</i>	108
<i>Summary: the body as hardware.....</i>	117
Chapter 3 – The Body as Software.....	121

<i>The Active player</i>	123
<i>The Player as Actor</i>	131
<i>Player, perspective and body</i>	138
<i>Avatar and identity</i>	145
<i>Summary: The body as software</i>	153
Chapter 4 – Virtual environments and embodied experience.....	156
<i>The Computer Medium</i>	159
<i>Image and illusion</i>	162
<i>Physics and behaviour</i>	169
<i>Simulation and representation</i>	176
<i>Computer Game Space</i>	181
<i>Summary: The body in virtual space</i>	190
Concluding Chapter - Questioning Embodiment.....	193
<i>The recurrent question: But Is It Art?</i>	196
<i>What is a game?</i>	203
<i>The problem regarding 'the body'</i>	210
<i>Summary: Being Virtual: Embodiment and Experience in Interactive Computer Game Play</i>	216
Bibliography.....	220
Websites.....	231
List of Games.....	234

Frames

<i>The final image after end credits of The adventures of Lolo 2. Two blobs watching the sunset.....</i>	<i>10</i>
<i>My Boyfriend Came Back from the War. Early html-based net.art by Olia Lialina...</i>	<i>25</i>
<i>wwwwwwwww.jodi.org Above: sourcecode. Below: interface.....</i>	<i>26</i>
<i>A game of chess. Chess pieces as aesthetic objects.</i>	<i>37</i>
<i>A second game of chess. Chess pieces as generic possibilities, waiting for the actual game to start.....</i>	<i>37</i>
<i>Screenshot from fLOW. A game created as an illustration of an idea.</i>	<i>69</i>
<i>Screenshot from Rez. Abstract, simple wireframe graphics.....</i>	<i>88</i>
<i>Rez -Dedicated to the greative genius that was Wassily Kandinsky.....</i>	<i>90</i>
<i>Above: Screenshot from Rez. Below: Kandinsky's Composition 8.....</i>	<i>91</i>
<i>Who is playing who? Screenshot from the final battle in Rez.</i>	<i>93</i>
<i>The Telegarden allowed anyone with a modem to become a virtual gardener.....</i>	<i>111</i>
<i>Nintendo's Touch! Generations advertising campaign for the Nintendo DS console.</i>	<i>113</i>
<i>Theme Song by Vito Acconci. Who is watching who?.....</i>	<i>123</i>
<i>Conversation with the Executor in Pathologic. The opening conversation sets the stage and informs the actor of what to do.....</i>	<i>134</i>
<i>A classic First-PersonShooter view. Screenshot from Half-Life 2.....</i>	<i>139</i>
<i>Screenshot from Façade. Subverting conventions with a wine glass.....</i>	<i>139</i>

<i>Simulating the city: NYC vs. Grand Theft Auto IV's Liberty City. Photo courtesy of Matthew Johnston and Flickr.....</i>	<i>157</i>
<i>Crysis. On release only the most advanced graphics cards were able to display the graphics of near-photorealistic quality.....</i>	<i>164</i>
<i>Super Mario jumping. The look of the 80s, screenshot from Super Mario Bros.....</i>	<i>186</i>
<i>Super Mario jumping. The look of the 00s, screenshot from Super Mario Galaxy..</i>	<i>187</i>
<i>Super Columbine Massacre Role Playing Game. Pushing games in new directions.</i>	<i>197</i>
<i>Attempts at questioning and meaning-making in the Super Columbine Massacre Role Playing Game.....</i>	<i>198</i>
<i>Scott McCloud separates form from content in the graphic novel medium. Can the same be said for game theorists?.....</i>	<i>200</i>
<i>September 12th. A small and simple flash game with a big message.....</i>	<i>202</i>

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Introductory Chapter – The Medium of the Computer Game

The persistence of games is remarkable. Empires and institutions may disappear, but games survive with the same rules and sometimes even the same paraphernalia. The chief reason is that they are not important and possess the permanence of the insignificant.

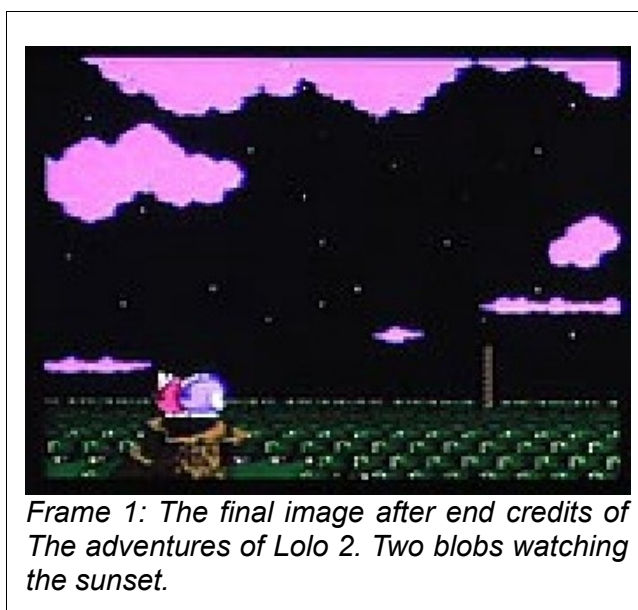
Roger Caillois

An anecdote

I was 10 years old when I got my first computer game console. It was the Nintendo Entertainment System (NES), bought after months of saving up pocket money. I would play games like *Super Mario 3*, *The Legend of Zelda* and *Solomon's Key*, frantically pushing the buttons on the square little plastic controller until my thumbs were close to bleeding –a phenomenon well known to other children of the NES generation. One autumn, I, my younger brother and our mother began playing a fairly unknown game together, called *The Adventures of Lolo 2*. It was a straightforward puzzle game, with a rather standard plot attached. A blue pixelated blob with eyes and legs called Lolo had to quest through a tower in order to reach the top where a monster had imprisoned his girlfriend, a pink pixelated blob with eyes and legs called Lala. In order to get through each floor of the tower to reach the top, Lolo had to overcome different puzzles that would increase in difficulty as he got closer to Lala. It was a very slow and contemplative game, allowing the player as

much time as she liked in thinking of solutions to each puzzle, which is probably why my mother liked it. We spent months playing together, working out different resolutions. One night I was woken up by my mother around 4am and told to come down to the living room. She had stayed up all night and had completed the last puzzle. As we watched the end credits of the game roll over an image of Lolo and Lala standing together under a garish 8-bit coloured and heavily pixelated sunset, cheap MIDI music playing in the background, I noticed my mother was crying.

At the 4th Edinburgh Interactive Entertainment Festival (EIEF) in August 2006, Margaret Robertson, then editor of Edge magazine, gave a talk titled “Games That Make You Cry”. She wanted to quash the long-standing myth pervading the industry



that “games are not art because they cannot make you cry”¹. Referring to titles like *Final Fantasy VII*, *Ouendan* and *Zelda: Majora’s Mask*, Robertson gave a number of different reasons why computer games were capable of arousing strong emotional responses such as making one cry. I didn’t need convincing. I always knew they could.

¹ The EIEF 2006 conference programme is now offline, but Robertson's talk can be found as a transcript on her personal homepage. See <http://lookspring.co.uk/writing/games-that-make-me-cry> (accessed 03/01/10).

The culture of computer games

Is it necessary to justify writing a thesis on computer games? Perhaps it should not be, if we look at current statistics concerning the status and place of computer games within society. Recent figures state that the computer games industry has surpassed the music industry in terms of revenue.² There is evidence that games are increasingly becoming accepted as a form of entertainment along the same lines as television and cinema. The average age of gamers continues to rise³, most broadsheet newspapers feature pages containing game reviews and features alongside their literature, theatre, music and film pages, and there is now a computer game section of the BAFTA (British Academy of Film and Television Arts) award. The latter is “committed to the development of the contemporary art form of video games, and to lending equal weight to its British Academy Video Games Awards as that given to film and television.”⁴

Yet despite statistics suggesting otherwise, the popular view of computer game culture often remains that of a subculture belonging to spotty teenage boys, at best a massive waste of time and at worst a potentially dangerous and soul-destroying activity. In 2005 US senator Hillary Clinton became the latest high-profile person to publicly condemn computer games for “...stealing the innocence of our children and...making the difficult job of being a parent even harder ... I believe that the ability of our children to access pornographic and outrageously violent material

² MCV, “It’s official: games revenues overtake music at retail”, *MCV Online* 03/03/08 <http://www.mcvuk.com/news/29787/Its-official-games-revenues-overtake-music-at-retail> (accessed 03/01/10).

³ According to research by the Entertainment Software Association (ESA), the average age of game players in 2006 was 33. See Gamasutra, “ESA Stats: average US gamer 33 years old”, *Gamasutra Online* 17/05/06 http://www.gamasutra.com/php-bin/news_index.php?story=9342 (accessed 03/01/10).

⁴ Quote taken from the BAFTA website: <http://www.bafta.org/site/page20.html> (accessed 08/07/07, no longer online).

on video games rated for adults is spiraling [sic] out of control."⁵ In July 2006 the first computer game addiction clinic opened in Amsterdam, although its founders have since stated that they do not believe 'addiction' is an appropriate term to use in conjunction with excessive computer game play.⁶ In June 2007, the game *Manhunt 2* became the first game in over a decade to be banned from release in the UK by the BBFC (British Board of Film Classification) on the grounds of extreme and gratuitous violence.

Computer games occupy a paradoxical place in culture. First, they represent the 'cutting edge' of digital media technology. The gaming industry's obsession with graphic quality in computer games and the desire to create "photorealistic" gaming experiences mean computer games are constantly pushing the boundaries of computing technology. The huge commercial success and revenue generated by a number of games and game franchises allows certain game developers to invest in new technologies and research into artificial intelligence as well as graphics and physics simulation far surpassing any academic venture. As objects of the new media era, games occupy a certain utopian and unnerving place in culture as 'reality simulators', the closest contemporary everyday culture comes to the idea of virtual reality or 'the matrix', as envisioned in numerous science fiction works.

Second, computer games are part of a larger audiovisual entertainment culture, drawing upon and developing the conventions of the cinematic image, theatre and photography. As Marshall McLuhan noted in *Understanding Media*, the content of a medium is always another medium⁷, and as both mimetic and fantastic

⁵ Tom Standage, "The Culture War", *Wired Magazine*, issue 14.04. Available online: <http://www.wired.com/wired/archive/14.04/war.html> (accessed 03/01/10).

⁶ BBC News, "Compulsive gamers 'not addicts'" *BBC News Online* 25.11.08 <http://news.bbc.co.uk/1/hi/technology/7746471.stm> (accessed 03/01/10).

⁷ Marshall McLuhan, *Understanding Media, The Extensions of Man* (Massachusetts: MIT Press,

representations of this and other worlds, computer games draw upon the conventions and traditions of media like film, visual art, and literature, raising the same questions concerning representations of gender, race, class and power that academic disciplines like cultural studies have been asking since the mid-20th century. Humanistic scholarship has only just begun to discuss the narrative, symbolic and expressive qualities and potentials of the computer game medium, a difficult task in a field that changes rapidly with the development of new technology.

Third, as the name suggests, computer games belong to a tradition as old as humanity itself –namely play. When discussing the merits and moral panics of digital technology and digital simulation, it is easy to forget that games initially were, and still mostly are, objects to play with. Collecting high scores, solving puzzles and feeling the satisfaction of beating your opponent, whether another player or the computer itself, remains to many the main attraction of any computer game. Games are structured by rules, targets and goals. A number of the most well known and popular computer games today are simply computerised versions of older games, such as *Solitaire* and *Pong*.

Of course, none of the points made here can be said to apply to *all* computer games, all the time. Not all computer games are photorealistic reality simulators, not all games are focused on winning or reaching a goal, not all games have narrative elements. And the realm of computer games is steadily expanding. MMORPG's (Massive Multiplayer Online Role Playing Games) are becoming increasingly popular. *World of Warcraft*, currently the most popular online game, claims to have more than 11 million subscribers worldwide⁸, and the social networking/computer

1994), 8.

⁸ Robin Wauters, "World of Warcraft hit 11 Million Subscribers Mark, Shows Signs of Slowing"

game hybrid *Second Life* recently saw its number of registered inhabitants pass the 3 million mark⁹, although there are some questions regarding how many of these registered users actually return and use the space on a regular basis. In addition, the market for what is labelled “casual games”, from the *Minesweeper* and *Solitaire* type of games that ship with a number of operating systems, to freely available online games, often reiterations of famous games like *Pac Man* and *Space Invaders*, is expanding fast. This expansion is also thanks to the Nintendo Wii console, released in late 2006, which has seen the demographic of computer game console players broaden dramatically.¹⁰ From the point of view of my own thesis here, the release of the Wii console is particularly interesting, as its intuitive gameplay mechanisms are highly relevant to the arguments I propose throughout. I discuss the Wii console at some length in chapter 2.

In one respect computer games differ vastly from other entertainment media. Books have remained reasonably constant since the invention of the printing press – they consist of text on pages. There may have been changes to the quality of paper, to the size and portability of books, as well as to the technology of printing itself, but books remain essentially the same medium. Cinema has gone through certain profound changes, most notably from silent to sound, and from monochrome to Technicolor. The current prolonged change from analogue to digital presents increasing opportunities for spectacle and effects, and interest in 3D viewing

TechCrunch 29/10/08 <http://www.techcrunch.com/2008/10/29/world-of-warcraft-hits-11-million-subscribers-mark-shows-signs-of-slowng/> (accessed 04/01/10).

⁹ [Michael Arrington, “The Second Life Census”, TechCrunch 10/02/07 http://www.techcrunch.com/2007/02/10/second-life-census/](http://www.techcrunch.com/2007/02/10/second-life-census/) (accessed 04/01/10).

¹⁰ Scott Anthony, “Nintendo Wii’s Growing Market of ‘Nonconsumers’”, *Harvard Business Review Online* 30/04/08 http://blogs.harvardbusiness.org/anthony/2008/04/nintendo_wiis_growing_market_o.html (accessed 04/01/10).

experiences are making a comeback with recent films such as *Beowulf* (2007) and *Journey to the Centre of the Earth* (2008). Yet the cinema medium remains that of moving images presented on a screen. Computer games, however, have gone through a series of profound changes in a very short timespan. Modern computer games can be played on personal computers, on television-linked consoles, on hand-held consoles, on mobile phones, and in arcades. They can be played using joysticks, button-controllers, motion-sensitive controls and touch pads. Each variation presents a different experience of the game being played. Additionally, the number of genres found under the term “computer games” is vast, ranging from abstract puzzles like the classic *Tetris*, to “God-simulators” like *The Sims* and *Civilization*, “platformers” like *Super Mario Brothers*, first-person-shooters like *Doom* and “sandbox” open-worlds like *Grand Theft Auto*. What they share is their reliance on a computer, on a central processing unit, and their status as digital bits.

Whereas the technology for producing books and films has changed over the centuries, the interface of the book and the film has essentially remained the same. In contrast, with regards to the computer game, the basic technology of the digital computer has remained the same, whereas the interface has gone through a number of changes. Similarly, literature and cinema both belong to the wider categories of print and moving images respectively. These categories encompass a wide variety of media and genres, from magazines, instruction-manuals and novels to documentaries, feature films and television news features. These media have in common their technological basis, but little else. They are media that owe their existence to the printing press and the camera respectively. Perhaps, then, it may be possible to talk of a category of 'interactive images', that owe their existence to the

invention of the computer. 'Computer games' may be a subset of this category, but not necessarily its definition, as *games* have existed long before the advent of the computer. Many of these pre-electronic-era games are being recreated and re-imagined in the electronic form; solitaire and chess being examples of one type of gaming and football and formula 1 driving another. There also exist new genres within the computer game medium that are entirely reliant on the computer for their existence, of which the first-person-shooter genre, encompassing games like *Half-Life* and *Halo*, is perhaps the most popular. In addition, there are objects currently being placed under the umbrella term of 'computer games' that, on closer inspection, do not appear to be games at all, if the purpose of a game is to achieve a goal by overcoming a number of obstacles. *Electroplankton*, the music making tool released for the Nintendo DS in 2006 and *Second Life*, the online social networking virtual world, are recent well known examples. The various genres, styles and techniques found in computer games are a component of the historical maturation, complexity and diversification of the computer game as a medium, and pose a number of challenges to the academic study of games, especially around questions of text, work, style and genre.

Although sports simulators, sci-fi and fantasy games, and first-person-shooters remain the most popular games in terms of distribution and sales, new computer games experimenting with genre and play conventions are released on a regular basis. Some of the more exploratory computer games to come out recently include the above mentioned *Electroplankton*, for the Nintendo DS console, *Dr. Kawashima's Brain Training: How Old Is Your Brain?*, also for the Nintendo DS, and *Lumines*, for the PlayStation Portable (PSP) system. *Electroplankton*, created by

Japanese interactive media artist Toshio Iwai, is a game in which the player interacts with animated “plankton”, in order to create music¹¹. In *Brain Training* players perform memory, reading and arithmetic tasks in order to obtain an ideal “brain age” of 20. The game is aimed at older generations, and has been advertised internationally with a series of television commercials featuring world-famous stars such as Nicole Kidman. *Lumines*, by famous game designer Tetsuya Mizuguchi, is a puzzle game in the same tradition as *Tetris*, but based on sound and light patterns.

Beyond traditional games of the 'button pushing' kind, the rapid spread of new media technology in recent years has also led to the development of 'pervasive games'. A pervasive game is a game embedded in the physical ('real') world. Whereas customarily games exist in their own pre-defined space, often referred to as within a 'magic circle', an expression first put forward by Johan Huizinga¹², whether on a board, on a field or through a digital console, pervasive games use the spaces of everyday private and public life as their stage. The genre is also known as 'alternate reality games' (ARG), and has gained in popularity and prominence throughout the past decade as communication and information technologies have become increasingly ubiquitous. Pervasive games will often be played through mobile phones, via email, and on the internet. They can be ephemeral, existing on the web only, or embedded to a specific place.

The emphasis on the diversity and experimental nature of the medium should not take away from the fact that some of the best known computer games and most

¹¹ Some have argued that the *Electroplankton* software is a toy, not a video game, as there is no objective beyond making sound, no score, nothing to win. This argument again emphasises the confusion around what constitutes a “video game”. Similarly, well-known brands in the field electronic music production such as Korg have launched synthesisers that run on the Nintendo DS hardware for the purpose of music-making, further complicating the boundaries of what constitutes a 'game'.

¹² Johan Huizinga, *Homo Ludens* (Boston: Beacon Press, 1992).

notorious games themselves should be of great interest to the cultural critic. The *Grand Theft Auto* series, for instance, offer a much more complex set of entertainment channels than might be apparent at first glance. The series have, since the first game was released, become one of the most well known and infamous computer games series ever. The theme of the series has remained the same throughout: the player moves around a city environment, performing various, usually criminal, tasks for a number of shady characters, in order to rise to the top in the criminal underworld of each city. The series take its name from the fact that the player is able to hijack cars and use them to move around with. A substantial amount has been written about the moral and ethical implications of the series¹³, and the games are often presented as evidence of the depravity of computer games by campaigners worried about the effects playing might have, especially on children. Despite this, the *GTA* series is also highly acclaimed among players and the industry for its advanced gameplay, social and cultural satire and level of environmental design details.

In addition to the commercial development industry, there exists a thriving independent game development scene. Using the continuing spread of internet connectivity and the possibilities inherent within increasing bandwidth and speed, independent developers have ever-better opportunities for global distribution of their products. Sometimes these games surface in mainstream waters, as was the case with the controversial *Super Columbine Massacre RPG* shortlisted for the 2007 Slamdance Festival independent games awards. Although the game was eventually

¹³ See Lawrence Kutner and Cheryl Olson, *Grand Theft Childhood: The Surprising Truth about Violent Video Games and What Parents Can Do* (New York: Simon and Schuster, 2008) and Nate Garrelts, *The Meaning and Culture of "Grand Theft Auto": Critical Essays* (North Carolina: McFarland & Co, 2006).

withdrawn from the competition, it garnered a large amount of speculation, both academic and journalistic, on the artistic and expressive merits of the computer game medium. More recently, the independently developed game *Braid* succeeded in attracting a substantial enough amount of critical acclaim to reach a mainstream audience on the Xbox Live online space.¹⁴ These games, as well as a number of others, exemplify the wide range of different genres and styles the field of computer games has come to encompass since the first pixelated spaceships were developed nearly half a century ago. Let me briefly consider this history before moving on to considering the relationship between culture, art and the computer game.

A history of computer games

Computer games have reached a ubiquitous place in culture in an extraordinarily brief amount of time. As with all histories, determining the “beginning” of the computer game is problematic, as the number of games claiming the title of 'first computer game' testifies. J.C. Hertz lists *Spacewar*, created by Steve Russell at MIT in 1962, as the first ever computer game¹⁵, while Mark J. P. Wolf chooses to begin his story of computer games with *Computer Space*, the first commercial computer game, created by Nolan Bushnell in 1971¹⁶. James Newman, in his summary of the field, alludes to the oft-made claim that the 1958 game *Tennis for Two*, by Willy Higinbotham, is the true original computer game¹⁷. In 1948 a patent

¹⁴ 'Xbox Live' is the console's internet-connected online space where players can connect, play multi-player versions of games, collect and display scores and download games, demonstrations of upcoming games, as well as individual game content.

¹⁵ J. C. Hertz, *Joystick Nation* (London: Abacus, 1997), 5.

¹⁶ Mark J. P. Wolf, *The Medium of the Video Game* (Texas: The University of Texas Press), 1.

¹⁷ James Newman, *Videogames* London: Routledge, 2004), 1.

for a 'Cathode Ray Amusement Device' was patented by Thomas T. Goldsmith Jr. and Estle Ray Mann¹⁸. At the time of writing, the online encyclopaedia Wikipedia names this as the first ever computer game in its entry on the history of games¹⁹.

Despite the inability to pin down a material starting point in which the computer game medium 'began', it is clear that it is a young medium, little older than half a century. Nevertheless, it has seen a growth and gone through changes that would fill numerous volumes. The history of computer games has been described in detail elsewhere²⁰, and consists of a complicated mix of economics and culture, from the "golden era" of coin-operated arcade games in the 1970s to current-day home consoles that are often more powerful than any regular home PC, tied in with the rise of consumer culture and an ever-present moral panic over the detrimental effects games may have on those who play them. Computer games are of course intrinsically bound up with the development of computer technology, both software and hardware, and as games have increased in popularity, it is not always clear whether the computer hardware industry drives the production of computer games, or vice versa.

As their popularity has increased, games have also become tied in more and more with the general entertainment industry. Adaptations of popular films into computer games have existed for decades, often allowing the player to take on the role of a much-loved character in popular culture. In more recent years, however, the expanding influence of computer games is manifest in the fact that games are being

¹⁸ See US patent US2455992 (A), available online at <http://v3.espacenet.com/publicationDetails/biblio?CC=US&NR=2455992&KC=&FT=E> , accessed 03/06/2010 .

¹⁹ Wikipedia, entry: "*history of video games*" http://en.wikipedia.org/wiki/History_of_video_games (accessed 04/01/10).

²⁰ See Hertz, *Joystick Nation*, Newman, *Videogames*, and also Steven Poole, *Trigger Happy: Videogames and the Entertainment Revolution* (New York: Arcade Publishing, 2004).

adapted into films on an increasing basis, as the popular *Tomb Raider* films starring Angelina Jolie exemplify. In addition, big-budget Hollywood media franchises are using film and games to compliment each other, as was the case with the Warchowski brothers' popular *Matrix* trilogy which in 2003 released a computer game, *Enter the Matrix*, to reveal new stories, tie up loose ends from the films, and further explain the plot. Also, as film producers are realising that the computer game may well be more profitable than film, there is often emphasis laid on the production of entertainment films on game-like elements, to make the adaptation and media crossover easier.²¹

In just half a century, then, computer games have developed into a multi-billion dollar industry able to rival all other entertainment media. The computer game industry has given us seminal games like *Tetris*, *Super Mario Brothers* and *The Sims*, as well known in western culture as any popular Hollywood franchise, and virtual superstars like Sonic the Hedgehog, Mario and Lara Croft. Hertz wrote, in 1997, that “two generations of kids have grown up on five generations of videogames. This is not a small group of people. This is not a subculture. This is 50 million people whose memory and imagination have been colored by Atari, Nintendo, and Sega, the same way that the memory and imagination of previous generations were tinted by television, cinema, and vinyl records”²². A decade later and we can add another two generations of computer games to his statement, as well as another generation of kids.²³ The current state of computer game culture depicts a diverse field which in

²¹ See Henry Jenkins, *Convergence Culture: Where Old and New Media Collide*, (New York: New York University Press, 2008).

²² Hertz, *Joystick Nation*, 1.

²³ Whilst the notion of a 'generation' normally is thought of in terms of ages and social demographics, in the computer game development industry the term has a specific meaning different from this. A “generation”, in computer game terms, is determined by hardware development. Consoles being released around the same time, with approximately the same

terms of market value represents an industry of immense strength, yet exists culturally in somewhat of a contradictory location between niche and mainstream culture.

The art of computer games

With the maturation and prominence of the computer game medium has come the perhaps inevitable questioning of whether or not computer games represent a new artform, or whether they are merely entertainment products of the worst kind, commercial and mass produced objects appealing to the lowest common denominator. It is a complex question that reveals as much about our attitude and understanding of the categories and classification of art as it does of computer games. Despite my introductory anecdote, it is not my intention here to 'prove' that computer games can be 'art'. As Alexander Galloway challenges in the introduction to his collection of essays on game culture: “Our generation needs to shrug off the contributions of those who view this as all so new and shocking. They came from somewhere else and are still slightly unnerved by digital technology. We were born here and love it. Short attention spans, cultural fragmentation, the speeding up of life ... -these are neuroses in the imagination of the doctor, not the life of the patient.”²⁴ Games have a prominent place in contemporary culture, and any academic approach to understanding them should begin with the object itself, as opposed to

specifications, belong to the same generation. As Hertz was writing, the Sony Playstation (1995) and Nintendo 64 (1996) were the top-of-the-range gaming consoles. The sixth-generation was dominated by the Playstation 2 (2000), the Nintendo GameCube (2001) and the Microsoft Xbox (2001). Current video game hardware is considered seventh generation. The Microsoft Xbox 360 was released in November 2005, while the Nintendo Wii was released in December 2006 and the Playstation 3 in November 2006 (Japan and USA) and March 2007 (Europe).

²⁴ Alexander Galloway, *Gaming, Essays On Algorithmic Culture* (Minneapolis: University of Minnesota Press, 2006), p xii.

attempting to place them on a grid of already established artistic and cultural categories. Nevertheless, computer games are objects of expression, storytelling and imagery. Therefore, an understanding of computer games should be informed by the wider world of entertainment media as well as the contemporary realm of digital art and aesthetics in which the medium exists.

There is perhaps a danger in using theories of aesthetics, art and artistic practice to understand a medium that is usually seen as having no artistic value, left out of most discourse on contemporary digital culture and digital art. Any analysis may seem forced and determined to push computer games into a category of 'worthy' cultural production. The sociological and anthropological study of computer games as practices or of the formation of gaming communities and categories of gamer types; the economic and political study of computer game distribution systems and classification system; the scientific study of computer game production and its relationship with wider computer science and research into hardware and software development; there are a range of legitimate and understandable academic responses to the entry of the computer game medium into society. But what about the humanistic study of the textual, visual and philosophical meaning of computer games? Caillois' claim that games are unimportant²⁵ is still one that has a strong hold in contemporary culture. In fact, there is an emerging interest in computer games coming out of cultural studies, film studies and media studies departments, and my thesis aims to add to this growing body of work by examining the specific role of the body in relation to player experience.

Despite the problem of using the notion of 'art' in relation to computer games,

²⁵ Roger Caillois, *Man, Play and Games* (Illinois: University of Illinois Press, 2001) 81

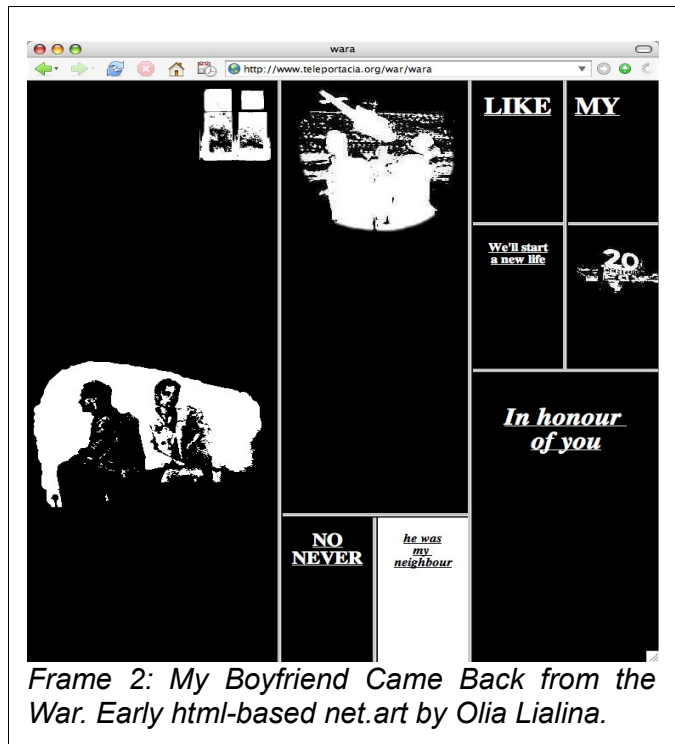
the term nevertheless provides an entry point to the central theme of my thesis. Art does in fact feature frequently as a term in the production of computer games, as well as in wider discourse on their cultural merits, and notably, the focus when the notion of art is used is always on the visual. A computer game artist is someone who creates the graphics for a game, the images a player will encounter on her screen. Nic Kelman's book *Video Game Art* is typical in that it considers the visual, representational art of computer games, placing it within the context of other historical representational art forms.²⁶ The book is full of lavish illustrations of various visual styles, divided into chapters featuring protagonists, environments, antagonists and allies, inanimate objects and imitations of reality. Many of the images are stunningly beautiful. But are games essentially a visual media form? What exactly is the 'art' of computer games? At first glance it appears natural to refer to the surface, or interface, where the game presents itself to the player on the screen as the place where the art of the game occurs. We are after all used to thinking of 'art' in visual terms. Yet, on closer consideration there are two other, related, features that I believe are more appropriate starting points for an enquiry into the aesthetic qualities of computer games, namely their status as software, or as digital electronic objects, and their intrinsic interactivity.

The underlying concerns of this thesis are to a large degree informed by an interest in the art of the digital computer. I began this project believing I would be writing a thesis on the electronic art movements that emerged in the 1990s, often labelled under the moniker of *net.art*. This was work that, in the time-honoured tradition of modernist art, explicitly used the technologies and languages of new

²⁶ Nic Kellman, *Video Game Art* (New York: Assouline, 2005).

media to provide a commentary on its own mode of existence. The name *net.art* was given to this new work after an email sent to the artist Vuc Cosic which had been jumbled to an unrecognisable degree by a technical glitch, the only legible words being 'net.art'.²⁷

The artists usually named in connection with net.art include Olia Lialina, whose html frames-based work *My Boyfriend Came Back From the War* (1996) is an oft-cited early example of net.art. The work is a simple romantic narrative of text and black and white images seen through a number of frames in a browser window, and one



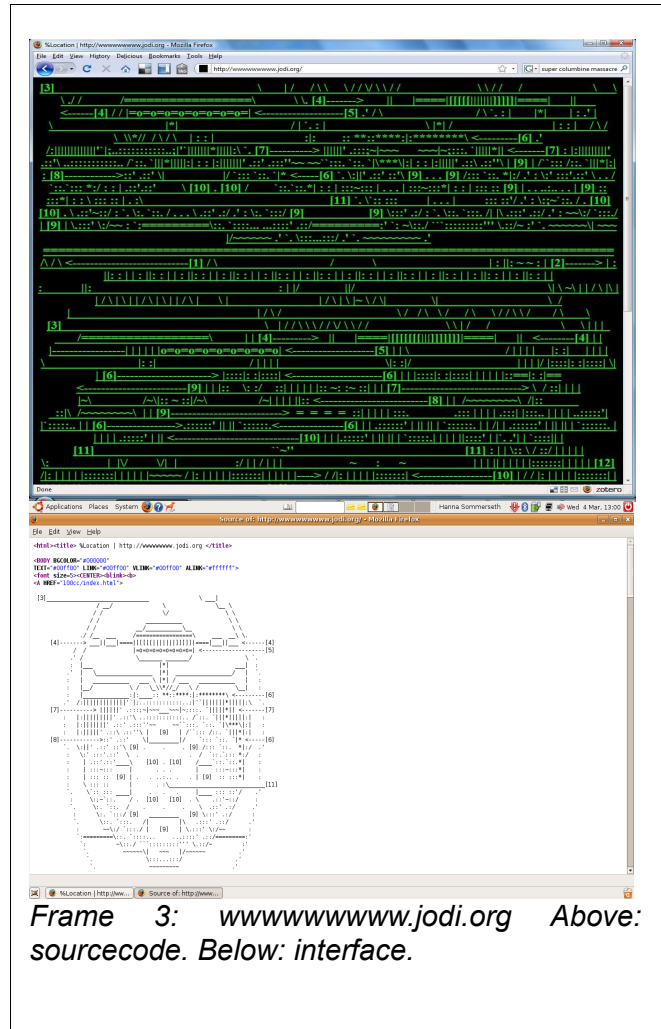
Frame 2: *My Boyfriend Came Back from the War*. Early html-based net.art by Olia Lialina.

of the first works allowing a user to influence the direction of narrative through her choice of links to activate.²⁸ Other notable artists from this period are Alexei Shulgin, Heath Bunting, the aforementioned Cosic and the collaborative Jodi (consisting of artists Joan Heemskerck and Dirk Paesmans).

²⁷ Rachel Greene, *Internet Art* (London: Thames & Hudson, 2004), 55.

²⁸ Ibid, 36.

The main preoccupations of early digital artists were usually the medium itself: experiments with software, code, protocols, operating systems and collaboration. An example is Jodi's <http://www.wwwwwwwww.jodi.org> (1995), a functioning website that when visited appears to be consisting of meaningless green symbols blinking on a black background. Viewing the source code, however, reveals text written to appear as visuals, shaping various machine-like images. Playfully rendering source code in a pictorial way to create an absurd browser-read end result, Jodi's website can be seen as a comment on the layers that exist beyond the visible interface of a computer screen, questioning where the actual core text of the computer object or artwork is located.



Another early example of experimenting with the inherent qualities of digital technology is *The Worlds First Collaborative Sentence*, started by Douglas Davies in 1994.²⁹ Still ongoing, the work consists of text (and later images) contributed by

²⁹ The work can currently be located at online at: <http://artport.whitney.org/collection/davis/Sentence/sentence1.html> (accessed 04/01/10).

numerous anonymous participants, forming a piece of art which Greene labels “polyvocal, international and seemingly endless, the project is often held up as an emblem of internet aesthetics”³⁰. It is an early example of what has become one of the defining features of the new internet era; anonymous contribution, collaboration and creation through random progression.

More recently, net.art and computer games have merged in various forms through hacking, 'modding' (the modification of source code) and machinima, the latter being the art of using footage captured in-game in order to create short animated films. From the original *net.art* movement, Jodi in particular has frequently used computer game source code and computer game graphics in their artwork, most recently in their work *Max Payne Cheats Only* (2006) which featured modified code from the game *Max Payne 2*.

As Lev Manovich argues, the focus on experimentation with the form of the medium echoes the avant-garde art movements that appeared in Europe at the turn of the last century.³¹ Although one should always be careful in drawing historical parallels, there are many similarities between the art movements of the early and late 20th century. Both appear at a time of rapid social and technological change, and are characterised by an interest in the creative medium itself; its formal features and established conventions, and the desire to playfully subvert such features. Also, art in both periods willingly embraces new technologies, whether photography and cinema or software and electronic networks, in order to develop new means of artistic expression. Similarly, an interest in the established realm of art and the explicit goal

³⁰ Greene, *Internet Art*, 31.

³¹ Lev Manovich, “Avant Garde as Software” in *Artnodes E-Journal on Art, Science and Technology* December 2002, <http://www.artnodes.com/eng/art/manovich1002/manovich1002.html?ref=s0d.org> (accessed 04/01/10).

of destroying its foundations can be found both in Dadaist practice and writings as well as in digital artists' focus on the net as a democratic, immaterial space for the creation, dissemination and consumption of art, rendering the sanctioned space of the art gallery unnecessary.

My reason for shifting the focus of this thesis from what has been labelled digital art to the more mainstream entertainment medium of computer games came gradually with the realisation that something I felt was fundamental to the computer was lacking from many of the new artworks emerging, namely interactivity. Standing in a small gallery in north-west Berlin in February 2006, looking at an animation made by Jodi using computer game technology, I realised my inability to interact with the work had fundamentally changed its form and meaning, as well as my experience of it. The experience of interactivity, then, was what made me think that perhaps the computer game, rather than the new medium of digital art, is the most radical and interesting medium to emerge from the computer so far.

The problem with interactivity

It should be noted that interactivity is a complicated term, to an extent so over-used, over-hyped and undefinable that several prominent academics interested in the study of computer games have rejected its use.³² Nevertheless, I believe it is central to an understanding of computer media.

Interactivity as a term in computing originally became associated with the advent of computers which allowed for user input. These computers were in opposition to 'batch' computers, in which only preloaded data would be processed.

³² Espen Aarseth, *Cybertext* (Maryland: Johns Hopkins University Press, 1997), 51.

Recently, however, interactivity has become somewhat of a buzzword in discussions on new and digital media technologies. In popular culture, we hear about interactivity in everything from interactive television and interactive websites to interactive PDA's and interactive MP3 players. Often, the word is associated with and sold as denoting the cutting edge of innovative digital technology by advertisers and companies pushing their new products on consumers. The term interactivity is also frequently used when celebrating the democratic and participatory nature of emerging networked electronic media. The internet is especially lauded as a space where "ordinary people" can speak their minds, publish their creative work and comment on others. The phenomenon of "blogging", the act of keeping an online diary, inviting commentary from anyone who is interested in reading, has become increasingly popular in recent years. Many politicians now have their own blogs, where they can "meet" their constituents, listen to their complaints and advice, and respond (should they wish to do so).

The notion of interactivity is also central to what has been labelled 'Web 2.0', a current buzzword denoting the shift that has taken place in our contemporary media landscape, from consumption-based to participation-based media technologies. The explosion in internet connectivity and bandwidth since the turn of the millennium has been central to this change. Current technologies allow audiences not only to watch, read or listen, but to write, publish, film, upload, comment, compose and create. The desirability of this is debated, from the celebration of participatory media as the ultimate form of democracy³³, to the lamenting that amateur take-over of cultural

³³ See for instance Henry Jenkins and David Thorburn (eds.), *Democracy and New Media* (Massachusetts: MIT Press, 2003).

production signals the end of quality and excellence.³⁴ The interactive, participatory nature of new media is surrounded by a discourse characterised by a large amount of hype, and the long-term impact of these technologies remains to be seen. Also, it should be noted that this changing media landscape is still mostly limited to a small, affluent part of the western world, with the majority of the globe still lacking the technology necessary to take part. Nevertheless, the shift from 'audience' to 'user' is significant. The cultural impact of this shift was reflected by Time Magazine who made their person of the year 2006 'you', arguing that the year had been “a story about community and collaboration on a scale never seen before. It's about the cosmic compendium of knowledge Wikipedia and the million-channel people's network YouTube and the online metropolis MySpace. It's about the many wresting power from the few and helping one another for nothing and how that will not only change the world, but also change the way the world changes.”³⁵

Computer games have also been influenced by the emerging importance of participation. One of the most anticipated games of 2008, *Little Big Planet* for the Playstation 3 console, was characterised by the ability of the player to create her own levels from scratch and share them with other players through the console's online system. Most new games being released now allow players various options for customisation, commonly in terms of the looks and features of their avatars. The 3d social network environment *Second Life* draws its main attraction from the fact that players, with a modicum of technical expertise, are able to create almost anything they desire. Outside of the games themselves there is a large community of players

³⁴ See for instance Andrew Keen, *The Cult of the Amateur: How Today's Internet Is Killing Our Culture and Assaulting Our Economy* (London: Nicholas Brealey Publishing, 2007).

³⁵ Lev Grossman, “Time's Person of the Year: You”, in *Time Magazine Online* 13/12/06 <http://www.time.com/time/magazine/article/0,9171,1569514,00.html> (accessed 04/01/10).

sharing reviews, walk-throughs, cheats and hacks through the internet, occasionally to the extent that new games emerge through community-driven modifications (known as 'mods') and hacks of existing popular games. The online shooter *Counter Strike*, a mod of the hugely successful first-person-shooter *Half-Life*, is an example of this.

The experience of computer games

The importance of interactivity and the problematic relationship between games and digital art is expressed by Alexander Galloway in a short essay titled *Countergaming*.³⁶ The text forms the last chapter of his collection of loosely related essays titled *Gaming, essays in Algorithmic Culture*. In this essay, Galloway calls for an avant-garde of computer games. Drawing upon the argument established throughout the book that computer games are *actions*, he argues that much of the art created throughout the 1990s under the aegis of 'net.art' falls short of a 'true' avant garde for the computer game medium. His main issue is the fact that these works of art remain in the realm of the visual, removing the feature that most thoroughly describe computer games; their interactivity. They remove the player's agency and reduce her to a viewer, consuming a piece of visual art in a traditional, passive manner. A computer game avant garde, according to Galloway, has yet to happen.³⁷

Computer code and interactivity, then, can arguably be said to be two essential qualities inherent in all computer games. Lev Manovich is preoccupied with

³⁶ Galloway, *Gaming*, 107-126.

³⁷ The dichotomous relationship between 'active' and 'passive' audiences is often invoked by computer game scholars, despite probable disagreement from literary and visual culture studies. I interpret the difference in the sense that viewers and readers, although actively involved with the

software, and sees in that a contemporary avant-garde. He is thus interested in the actual 'text' of the computer object, the commands given to the computer which are executed and presented to the player. Galloway, on the other hand, is concerned with the temporal activity that take place 'between' the computer, software and player, the experience of interaction in and of itself.

Galloway's essay raises a number of issues related to our understanding of computer games, the avant-garde, and the purpose of art. His concerns are echoed by numerous voices calling for games to be taken seriously; games must embrace formal experimentation, explore and subvert its technical language, in short, become more like established 'art'. This is juxtaposed with the current situation of story-based, immersive gameplay experiences that attempt to drag the player into the world of the game -this is 'fun', and therefore not to be taken seriously or given value. There remains a clear distinction between 'worthy', meaning experimental, subversive, 'deconstructable' games, of which there are currently not enough and which are needed for the medium to be recognised as having artistic merit, and the fun, un-serious games that are hugely successful and great to play with but not necessarily deserving of much critical acclaim.

An immediate response to the above criticism of games would be to resort to postmodernism. Invoke the death of the high/low culture divide, and depending on one's theoretical leanings declare computer games either playful pastiches of popular culture, or simulators of hyperreality, and be done with it. In fact, the relative lack of scholarly articles doing just that perhaps points to the ease with which it could be done; it is too suspiciously obvious. In *More Than a Game* (2003), Barry Atkins

text on an interpretative and cognitive basis, are barred from (inter)actively engaging with the semiotic basis of the text as it displays on the computer screen. I explore this further in Chapter 3.

warns against what he deems the 'postmodern temptation' when making the first scholarly steps towards understanding computer games. It is a valid warning. The past three decades has seen a number of new movements, media and artforms being triumphantly presented as the 'ultimate challenge to modernism'. In 'new' media, which I take to mean digital, as opposed to analogue, media, this has been particularly true of early experiments with hypertext-based literary forms.

The 1980s and -90s witnessed a substantial amount of interest in hypertext literature within academia with the possibility that computer-based fiction could become a common, mainstream medium. Hypertext fiction is text read on a computer screen, progressing as the reader clicks on a highlighted node within the text which links to another page. Typically one page of text will have several nodes that link to different pages. The text thus unfolds according to the reader's choices, and a story is created from an underlying pool of potential directions and outcomes. Theorists of hypertext literature celebrate the interactive nature of the genre and the choice given to the reader in determining the direction of the narrative as a victory of postmodern theory. Lauded as the perfect instrument of liberation from the usual suspects attacked in postmodern discourse; linear logic, logocentrism, hierarchical structures and repressive powers, hypertext fiction, it was claimed, provided the final nail in the coffin for Barthes' long-dead author.

This "cult of interactivity", as it has been labelled by Marie Laure Ryan³⁸, is problematic in many ways. Can we really call the act of clicking on links "writing"? Hypertext fiction is not necessarily that different from traditional text based fiction, as it is still based on a fixed text. There is an element of choice involved, but it does

³⁸ Marie-Laure Ryan, *Narrative as Virtual Reality* (Maryland: Johns Hopkins University Press, 2001), 8.

not necessarily amount to more than what can be found in one of the 'choose your own adventure' books that are popular with children. The electronic art of artists like Jodi is of course also interactive, to the extent that the act of clicking on buttons, or choosing from drop-down menus is a form of interactivity not to be disregarded. Similarly, Lialina's html-frames incorporate the act of clicking on links, and *The Worlds First Collaborative Sentence* is dependent on input from computer users from all over the world in order to exist. But there is more to the interactivity offered by the digital computer than choice of direction. As an experience-medium, computer games move beyond the linearity of hypertext, whether labyrinthine or not, and provide players with something radically different.

Computer games have traditionally received substantially less critical attention than other new media forms such as hypertext fiction, although this is slowly changing. Yet if considered closely, games offer a more radical engagement with the possibilities offered by the computer than any other entertainment form that has so far emerged. There is certainly something to this new interactive media that is interesting to the cultural critic, as the theorists of hypertext literature noted. Interactivity, however problematic, is intrinsic to the computer gameplay experience, and thus, central to an understanding of computer games. Often, the discussion around interactivity in gameplay has drawn upon theories developed with regards to hypertext, focusing on the notion of choice, control and effort, centred around a presumption that the computer game is a form of text. Espen Aarseth's influential book *Cybertext* refers to what he calls 'ergodic literature', meaning text which requires effort on the part of the reader in order to traverse.³⁹ His book has been

³⁹ Aarseth, *Cybertext*, 1.

fundamental to many texts on the computer game medium. There are, of course, aspects of the computer game medium that echoes that of the interactive artworks and hypertext literature mentioned here. The game play of the 'point and click' genre, for instance, involves the clicking on text and objects in order to read dialogue and use items that are important in order to solve puzzles and drive the narrative forwards. However, the fact that many computer games contain storytelling elements, often expressed through elaborate plots and lavish visual illustrations and animagions, allows us to add another aspect to the medium that cannot be described and explained by interactivity alone, namely immersion. Immersion is of course not unique to the computer game, but when considered in combination with interactivity the specific features of game play begin to emerge.

Marie-Laure Ryan identifies the concepts of interactivity and immersion as two topics to have gained increasing importance and interest with the emergence of digital media. She notes, however, that immersion has received substantially less attention from the academy. On the one hand, this has a self-explanatory reason. After all, what more can one say about immersion other than that it takes place?⁴⁰ Immersion in fictional worlds is however a substantially more complex notion than that, as Ryan herself is of course fully aware. In her book *Narrative as Virtual Reality* she develops an understanding of immersion in text drawing upon metaphors and technologies of virtual reality.

Immersion and interactivity can at first be seen as dichotomous concepts; one cannot be fully immersed if one is interacting with an outside world. The problem is one of control; interactivity denotes gaining control, as Julian Kücklich argues when

⁴⁰ Ryan, *Narrative as Virtual Reality*, 10-11.

noting that the aesthetics of computer games is necessarily an 'aesthetics of control'⁴¹, whereas immersion denotes a certain loss of control. In order to be immersed one needs to submit to the world one is surrounded by and simply take it all in. The computer game medium, however, thrives on the ambiguity that exists between the boundaries of control and the loss thereof. If interactivity has been a central concern for theorists eager to place digital art and computer games within the spectrum of modernist culture, then the immersive aspect of a certain type of computer game has been disregarded as irrelevant, or even detrimental to the potential of the medium. And yet if, as has been suggested, postmodernism denotes a shift of emphasis from epistemology to ontology; a deprivileging of knowledge in favour of experience⁴², the computer game medium is uniquely placed as both a conceptual tool for exploring new notions of aesthetics as well as a timely object embodying this implied shift. Despite my agreement with the warning of succumbing to the postmodern tradition, then, there is nevertheless something useful to draw from this most contentious critical theory of contemporary culture; the notion of experience itself.

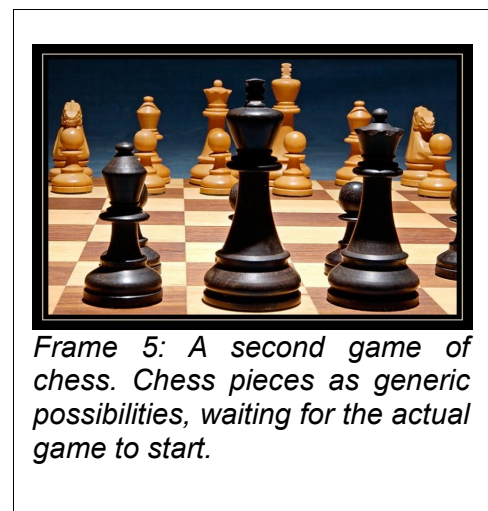
⁴¹ Julian Kücklich, "Literary Theory and Digital Games" in *Understanding Digital Games* ed. Jason Rutter and Jo Bryce (London: SAGE, 2006), 108.

⁴² Roy Boyne, "The Art of the Body in the Discourse of Postmodernity" in *Theory Culture and Society* vol. 5 (1988), 527.

What exactly is meant by an aesthetics of games? The philosopher Alexander Baumgarten who coined the term “aesthetics” meant for it to signify a form of “sensuous cognition”.⁴³ It is with this aspect of experience that my thesis is concerned, placing as much emphasis on 'sensuous' as on 'cognition'. I do not wish to enter into a philosophical discussion around aesthetics itself. Bringing in the concept of aesthetics to a discussion of computer games at first immediately removes focus from the experience of game play, onto the object of the game itself. Chess boards can sell for thousands of pounds due to their perceived aesthetic value, yet the actual game of chess remains the same no matter on which board, and with what pieces, you play it.



The object of the chess board can clearly be an aesthetic object, but can the game of chess itself be such a thing? The question goes to the root of the problem of defining what exactly a computer game is. On the one hand, a computer game is like the chess board, an object with a number of rules attached to it that can be played at any time, a computer disc with a complex set of software encoded onto it. On the other



⁴³ Niklas Luhman, *Art as a Social System* (California: Stanford University Press, 2000), 15.

hand, a computer game is a temporal object, existing only when played, and taking on a different form each time it is played. The game as such only exists in the feedback loop between player, machine and software. Experienced chess players would certainly argue that the temporal game itself can also be a work of aesthetics, and it is with the aesthetics of the latter kind of game that this thesis is primarily concerned, with the idea of aesthetic experience. I believe, however, that in computer game play this experience is located specifically in the body.

As noted in my recollection of playing computer games as a child, a frequent occurrence when having played for a long time was sore thumbs, a phenomenon known as 'gamer's thumb', which began to emerge with the first generation to use those small plastic button controllers attached to a games console. The original NES controller was light and square with sharp edges, uncomfortable to hold for a long time, especially with the rather frantic grip that comes with an intense session of *Super Mario Brothers*. Later controllers have been more ergonomically designed, even if they are chunky, and with an increasing number of buttons, designed to fall naturally into the grip of the hands. Recently a number of controllers have begun featuring advanced motion sensitive technology. Looking at the development of the game controller as the development of more sophisticated interactive possibilities, and greater ease of play, we can perhaps see the merging of the concepts of interactivity and immersion. This allows us to consider the notion of experience as located somewhere in the ambiguous relationship between the two concepts, and to argue that the body is at the centre of this experience.

A question regarding reality

The focus on experience in relation to computer game play conjures up a final problem, one that is never far away from any discussion related to games, namely the question concerning reality and realism. As Atkins argues, this is a notoriously thorny issue, as the boundary between what constitutes a real act and a fictional act can be problematic.⁴⁴ Kendall Walton, in *Mimesis as Make Believe*, argues that: “the experience of being 'caught up in a story', emotionally involved in the world of a novel or play or painting, is central to the appreciation of much fiction, and explaining the nature of this experience is an important task for the aesthetician. It is extraordinarily tempting to suppose that when one is caught up in a story, one loses touch with reality, temporarily, and actually believes in the fiction. The central metaphysical problem concerning fiction is thus mirrored in the very experience of appreciation.”⁴⁵

Traditionally, there have been two ways of looking at reality and the relationship with computer games. The first is in terms of the 'effects' paradigm, fuelled by mainstream media panic and the desire to either confirm or refute the belief that children playing computer games will be unable to tell games from reality. This view of the relationship between computer games and reality takes it for granted that computer games are not real, but that certain people might have problems understanding this, or might become convinced through repeated play, that their actions are indeed real, and considers this to be a potentially dangerous scenario. The second view is one propagated by the games industry itself, and states that increased photorealism will increase the experience of reality in the computer game.

⁴⁴ Barry Atkins, *More than a Game* (Manchester: Manchester University Press, 2003), 21.

⁴⁵ Kendall Walton, *Mimesis as Make Believe* (Massachusetts: Harvard University Press, 1990), 6.

Photorealism denotes the graphic qualities of the game as it is displayed on the screen, and full photorealism would be a state of being unable to tell whether the environment and characters on the screen have been created from scratch or captured by a camera. This view of realism and computer games also inherently sees computer games as 'not real', yet here increasing the experience of reality for the player is considered desirable. The photorealistic view locates reality in a form of visual realism, looking to other audiovisual entertainment forms such as cinema as a visual style to aspire to.

Atkins' *More Than a Game* constitutes the hitherto sole attempt to understand the relationship between computer games and realism. His focus however is on the game-as-text, and his insistence that games are entirely fictional forms is thus easy to agree with. By focusing on the game-as-experience, and locating this in the body, the question regarding reality becomes less about what constitutes real or not-real, and instead about how physical reality informs our understanding of computer game play. My thesis, then, places itself in the emerging category of research interested in player experience. The importance of the body in gameplay leads me to phenomenological theory, and in particular the philosopher Maurice Merleau-Ponty whose *Phenomenology of Perception* is a founding text for the philosophical notion that the world is experienced through the body. As Merleau-Ponty argues, the body is our general medium for having a world⁴⁶, and computer games, to a large extent, are constructed worlds that allow players to explore, move, and sometimes even create. Phenomenology allows us to consider the experience of reality from the point of view of the body, which has certain implications for both our understanding of the

⁴⁶ Maurice Merleau-Ponty, *The Phenomenology of Perception* (New York: Routledge, 2002), 169.

reality of the game world itself and our experience of the real when acting within this world.

Thesis outline

Let me briefly summarise my argument so far, before laying out each chapter of this thesis. Computer games have in a reasonably short amount of time reached a stage where they are an integral part of contemporary society, historically, economically and culturally. The current field of computer games comprises a vast array of genres, styles, stories, experiments and media. As software products, computer games are related to the emerging field of digital art and experimentation, and as entertainment products, they are related to established fields of storytelling and moving images such as literature and cinema. An attempt to theorise computer games from a humanistic point of view should draw upon both these fields, yet it is also necessary for any academic enquiry to establish the features unique to games. The interactive and immersive nature of computer game play means the notion of aesthetic experience in relation to games can be seen as an inherently embodied experience, and it is with this idea that my thesis is concerned.

An early concern when I began writing this thesis was the question of whether I was writing about theory, using games as illustrations, or whether I was writing about games, using theory to inform my argument. In the end, this thesis constitutes an argument about computer game play, informed by theory and illustrated by analysis of specific games. This has both its advantages and its problems. One immediate problem is the fact that the argument made throughout this

thesis will not apply to all computer games. I am concerned mainly with single-player, avatar-based games with a narrative element to them. This description applies to a number of established computer game genres, such as first-person shooters, role playing and sandbox games, but not to categories such as strategy games or puzzles. What the genres that I draw upon all have in common is their allowing for the player to 'enter' into a virtual space through an avatar, and experience that world in a temporal setting.

A second concern has been the question of who the audience of my thesis is. There is an emerging field of academic enquiry labeling itself 'game studies', and although I have enjoyed being part of this field myself on occasion, through a number of conferences and talks, I believe the closing off of boundaries between media and art and narrowing of focus onto one specific medium is counterproductive in a media culture characterised by convergence, fluidity and participation. Perhaps the field of cultural studies, that ambiguous interdisciplinary field best defined by its willingness to take seriously those parts of culture deemed unworthy by the established traditions of scholarship, is the academic category best suited at present. I do not wish to purport to speak only to those already familiar with computer games, as the demand that anyone who wishes to discuss games must be an established gamer is one I find counter-productive to the desire for games to find a more accepted and natural space in mainstream popular culture.

In my next chapter, chapter 1, I elaborate on this problem, attempting to place my argument into a wider critical discourse. I begin by charting the emergence of an academic field dedicated to the study of computer games, and discuss a few of the texts and theories that have come out of this field to date. I then continue by

describing two of the fundamental humanistic text that the field of game studies draw upon, Johan Huizinga's *Homo Ludens* and Roger Caillois' *Man, Play and Games*. I briefly discuss the nascent interest in player experience among scholars interested in games, before turning to the work of the philosopher Maurice Merleau-Ponty. Merleau-Ponty's notion of the embodied subject is the fundamental idea informing my own argument that the experience of computer game play has its basis in the body. I finally discuss the influence of phenomenological philosophy on theories of general digital media culture and the idea of the virtual.

The following three chapters set out to explore the role of the body and embodied experience from three different points of view, roughly divided into the three aspects that make up the feedback loop of game play; hardware, software and interface. Each chapter considers the unique role and importance of the body at each point in the game-play process.

Chapter 2 considers the idea of the 'body as hardware'. Looking at technologies of virtual reality (VR), and drawing upon J. J. Gibson's notion of the senses as perceptual systems, I argue that the body can be seen as an output device as much as an input device, forming an intrinsic part of the interactive process. The chapter then discusses player experience from the point of view of the experience of reality, both physical and simulated. Looking in particular at the game *Rez*, by the Japanese game designer Tetsuya Mizugushi, originally for the Dreamcast and Playstation console systems, and later released on the Xbox live network in high-definition, I argue that the body is central to our understanding of virtual space as well as to our experience of movement and action within computer game environments. There exists a tradition in the computer game industry for developing

hardware that is particularly focused on the body and on embodied play, and *Rez* is a famous example of this. This hardware can be seen as creating a cyborg player, with the ability to extend herself into the game through technology, challenging the dichotomy between virtual/unreal and physical/real. The chapter ends with a consideration of how the notion of embodied experience has consequences for our understanding of the act of reading and viewing as well as for playing, and allows us to see certain differences between the literature, cinema and computer game media all as based on their different relationships to the body.

Chapter 3 is concerned with the idea of the 'body as software', and considers the special importance of the avatar in computer game play. I question the relationship between player and avatar within the context of role playing, as well as through the notion of embodied action. I argue that there are two different ways of seeing the player-avatar relationship; one is as taking on a role and becoming the avatar, the other is remaining oneself and acting within the game world through an extension of oneself. The chapter draws upon the little-known computer game *Pathologic*. The game was made by Russian developer Ice Pick Lodge in 2005, and released in English by the publisher Buka in 2006. Though virtually unknown in the UK and US, it won several awards in its native Russia, including best Russian Game of the year 2005 from Russian GamesLife.⁴⁷ The English translation, which is the version I will be referring to, runs on the Microsoft Windows operating system, from version 98 onwards. Through a reading of *Pathologic*, a game interesting due to its almost Brechtian attempt at disrupting player's experience of play, I explore the

⁴⁷ There is very little official information about the game available, so this information is from the game's official home page in English. Available at: http://www.pathologic-game.com/eng_index.htm (accessed 04/01/10).

complicated relationship between playing, acting and being, and the central role of the avatar in this. I also consider the relationship between the physical body and the virtual body, and how the notion of embodied play relates to the role of the avatar.

Chapter 4 turns to the interface of the screen itself, and considers the environment in which the player moves as a space designed around embodied understanding. Thus the progression of my argument can be seen as a movement of focus progressively shifting 'inwards' towards the game itself, starting from the point of view of the player's physical body and the hardware that acts upon it, moving on to the player's virtual body, before turning to the space of the game environment. This is the result of my own organisational choices, and it should be kept in mind that ultimately, player experience is best described as one of a continuous feedback loop. The chapter charts the development of the image from analogue celluloid film to digital, and debates whether or not the interface of a computer game can be seen as a form of moving image. Drawing upon two of the most successful computer game franchises in history, *Grand Theft Auto* and *Super Mario Brothers*, I discuss the importance of the physics engine and of behavioural simulation in computer game environment, I argue that the game is better seen as a space, a space that is reliant upon the physical, embodied experience of players to be meaningful.

In my concluding chapter I provide a brief summary of my argument, and attempt to map out some consequences for the computer game medium a theory of player experience as located in the body might have. I argue that the inherently embodied and temporal nature of game-play means it is problematic to simply transfer established frameworks of meaning making in other audiovisual media onto computer games. I look at a number of recent attempts to create 'meaningful', or

'serious' games with an artistic or political agenda, and argue that these games are often stuck in a modernist view of art, value and rhetoric that is potentially unsuitable for the specific features of the computer game medium. The main concerns of my thesis will have been to attempt to understand the notion of player experience through a phenomenological reading of the interactive experience, and as such I argue that the individual, temporal and iterative aspect of this experience means computer games should not necessarily be squeezed into already established categories of earlier forms of entertainment media.

To finish with a few notes on choice of words. Throughout this thesis I will use the term 'computer game' as opposed to 'video game' to describe my object of study. This is partially due to personal preference. Although there exist certain debates within the realm of computer game writing as to which should be considered the correct term, no established norm exists. Generally, 'computer games' are seen as games played on personal computers, whereas 'video games' are games played on consoles attached to a television monitor. With the increasing variety of games; networked, pervasive, handheld, as well as continuing classics like arcades, however, this particular distinction becomes difficult to uphold. I choose to use the term 'computer game', as what all these games have in common is their reliance on an electronic central processing unit, a computer, for their existence. This sets computer games apart, to some extent, from other, non-electronic games, even if the boundaries can sometimes be unclear. The difficulty of defining what exactly a 'computer game' is, will be discussed in depth in the following chapter.

Chapter 1 – Studying Computer Games

To those of you that come out of dramatic and literary criticism: if you do to this medium what you have done to literature and drama, then communication between us is at an end.

Ernest Adams

Since they first appeared less than half a century ago, computer games have grown into a multi-billion-dollar culture industry. Yet attention from the academy has been slow. Perhaps this is unsurprising, if the status granted to computer games in our culture remains that of the lowest of the low. Violent, mind-numbing and passifying without any redeeming features, games have generally been seen as mass entertainment of the absolute worst kind. On the surface, there is little experimentation, aesthetic consideration or social awareness, traits that often merit academic interest, in the game development industry. Games are there to make a profit, pure and simple. The core industry is overwhelmingly characterised by a culture of risk-aversion and the creation of tried-and-tested formulaic products. At first glance, then, there is perhaps little there to interpret, critique or deconstruct for the eager young academic.

Yet in the decades since the Frankfurt School first debated the merits of mass culture and its industrial production, scholarship has been characterised by an academy increasingly willing to take seriously that which is considered unimportant or 'trash'. Depending on one's standpoint in the politics of the humanistic disciplines;

cultural studies, French postmodern theory and visual culture have either all but rightfully destroyed the traditional canon of worthy texts, or at least emerged as a perpetually annoying and increasingly loud hindrance to traditional and serious scholarship. Romance novels, punk rock, soap operas, graffiti and comics are now considered inherently meaningful and important cultural phenomena, with a number of journals and university departments dedicated to their study. Yet on the subject of computer games, there has been little said up until very recently. Why is this? Perhaps it is the notion that these are 'games', i.e. something for children and thus not serious. Perhaps their current status as mainstream media scapegoat for various social ills have made computer games untouchable even to the most hardened Marxist social critic. Or perhaps, more likely, the novelty and relative youth of the medium has meant that up until now, computer games have simply remained off the radar for most academics. Only now are the children who, during the 1970s, became the first gamers establishing their scholarly careers, informed by their own cultural backgrounds. Perhaps computer games have not consciously been neglected at all, but are instead only now naturally and timely becoming a part of the academic landscape. This chapter provides a brief summary of some of the work written thus far on computer games, in the attempt to map out an emerging field and provide a framework in which to place my own thesis. I will begin with a consideration of the emerging academic discipline of 'game studies', before moving on to a consideration of certain texts that have proven influential to my thesis in phenomenology and media studies.

Game Studies

As recent as 2001, Espen Aarseth published an article titled *Computer Game Studies, Year One*. The article appeared as an editorial in the first issue of the online journal *Game Studies*, a journal Aarseth had been active in forming⁴⁸. Of course, his title was slightly unfair, as there had been some sporadic interest in games before then. A few books on the history of games and the game industry had been published, and a substantial amount of academic work had been done on computer games under the “effects” paradigm⁴⁹. In fact, as the field of game studies is becoming more established, an increasing amount of scholarly material on computer games is being (re)discovered by academics.

Game Studies, however, was the first attempt to legitimize the study of games as cultural objects worthy of academic attention, its creation was about the establishing of an academic discipline as much as about the study of games. In 2003 DiGRA (the Digital Games Researchers Association) was formed, and the first DiGRA conference took place in Utrecht. The conference has since taken place biannually, in Vancouver (2005), Tokyo (2007) and London (September 2009). In January 2006, the first issue of a new print journal dedicated specifically to the study of games, *Games and Culture*, was published by SAGE. Since then, a number of other online journals have emerged, and a number of conference series, such as 'FuturePlay' and 'The Philosophy of Computer Games' have occurred annually.

⁴⁸ Espen Aarseth, “Computer Game Studies, Year One” in *Game Studies* vol. 1:1, July 2001 <http://www.gamestudies.org/0101/editorial.html> (accessed 04/01/10).

⁴⁹ For meta-analyses and summaries of this type of research, see Craig Anderson, Douglas Gentile and Katherine Buckley, *Violent Video Game Effects on Children and Adolescents: Theory, Research, and Public Policy* (New York: Oxford University Press USA, 1997) and Lawrence Kutner and Cheryl Olson, *Grand Theft Childhood: The Surprising Truth about Violent Video Games and What Parents Can Do* (New York: Simon and Schuster, 2008).

The first years of Game Studies were dominated by a debate between a group of academics referring to themselves as *Ludologists* and the more problematically named *Narratologists*. The latter label is contentious as none of the academics seen as belonging to the narratologist camp ever referred to themselves as such. Janet Murray, in her DiGRA 2005 conference keynote address *The Last Word on Ludology v. Narratology in Game Studies* argues that the ludologists invented the term as a label for anyone who did not agree with their theories. She argues “The ludology v narratology argument can never be resolved because one group of people is defining both sides of it. The “ludologists” are debating a phantom of their own creation.”⁵⁰ The debate at times took on quite harsh proportions, to the extent that it was described by Henry Jenkins of MIT as a “blood feud”⁵¹. Although less prominent now, the debate was a shaping factor of an emerging academic field, and a consideration of the two viewpoint reveals some fundamental issues central to the study of computer games.

Arguably, the debate took place on two levels. On the one hand what was at stake was the creation of a new discipline, and on the other the formal definition of the term 'computer game'. On opposite sides of the debate were those who were mainly interested in the computational structures and configurative mechanics of games, arguing that they should be studied within a new and dedicated field, and those who saw games as the latest addition to the storytelling media and traditions of human history, occupying a place alongside theatre, literature, and cinema.

Drawing their name from Johan Huizinga's *Homo Ludens* (1955), the

⁵⁰ Janet Murray, “The Last Word on Ludology v. Narratology in Game Studies”, transcript available online: www.lcc.gatech.edu/~murray/digra05/lastword.pdf (accessed 04/01/10).

⁵¹ Henry Jenkins, “Game Design as Narrative Architecture” in *The Game Design Reader, A Rules of Play Anthology*, ed. Katie Salen and Eric Zimmerman (Massachusetts: MIT Press, 2006), 671.

ludologists argued that rules, targets and objectives were the basic features of games. Markku Eskelinen, a fervent defender of the ludologist viewpoint, claimed that “[r]egarding the so-called remediation or cross-media influence the simplest possible statement would be that computer games are remediated games (and not presentations or narratives)”⁵². Equally Aarseth, in his aforementioned article, explicitly drew up disciplinary boundaries thus; “[g]ames are not a kind of cinema, or literature, but colonising attempts from both these fields have already happened, and no doubt will happen again”⁵³. The ludologists argued that games should be seen as primarily configurative practices, and juxtaposed this notion with the position that cinema and literature were interpretative practices⁵⁴, in order to argue for the specific “game-ness” of computer games. Eskelinen notoriously ended up with the conclusion that “...stories are just uninteresting ornaments or gift-wrappings to games, and laying any emphasis on studying these kinds of marketing tools is just a waste of time and energy. It's no wonder gaming mechanisms are suffering from slow or even lethargic states of development, as they are constantly and intentionally confused with narrative or dramatic or cinematic mechanisms.”⁵⁵

The ludologist view was backed by several high-profile figures in the game development industry. Ernest Adams, game designer and co-founder of IGDA (International Game Developers Association) claimed that “interactivity is almost the opposite of narrative; narrative flows under the direction of the author, while interactivity depends on the player for motive power”⁵⁶, whilst Greg Costikyan, game

⁵² Markku Eskelinen “The Gaming Situation”, in *Game Studies* vol. 1:1, July 2001 <http://www.gamestudies.org/0101/eskelinen/> (accessed 04/01/10).

⁵³ Aarseth, “Computer Game Studies, Year One”, online.

⁵⁴ Eskelinen, *The Gaming Situation*, online.

⁵⁵ Ibid.

⁵⁶ Jenkins, *Game Design as Narrative Architecture*, 671.

designer and founder of the independent online publisher Manifesto Games, argued “there is a direct, immediate conflict between the demands of a story and the demands of a game. Divergence from a story’s path is likely to make for a less satisfying story; restricting a player’s freedom of action is likely to make for a less satisfying game”⁵⁷.

On the opposite end of the debate were a number of academics and scholarly work dedicated to computer games loosely defined as the narratologist camp. The narratologist view, although never explicitly expressed as such, was seen as represented by academics such as Janet Murray and Henry Jenkins. Murray, in her book *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (1998) argues that the development of new technology always changes narrative conventions, and uses the holodeck made famous by the Star Trek franchise as a metaphor for the immersive, self-inserting and choice-based narratives that cyberspace and digital technology may provide. She envisions a time when a player can insert him- or herself as the main protagonist of *Casablanca*, and act out the well-known story inside a virtual setting, interacting with virtual actors. Jenkins on the other hand takes the view that games are a form of spatial storytelling, allowing the player to roam freely in a constructed space, chancing upon or seeking out specific objects, adversaries and plot components, creating her own story as she goes along.

The narratologist approach to computer games is problematic in that it only applies to certain types of games; those with a fictional or storytelling element. Usually these games are found in the action and adventure genres. A narratological theory of computer games will immediately falter with a typical ludologist question

⁵⁷ Ibid.

“but does it apply to Tetris?”. Murray did in fact make an attempt to interpret Tetris as “a perfect enactment of the over tasked 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.”⁵⁸ In turn, the ludologists argued that what she overlooks in her analysis is the fact that the “tasks” in Tetris increase in difficulty as the player progresses, that the game with regular intervals “levels up”, rewarding the player with both increased scores and a sense of satisfaction, and that Tetris is enjoyable and highly popular for this very reason.

An exchange between Espen Aarseth and Stuart Moulthrop in *First Person*, a collection of texts and debates in the new field of computer game studies available both online and in book format, reveals a telling difference between the ludologist and narratologist viewpoint. Aarseth argues in a main article titled *Genre Trouble* that “games are not 'textual' or at least not primarily textual: where is the text in chess? We might say that the *rules* of chess constitute its 'text', but there is no recitation of the rules during gameplay, so that would reduce the textuality of chess to a subtextuality or a paratextuality. A central 'text' does not exist – merely context.”⁵⁹ Aarseth is referring to what Eskelinen labels the 'gaming situation', meaning the actual act of gameplay which is temporal and situated. During a game of chess, Aarseth points out, it is irrelevant what shape the pieces you play with take, it is chess either way as long as you play by the established rules of chess. Contrary to this, Moulthrop, in an answer to Aarseth, refers to the notion of chess as an allegory

⁵⁸ Janet Murray, *Hamlet on the Holodeck* (Massachusetts, MIT Press, 1997), 143-144.

⁵⁹ Espen Aarseth “Genre Trouble: Narrativism and the Art of Simulation” in *First Person: New Media as Story, Performance and Game* ed. Noah Wardrip-Fruin and Pat Harrigan (Massachusetts: MIT Press, 2004), 47.

of feudalism, arguing that “no doubt one can play the game without connecting this logic to European history, but such an approach reduces chess to a series of abstract transactions, which may work well enough for mathematics but seems far too narrow for any serious cultural critique.”⁶⁰ Tellingly, the two viewpoints are not in opposition, but instead complementary. The ludologist view, as expressed by Aarseth, is interested in the actual *act of playing* a game. The cultural critic Moulthrop, representing the narratologist viewpoint in the context of that specific debate, sees the *game itself*, its history, context, plot and setting, as the object of study. As academic interest in computer games has matured, both approaches are found frequently in a field still characterised by interdisciplinarity and multiple approaches.

Despite the best intentions of certain academics to create a new discipline of game studies, it is clear that scholarly work on games still positions itself in relation to or as part of already established fields. This is of course natural, and the interdisciplinary tensions surfacing at conferences and in publications are likely to settle as the medium and its study matures. Yet the nature of computer games mean the fields which have taken an interest cross an unusually wide section of academia. In the aftermath of the debate between ludology and narratology, a few attempts have been made at developing cross-disciplinary theoretical frameworks in which to place games. I do not have the space to discuss in detail the many valuable and sustained attempts at understanding computer games that have emerged in the past decade, so will instead here focus on a small number that are relevant to my own subsequent thesis.

⁶⁰ Stuart Moulthrop, “From Stuart Moulthrop's online response”, in *First Person: New Media as Story, Performance and Game* ed. Noah Wardrip-Fruin and Pat Harrigan (Massachusetts: MIT Press, 2004), 47.

A snapshot of an emerging field

Although in retrospect the rigidity of certain claims made during the nascent stages of this emerging field may seem excessive, the debate highlights several fundamental problems inherent to the scholarly study of computer games. The field of game studies has, since its formation, been preoccupied with formally defining computer games. Yet 'games' has grown into such a large and varied medium that pinning down a definition of 'what a game is' is almost impossible. Even the simplest definition does not go without contest. As Marie-Laure Ryan states; “The only feature that objectively and absolutely defines video games is their dependency on the computer as a material support.”⁶¹ Her statement, however, has a caveat; Ryan acknowledges that this means computerised versions of popular board games like Monopoly and Chess are not computer games, whereas computerised versions of various genres of sport, such as football and baseball, are, due to the significant difference in gameplay between the 'real thing' and the computer version. In contrast, Jesper Juul, in his *Half-Real, Video Games between Real Rules and Fictional Worlds* (2005) begins his exploration of computer games by not laying much emphasis on the computer at all, and instead develops a 'classic game model'⁶² drawing upon human traditions of play and games since pre-historic times. His approach is again contrary to Murray's above mentioned *Hamlet on the Holodeck* which places computer games into a long tradition of storytelling, play and performance, going all the way back to the amphitheatres of ancient Greece.

⁶¹ Marie-Laure Ryan, *Avatars of Story* (Minnesota: University of Minnesota Press, 2006), 181.

⁶² Jesper Juul, *Half-Real* (Massachusetts: MIT Press, 2005), 36.

A similar approach to Murray's, concerned with the storytelling potential of new media, yet with a stronger focus on the computer game medium, can be found in Barry Atkins' *More than a Game, the Computer Game as Fictional Form* (2003). Coming from literary theory, Atkins is interested in describing how games construct what he calls 'game-fictions'. Atkins considers four different genres through in depth discussion of a representative game; the adventure genre (*Tomb Raider*), the first-person-shooter (*Half-Life*), the strategy genre (*Close Combat*) and the simulation genre (*SimCity*). He acknowledges that the majority of games are relatively uninteresting in terms of their quality of story, if compared to more established entertainment- and art-forms. However, as he contends; "while this study does not seek to minimise the extent to which fictions such as Half-life are essentially formulaic, it is how they are told and how they are read that concerns us here more than the content of their stories"⁶³ Atkins concludes his discussion with a speculation as to whether the interactivity of computer games can be seen in relation to a new form of reading and writing, envisaged as a dialogue between player and game. In his words; "The essential characteristic of what is termed interactivity in relation to the computer game is that it *must* watch the reader. We act. It reacts. We act again. It reacts again. It rewards our attention with attention of its own. This might be presented to us in 'real-time' but we are locked in a complex dialogue or dance with the machine that amounts to a sequence of exchange that goes both ways."⁶⁴ Atkins is however at pains to point out that games, despite their novelty and interactive possibilities, remain wedded to traditional narrative.⁶⁵

⁶³ Atkins, *More than a Game*, 55.

⁶⁴ *ibid*, 146-147.

⁶⁵ *Ibid*, 145.

In *Unit Operations, an Approach to Videogame Criticism* (2006), Ian Bogost attempts to bridge the disciplinary divide between the sciences and the humanities; specifically computational science and critical literary theory. This divide has manifested itself frequently in the brief time that computer games have been subject to scholarly attention, as the differing terminology and objectives of the two fields has often made dialogue between academics difficult. While some emerging game scholars are also game designers and have been educated in informatics departments, others have come to games from the theoretical humanities with no design experience. The former are often interested in understanding what would make 'better' games, while the latter are more interested in understanding existing games. Although noble attempts at interdisciplinary work have been frequent, the often overt hostility that exists between the two and the struggle to bridge the gap between very different modes of thinking is perhaps best summed up in Ernest Adams closing remarks at the Game Developers Conference in 2003: "to those of you that come out of dramatic and literary criticism: if you do to this medium what you have done to literature and drama, then communication between us is at an end".⁶⁶

Bogost sees computer games as objects which naturally bridge both fields; they are both algorithmic and expressive, and his approach is to illuminate the common ground between the two in developing his idea of unit operations as containers of meaning. Through a comparison between comparative literature and computer science, the notion of 'unit operations' is seen as a means for meaning-making specifically in digital environments. Drawing upon both elements of post-

⁶⁶ Ernest Adams, "2003 IGDA Academic Summit, Concluding Summary", transcript available online at www.designersnotebook.com/2003_IGDA_Academic_Summit_Concluding_Summary.pdf (accessed 04/01/10).

structural literary criticism as well as object-orientated programming techniques, Bogost arrives at a method in which the unit operations at work within potentially any text can be analysed and meaning can be made from how these units relate to one another. Despite the subtext of his book's title, Bogost does not really develop a method for computer game criticism *per se*, instead he develops an approach to all forms of cultural text that can be analysed through unit operations. Bogost rejects both the ludological and the narratologist stance, as he argues they are both dependent on functionalist ideology, and instead sees computer games as configurative systems consisting of a number of independent expressive units.

Finally, Alexander Galloway's *Gaming, Essays in Algorithmic Culture* is an attempt to place computer games within a contemporary critical cultural discourse. Drawing upon critical theory and media studies, Galloway presents five essays that consider computer games as a unique cultural form that demands a distinct interpretative framework. Although the essays do not inform one another, the underlying thread throughout his book is the argument that computer games are actions, something to be played, as opposed to texts to be read. This argument is laid out in the first essay, *Gamic Action, Four Moments*, where he places games along two different axes; the diegetic and non-diegetic, and the control of the operator versus the control of the machine. In the second essay, *Origins of the First Person Shooter*, Galloway draws upon film theory to discuss how this specific genre enacts a distinct form of subjectivity, tracing the roots of subjective camerawork in film that heightens emotions, perception and mental state.

In his third essay, *Social Realism*, he argues that 'gamic' realism must take into consideration this idea that games are actions, and develops a "third" form of

realism distinct from that of narrative and cinema that sees realism in games as bound to the social and cultural context it is played in, whereas in *Allegories of Control* he presents an ideological critique of computer games as allegories of the networked society we live in. Drawing upon Deleuze's example of the highway as purportedly offering endless freedom while in actuality being tightly controlled, Galloway sees the way computer games offer supposed freedom of choice and action while in fact being controlled by underlying code as a metaphor for the information society.

In his final essay, *Countergaming*, as I noted in my previous chapter, Galloway calls for a radical avant-garde in computer games. He considers the work of new media artists like Jodi, Anne-Marie Schleiner and Tom Betts, that use interactivity and computer game mods in their work within the framework of the avant-garde cinema movement, and argues that an avant-garde of computer games must deal with games on their own terms, with action rather than merely the visual. Countergaming must still be *gaming*, and must avoid the lapse into animation and video, as is often the case with the artists he describes.

Game studies, then, as an academic field is still very much in its infancy, struggling with terms and definitions in an area rapidly expanding into new and uncharted areas of commerce and culture. A few notable works and theories already exist, and as the medium itself continues to spread into new forms, technologies and demographics, it is likely that academic enquiry will follow. The field does however already have certain canonical texts and established theories to draw upon, specifically in relation to the definition of 'play' and 'games'.

Defining play and games

Since its emergence, game studies has consistently looked to two formative texts on the subject; Johan Huizinga's *Homo Ludens* and Roger Caillois' *Man, Play and Games* (1958).

In *Homo Ludens* the Dutch cultural historian Huizinga identifies what he refers to as the 'play element' in culture. He assigns 'meaning' to play as an activity, and finds it in most aspects of human society and culture; language, law, war, philosophy and art, yet he also contends that playing is essentially not a 'serious' endeavour. At the centre of this argument is his notion of the 'magic circle'. The magic circle is the often unspoken agreement that players enter into when play begins, that what follows is 'just play'. Players are conscious when they begin playing that they are performing an activity that stands outside of the everyday and the serious, one that is ascribed certain boundaries and rules that may be arbitrary and meaningless outside the circle, yet necessary and inherently meaningful inside. There is a spatiotemporal element to the magic circle in that it is often bound by physical constraints; a board, a stage or a playground, and by the fact that players know when play has ended. Inside the magic circle, ideas, standpoints, roles and transgressions can be tried out in a 'safe' environment, because after all, it is 'just play'.

The magic circle concept has become especially important for scholars interested in online multiplayer games such as *World of Warcraft*, as it provides a means for describing and understanding various attitudes to play taken by different players, as well as the status of these games as meaningful entities in contemporary culture. For instance, is the act of 'griefing'⁶⁷ part of play, or does it break the magic

⁶⁷ Griefing refers to the wilful act of making play unpleasant for other players through various means; from harassment and repeatedly killing a weaker character to hacking other players

circle? Does the introduction of monetary systems with genuine value in the physical world bring these online worlds outside of the magic circle and into the realm of 'serious' business? These are questions that leads us to issues of social and economic concerns, removing the separateness of the magic circle and bringing games into the 'real' world. Ultimately, then, the concept of the magic circle becomes a philosophical problem related to the question of what is and is not real.

Although Huizinga's magic circle has proved useful to emerging scholarship on computer games, his text is problematic in that it is dedicated to finding elements of play in all aspects of society and culture. For the academic struggling to create formal definitions and developing a language for the analysis of a new medium, his thesis remains vague. In contrast, Roger Caillois, influenced by Huizinga, in his *Man, Play and Games* creates a system of categorisation for various types of games and play that remains inherently relevant to modern day games. Caillois wrote his text on the classification of play and games in 1958 as part of a larger project dedicated to 'Man and the Sacred'. He was part of the brief but influential 'College of Sociology', a loosely organised group of intellectuals in Paris that included the likes of Georges Bataille and Pierre Klossowski. The 'college' were behind a series of regular discussion meetings that took place during the period 1937-39. They were interested in manifestations of the sacred in culture, a term drawn from Emile Durkheim and understood as instances of communal and social rituals and experiences. They took issue with the increasing emphasis put on the individual in the emerging mass-industrial culture, and wished to focus on sociality and moments of strong and structured shared experiences as an antidote to individualism. Caillois'

accounts.

interest in play and games is thus informed by an underlying desire to understand games as displays of common cultural rituals.

In his book, he divides play into four categories; agon, alea, mimesis and ilinx. Agon refers to *competition* and is thus closest to the notion of 'game' as defined by ludology. Chess, basketball and sprinting are all examples of agon, of competitive games. Alea refers to *chance*, and is thus at first glance in opposition to games in the agon category in which skill is crucial in order to succeed. A typical example is the modern lottery, which is won almost purely by chance. Most games in the alea category will however have competitive elements in them as well, combining chance and skill, sometimes to the extent that it can be difficult to place a game in one specific category. Poker is a competitive game that involves skill, yet it is also a game of chance.

The third category, mimesis, is a term with a long and complicated tradition in literary criticism. Put briefly, it refers to the act of imitation, the creation of a representation or resemblance of what we understand as reality. In Caillois' categories, mimesis refers to the act of *role-playing*. Both children's informal games of make-believe and traditional, professional theatre are examples of this kind of play.

Caillois' final category, ilinx, is usually translated into '*vertigo*'. In the Greek language the the word translates as whirlpool, yet vertigo has been deemed a more appropriate term within the context of play. Caillois describes it thus: "one produces in oneself, by a rapid whirling or falling movement, a state of dizziness and disorder"⁶⁸. Examples of games of vertigo can be simply the act of spinning around

⁶⁸ Roger Caillois, *Man, Play and Games* (Illinois: University of Illinois Press, 2001), 12

until one feels dizzy or going on a roller coaster ride.

As with the example of poker, many activities in the latter two categories do not fall neatly into just one box. Rhythmic gymnastics, for instance, is an example of a game of ilinx that can be made both competitive, for instance as a branch of athletics, and mimetic, when gymnasts are acting out a specific performance with narrative and theatrical elements.

In addition to his four categories, Caillois creates a scale in which to place various forms of play and games according to how bound they are by pre-defined rules. He uses the term *ludus*, from Huizinga, to denote games that are clearly structured with explicit rules. Chess, poker and traditional theatre performance are all examples that are heavily prescribed by established principles of behaviour, thus found close to the *ludus* end of the scale. On the opposite end Caillois places *paida*, free and spontaneous play. The child's spinning and make-believe games are found closer to this end.

Caillois' classifications are useful not simply for the categorization of various forms and genres of games, but also to illustrate the point that the term 'game' is hugely problematic. Just as Huizinga found aspects of 'play' in all corners of human culture and society, so Caillois refers to a vast variety of activities as 'games'. The breadth and scope of the term illustrates an important part of the study of games that, although not gone completely unnoticed, is not very developed; the study of genre.

Genre studies, in relation to computer games, is a complex field, and one that is lacking in consideration from computer game scholars. This is problematic, as Rune Klevjer notes. He argues that a deeper understanding of genre in computer games would make it easier to bridge the gap between specific analysis and general

theory. In addition, it would make it easier to understand the connection between aesthetic norms and social practice.⁶⁹ A first problem is one of classification. What feature of the game do we use to determine its place within the ordered categories of different genres? Currently, games can be described both in terms of their theme, and also in terms of their game-play mode. Themes usually fall into similar categories as those found in cinema and literature. There are science-fiction games, horror games and war games. Tellingly for a medium still seen as mainly made by young men, for young men, genres more usually seen as 'feminine' are absent as categories. There are no romance games, drama games or comedy games, although romance, drama and comedy are features frequently found in computer games across the spectrum. The games that fall into categories drawn from cinema and literature are usually games that feature a storytelling element, or at least an element of narrative such as a background plot. For games that fall outside of the realm of narrative, other types of classification have been found necessary.

By classifying games in terms of their gameplay mode, it becomes possible to include all types of games, not just those that fall into narrative categories. The notion of gameplay mode refers to the manner in which the player interacts with the game, the formal structures that define the game. Among the most popular categories are first-person-shooters, role playing games (RPGs), and racing games. Games can sometimes be referred to in terms of genres taken from both categories of theme and gameplay. Examples include sci-fi shooters and horror RPGs.

There have been few attempts at creating a formal classification system for computer game genres, and usually academics are content to refer to commonly used

⁶⁹ Rune Klevjer, "Genre Blindness", *DiGRA Hardcore*, 01/11/06, <http://www.digra.org/hardcore/hc11> (accessed 04/01/10).

categories determined by the game development industry. One notable exception is Mark J. P. Wolf's list of genres based on interactivity.⁷⁰ His list is extensive, encompassing 42 categories:

Abstract, Adaptation, Adventure, Artificial Life, Board Games, Capturing, Card Games, Catching, Chase, Collecting, Combat, Demo, Diagnostic, Dodging, Driving, Educational, Escape, Fighting, Flying, Gambling, Interactive Movie, Management Simulation, Maze, Obstacle Course, Pencil - and - Paper Games, Pinball, Platform, Programming Games, Puzzle, Quiz, Racing, Role - Playing, Rhythm and Dance, Shoot 'Em Up, Simulation, Sports, Strategy, Table - Top Games, Target, Text Adventure, Training Simulation and Utility.

Wolf's list is not without problems, for instance the often used category of 'sandbox' games, which includes successful titles like the *Grand Theft Auto* series and *The Elder Scrolls: Oblivion*, is not included. Some of his categories, such as adaptation, demo, diagnostic and utility are highly questionable.⁷¹ Other categories do not refer to computer games, but to games in general. Among these are board games, card games and pencil-and-paper games. Yet the list is a useful basis for considering the problem of genre specifically, and the problem of defining computer games generally.

If one takes Caillois' classifications as a starting point, it would be possible to make an attempt to place Wolf's genres into a grid according to where they fit into his

⁷⁰ M. J. P. Wolf, "Genre and the Video Game" in *Handbook of Computer Game Studies* ed. Joost Raessens and Jeffrey Goldstein (Massachusetts: MIT Press, 2005), 194-195.

⁷¹ Can the fact that a game is adapted from another medium be enough to classify it as a separate genre? Is a demo of a game a genre in itself? And it is unclear whether 'Diagnostic' and 'Utility' should be included at all, as they are, which the author admits, usually not games.

system. This might be a useful exercise, but it would not really further any knowledge with regards to the definition of a computer games. What the multitude of genres illustrates is the impossibility of going much beyond generalisations when discussing a medium with as much variety as the computer game. Any attempt at creating a formal, catch-all definition for all these examples will inevitably end up only scratching the surface. There are not many similarities between *Tetris* and *The Legend of Zelda*, and in order to gain an in-depth understanding of either of them, it is necessary to go beyond the classification of 'games', and to look at them in terms of their specific characteristics, whether narrative, thematic or structural. This final point is highly relevant in relation to my own thesis. I should emphasise here that the claims I make will not be applicable to all computer games, yet I also do not write only about one specific genre. My focus is on player experience, an aspect of computer games that crosses genre boundaries, yet varies considerably from game to game.

Player experience

After the initial debates surrounding the question of ludology and narratology, in which the structure of the game itself was the focus, the field of game studies has broadened out to take in various aspects of the computer game: textual, structural and functional, including the question regarding player experience. It is perhaps not surprising that the topic of player experience should become prominent in game studies. Usability and user experience is after all already an established field in computer science. Also, a computer game, more so than any other entertainment

media, makes the player the main protagonist of its story. Janet Murray, despite being presented as a 'narratologist' who sees games as a form of storytelling, is implicitly writing about player experience with her holodeck metaphor. Likewise, Henry Jenkins' notion of 'narrative architecture' makes the player's experience the main point of departure for a discussion of the narrative potential in games. The game can not really exist without the player, to the same extent that a film will go on uninterrupted if the audience leaves the room. This is obviously not a statement without caveats, for instance multi player games can go on without the player present, yet the importance of the player-protagonist is understood in the games industry to the extent that a number of well-known single-player games have humorously explored the notion of the player's disappearance. For instance, in *Super Mario 64*, if the player is inactive for more than a few minutes, Mario will sit down on the floor with a sigh. Leave him for another few minutes, and he falls asleep, snoring and talking in his sleep.

The importance of player experience when attempting to understand computer games can be emphasised by the fact that computer games are inherently interactive. The player is not merely an audience, she is implicated in the semiotic basis of the game itself as it exist as a temporal object. Interactivity as a phenomenon has a tradition of scholarship in a number of academic disciplines. In the sciences, the field of human-computer interaction (HCI) is well established as a subdiscipline of informatics or computer science, where it denotes the study of the design and implementation of interactive computer systems, with the goal of easing the gap between human cognitive models and the computer's ability to respond to these. Specific emphasis is laid on the design of interfaces between the two, such as

operating systems, computer graphics and programming environments.

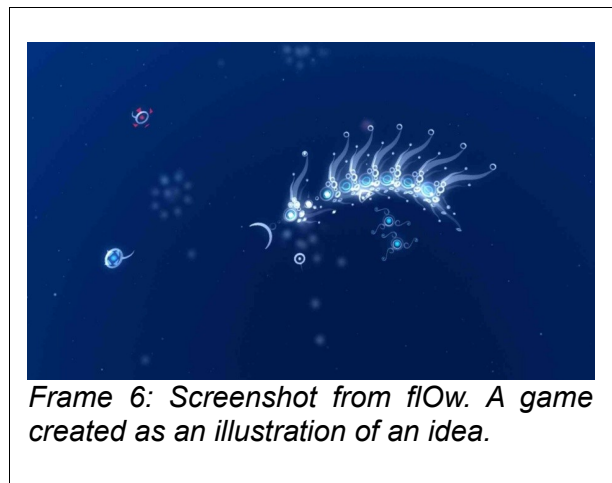
In the theoretical field of media studies, interactivity is usually thought of as a feature of new, digital media, in opposition to traditional mass media such as radio and television where the classic information model refers to the dissemination of messages from one transmitter to many receivers. This is not to say that theorising interactivity and interactive media is inherently a new phenomenon. In the 1970s and '80s audience reception theory drawn from reader response theory in literature gained ground as a means for interpreting the ways media audiences actively participate in the construction of meaning of the texts they are experiencing, based on their own cultural background and influences. Reception theory gave readers and viewers of literature, cinema and theatre more agency in the process of meaning interpretation, and explicitly avoided seeing them as passive receptors of a given text.

In the field of media studies, Marshall McLuhan's classic text *Understanding Media* (1964) has become famous for its distinction between what McLuhan deemed 'hot' and 'cold' media. McLuhan takes as his starting point sensory stimulation and the ways in which various media act upon the senses. 'Hot' media denotes media that feature a large amount of sensory input, and thus require less effort on the part of the audience in order to create a complete understanding of the information conveyed. An example of hot media, according to McLuhan, would be cinema. In contrast, 'cool' media provide less stimulation direct to the senses, and thus require an audience to actively fill in more information in order to apprehend the full picture. An example of this would be the medium of comics, which unlike cinema does not provide high definition captured images, but instead is drawn or painted and thus gives a reader less immediately clear visual input.

Participatory culture, HCI, audience reception theory and McLuhan's hot and cold media are all examples of ideas in which the notion of interactivity is central, and are illustrative of the notion that player experience (or user experience) is not exclusive to the computer game medium.

A theory that has provided popular among scholars interested in studying player experience is Csíkszentmihályi's notion of *Flow*.⁷² The concept originated in his native discipline of psychology, and has since been appropriated in a number of other subjects. Flow refers to the state of mind experienced when one has achieved mastery of a task that is demanding, absorbing and rewarding. Playing an instrument or a sport are examples, as is mastering a computer game. For Csíkszentmihályi, flow denotes a feeling of complete and energetic focus, resulting in a sensation of fulfilment and enjoyment. The concept has since been used in a number of self-help books extolling it as an aid in the achievement of happiness.

fLOW is also the name of an independent computer game developed by Jenova Chen and Nicholas Clark. The game was developed as part of Chen's doctoral thesis, and has since become reasonably well-known, lauded as a 'break-out-hit' from the independent game developer community that was adapted for the Playstation 3 and Playstation Portable consoles in 2007 and 2008 respectively. The game is to a certain extent an experiment with Csíkszentmihályi's concept



Frame 6: Screenshot from *fLOW*. A game created as an illustration of an idea.

⁷² Mihaly Csíkszentmihályi, *Flow, the psychology of optimal experience* (London: HarperPerennial, 1991).

of flow itself. Gameplay is simple; the player controls a small worm-like organism and guides this organism using her mouse. The object is simply to evolve -the organism can eat certain cells and will be attacked by others. When the player has gained mastery of the games input technologies -the mouse and keyboard, and is able to guide the organism on her screen effortlessly around, she is in a state of flow. The game is an example of theory and practice coming together, of someone working on games research choosing to make a game to explore ideas. As the field of game studies matures, hopefully more instances of this kind will appear.

There is a correlation between the notion of flow as used in relation to gameplay, and certain theories in the phenomenological tradition. Both are related to issues regarding cognition, understanding and experience. In particular, the theories of Maurice Merleau-Ponty provide useful insight and should be given attention by theorists interested in understanding computer game play.

Phenomenology and computer games

Maurice Merleau-Ponty was a French philosopher in the phenomenological tradition. Influenced in particular by Edmund Husserl and Martin Heidegger, he is usually classed as an existential philosopher, especially because of his friendship with Jean-Paul Sartre. Although less well-known than some of these other 20th century philosophers, with the increased popularity of visual cultural studies and the advent of digital technology his thoughts have enjoyed an academic renaissance in recent years. Merleau-Ponty's work represents a vast and sustained inquiry into the nature of being and our experience of being in the world, and the summary here

reflects only a proportion of his thinking, that which will be particularly relevant to the argument presented in my thesis.

Existential philosophy challenges the notion that philosophy must involve an abstracted form of thinking removed from the world and our experiences. The abstracted thinking model remains the dominant view in the analytical philosophy tradition found in academic departments in the Anglo-American world today. In opposition to this, the existential tradition attempts to develop a means for making us aware of our own situatedness in nature, culture and history. The idea of eternal truth and objective knowledge is rejected, as is the idea of the non-situated human being. Instead, existential philosophy claims that truth happens through our co-existence with other human beings, and is always dependent on language and history. As such, this line of philosophy lends itself to thinking that concerns itself with cultural interpretation, and has often found a home in academic departments of arts and literature. As Jaspers contends: “philosophising starts with our situation and attempts to illuminate it”⁷³. And for Merleau-Ponty, our situation starts with the body.

Merleau-Ponty’s most influential text is *The Phenomenology of Perception*, his doctoral thesis, published in French in 1945. Influenced by Heidegger’s conception of Being, Merleau-Ponty developed his idea of the “body-subject”, as an alternative to the Cartesian cogito. In the preface to his major work, he accuses his philosophical predecessors thus: “Descartes, and particularly Kant *detached* the subject, or consciousness, by showing that I could not possibly apprehend anything as existing unless I first of all experienced myself as existing in the act of

⁷³ Quoted in Monika Langer, *Merleau-Ponty’s “Phenomenology of Perception”: A Guide and Commentary* (London: Palgrave Macmillan, 1989), ix.

apprehending it.”⁷⁴ In opposition to this, he posits his own claim, that “[t]he world is there before any possible analysis of mine, and it would be artificial to make it the outcome of a series of synthesis which link, in the first place sensations, then aspects of the object corresponding to different perspectives, when both are nothing but products of analysis, with no sort of prior reality”⁷⁵. Merleau-Ponty wished to expose the prejudices inherent in the idea of objective thought, and argued that human experience is always already situated in the world. Objects in the world are therefore not the unchanging things science would purport to study, but instead exist in a correlation between the body and the senses. Although at first this view would seem to remove any sense of reality from the object and reduce experience to the extreme relativity that Cartesian thought originates from, Merleau-Ponty instead argues that this view establishes the reality of the object, as there is no other way we can co-exist with it and the life world. Through what he calls an act of “original faith”, we experience the object as situated in the phenomenal world. The experience of our body is not as a closed, thinking mind, but as a body-subject always interacting with its surroundings. The same is true for our experience of the perceived object. The body, Merleau-Ponty argues, should be seen as a dynamic synthesis of intentionalities between the subject and the world.

Merleau-Ponty, then, posits the body at the centre of ontology -'I am' because I have a body, and it is from the body I am able to perceive, understand and interpret the world. Throughout his work, Merleau-Ponty's notion of embodiment takes on three meanings. First is the physical embodiment of each person, with arms, fingers, legs and feet all making up a certain individual shape. Second is the set of embodied

⁷⁴ Merleau-Ponty, *The Phenomenology of Perception*, x.

⁷⁵ *Ibid*, x-xi.

skills and understandings each person possesses as a result of being an embodied being, such as responses to the directional pull of gravity and the act of feeding oneself. Third is the notion of embodied cultural skills developed from the world we live in, such as responding to displays of anger or affection by other embodied subjects. Together, his notions of embodiment make up the full spectrum of human experience, centred around the having and being of a body.

This idea of the body-subject and perception as an enactive process can be made clearer through a consideration of his claims with regards to the body and tool use. Here Merleau-Ponty's argument is comparable to Heidegger's idea of the 'ready-to-hand'. In his example of the act of using a hammer, Heidegger argues that we do not see the hammer as an object in and of itself, but instead in the context of equipment, something that is there in order to do something. The hammer is ready-to-hand, and only when it breaks and loses its usefulness do we see it as merely "there", present-at-hand. Likewise, Merleau-Ponty argues that tools function as an extension of the human body, once the body has mastered the tool. Using the example of the blind man's cane, he argues that the experience of a tool we are using differs substantially from the experience of an object in the world. It ceases to be an external object and instead becomes part of the experience of the body-subject. The blind man is not aware of his cane's position in physical space, instead the cane is his transparent access to other objects. Here Csíkszentmihályi's notion of flow can be seen as correlating. The experience of flow comes when the object, in this case the cane or the hammer, has been appropriated by the body, and is no longer experienced as an object in and of itself.

Through his study of perception, Merleau-Ponty was led to the conclusion

that the body is not merely an object, there to be scrutinized and dissected by scientific enquiry and experiment, but also a permanent locus of experience in itself. Consciousness, the body and the world exist intertwined with one another, and are mutually engaged. With the emergence of new technologies like computer games and VR, the phenomenological philosophy of Merleau-Ponty is often found as a framework for new theories relating to these phenomena. Virtual space is often touted as allowing people to do, act and become whatever they want, free from the confines of the flesh and the laws of the physical world. As we are perhaps more clearly seeing the possibility of the disappearance of the body, so the body increasingly becomes the focus of study.

Merleau-Ponty's phenomenology is a radical philosophy with potentially political consequences. In drawing attention to the presupposed and actual conditions of our experience of being in the world, it forms a basis upon which moral and cultural critiques of society can be made. Merleau-Ponty was himself highly critical of post-war French society, and argued in the inaugural issue of *Les Temps Modernes*, the journal he founded with Sartre, that "we have learned history, and we claim that it must not be forgotten"⁷⁶. Objective thought, he feared, created a situation in which we became alienated from our selves, our world, and other people that we interact with. His philosophy, thus, is an appeal to consider ourselves and our experience as intrinsically part of and inseparable from the world we live in, against the more abstract rationalism of the Cartesian tradition.

Merleau-Ponty's thinking has had an influence on several strands of cultural enquiry, including technology and visual art. Most notably, Hubert Dreyfus has

⁷⁶ Maurice Merleau-Ponty, *Sense and Non-Sense* (Illinois: Northwestern University Press, 1964) 150.

drawn upon the insights of phenomenology since his seminal book in 1972, *What Computers Can't Do*, to argue against the utopian claims made by research in Artificial Intelligence (AI). Early research into AI took a highly mechanistic view of the human mind, after the discovery in the late 1950's by Newell and Simon at the RAND corporation that computers could in fact do more than simply calculate. They developed the idea that the computer could be used to simulate all aspects of human intelligence, simply through highly advanced information processing. Dreyfus predicted that the programme would fail, and by the early 1980's it had in fact encountered several difficulties. Marvin Minsky, famous proponent of the computational mind, had claimed in 1967 that "within a generation the problem of creating "artificial intelligence" will be substantially solved"⁷⁷. By 1982 he had to tell a reporter that "the AI problem is one of the hardest science has ever undertaken"⁷⁸. As Dreyfus had argued, the computer lacked the commonsense knowledge that all humans carry with them in order to live in and understand the world around them. The original AI project was based on a Cartesian reasoning that sees understanding as the drawing upon abstract representations in the human brain, representations that could be re-created in a computer if only given enough information. It does not take into consideration the role of the human body in organizing our experience of being in the world, nor the actual situation in which the body is placed. Recently research into AI has fired up again, as new approaches are being developed in the broad field of machine learning. Rather than feeding the computer with information to be processed, AI based on machine learning lets the computer develop its skills and understanding through reinforcement learning. It has been proven that a computer

⁷⁷ Marvin Minsky, *Computation: Finite and Infinite Machines* (New Jersey: Prentice-Hall, 1967), 2.

⁷⁸ Gina Kolata, "How Can Computers Get Common Sense?", *Science* vol. 217 : 24, 1237.

that plays thousands of games of backgammon against itself can develop the same mastery of techniques as a computer that had been delivered the information as input⁷⁹. However, as Dreyfus notes, the dilemma then becomes that of creating a learning device that shares human concerns and structures in order to learn to generalize the way humans do⁸⁰.

There are several reasons why phenomenological philosophy and the critical theory deriving from it should be particularly applicable to computer games. The importance of a player in the game means the critic should always take into consideration the experience of the player when writing about game play, not simply as an audience but as an integral part of the actual game itself. The theme of individual freedom which is fundamental to the existentialist project resonates with the notion of surrendering oneself to the game, or of taking control and mastering the world of the game. Of course, there is less at stake when analysing computer game play than understanding the experience of being human, yet nevertheless the question regarding the experience of being is fundamental to the computer game. If the protagonist of the computer game is the player herself, then she is directly implicated in its actions and trajectory through her own choices and behaviour.

Computer games are frequently studied in terms of their mechanistic, operational and configurational qualities. The legacy of “effects” studies in computer games has been strong in the cultural study of games, to the extent that research sympathetic to computer games has often simply attempted to reverse or undermine the negative results of these studies, rather than challenge the concept of the mechanical and receptive mind. This is especially true for research into the

⁷⁹ Hubert Dreyfus, *What Computers Still Can't Do* (Massachusetts: MIT Press, 1992), xl-xli.

⁸⁰ *Ibid*, xlv-xlvi.

educational promise of computer games, which emphasises the learning potential involved with configurational and ergodic texts. The idea is that children will learn more thoroughly when there is effort involved in the obtaining of knowledge. Although there is nothing inherently wrong with this viewpoint, and its soundness should not be disputed, this approach to computer games overlooks the inherently embodied nature of gameplay. The furthest consideration the body has received in relation to computer games is expressed in the oft made claim that playing increases hand-eye coordination. Although there is an implicit understanding in the study of games that the act of playing is *active*, the embodied basis of interactivity is frequently overlooked.

The cartesian view of the machinic body saturates much writing on cyberspace in general. The body has traditionally been aligned with the material and the “real”, while the mind has been placed in the realm of the intangible and with the imagination. The mind “wanders”, while the body stays with its feet placed firmly on the ground. This is reflected in game studies for instance in research into avatars and identification in virtual space. Much of the work done on avatars and avatar choices in relation to gender bending and body image is interesting in relation to player psychology, yet such an argument also suggests that the player of a computer game somehow transcends into the space of the game and “becomes the character”. I explore this problem further in chapter 3. A phenomenological approach to computer gameplay would consider the computer game controller not as a mechanical device for input, but as an extension of the embodied player experience, an idea that will be discussed further in my next chapter.

Theorising the Virtual

Questions concerning simulated worlds mediated through computer technology and their relationship with reality, the challenge of AI to our ideas of consciousness, and the notion of large complex networks traversing spatial and temporal boundaries have all become increasingly prominent in recent years. Technologies like the internet, achievements in robotics, and new 'spaces' such as Second Life appear to lead to a merging between our actual contemporary world and the science fiction tales of yesteryear. What many of these questions and theories implicitly highlight is the complicated role of the human body in relation to emerging technologies.

As we have entered the “information age”, obtaining knowledge, experience and communication through the means of digital technology is progressively becoming the norm. Especially in the developed world, people spend increasingly large amounts of their time and lives through various communication technologies, whether shopping for goods they have never touched or smelled, or maintaining friendships with people they have never met. With this has come a renewed focus on the long-standing philosophical debates with regards to our perception of the world and our place in it. At the centre of these debates lies the question concerning the importance of our bodies.

It is possible to argue that new media technologies are bringing the original question regarding the mind/body divide back into focus. Although the question never went away in philosophical discourse, in contemporary culture the problem of the nature of the mind and its relationship with the body has become more acute as the digital computer and the possibilities it brings have become increasingly

persistent. Reflections on cyberspace as a distinct space separate from the physical, i.e. 'real' world are commonplace in many recent theories of new media technologies. Theorists like Howard Rheingold celebrate the virtual as a space where we can leave our old selves behind and form new identities, new communities and bonds, transcending all spatial boundaries in order to form a global civil society⁸¹. For Rheingold the body is irrelevant -communication through technological means is a positive development that will lead to increased democratisation on a global scale, allowing for participation in decision-making operations no longer being restricted to political elites, as well as communities organised around choice and interest as opposed to geographical confinements. In a similar vein, certain influential thinkers have gained worldwide fame by taking the idea of cyberspace to its logical extreme, speculating that we will at some, not-too-distant, point in the future be able to upload our minds onto an electronic network and 'live' forever as a disembodied consciousness.⁸² On the other side of the argument are theorists like Paul Virilio, who sees the increasing importance of cyberspace and networked communication as a displacement of the body, arguing that we have become 'disabled', and that bodily inertia, technological prosthetics and telepresence have replaced the flesh as our means for orientating ourself in the world.⁸³ For Virilio this is a catastrophic development, which has implications for our abilities to process and evaluate information, eventually leading to the collapse of time and space.

Other theorists do not see technology as emphasising a cartesian dichotomy, but instead argue that technology is asserting the importance of the body by merging

⁸¹ Howard Rheingold, *The Virtual Community: Homesteading on the Electronic Frontier* (Massachusetts: MIT Press, 2000).

⁸² This idea was first put forward by George Martin in his paper "Brief proposal on immortality: an interim solution", *Perspectives in Biology and Medicine* vol. 14(2) Winter 1971.

⁸³ Paul Virilio, *Open Sky* (London: Verso, 1997).

with it, enhancing it, and furthering its reach into previously unimagined spheres. The feminist theorist Donna Haraway sees liberation in the assimilation of technology and body, arguing that the cyborg nature of modern humanity allows us to overcome oppressive dualisms and rigid boundaries, such as traditional notions of gender roles, family and social organisation.⁸⁴ Her idea of the cyborg is a way of overcoming fixed separations such as human and animal, or human and machine, arguing instead that technology acts as an extension of the body, changing and challenging what it means to be human in the first place.

The rapid development of technology and the hype and fear which surrounds it means the current theoretical landscape is fraught with ideas relating both to what actually exists today, and to what may exist in the future. As such it can at times appear to take on elements of science fiction. To that end, revealing insights into the relationship between technology, our bodies, and the question of reality in the past decade have come not only from academic theory, but also via mainstream literature and cinema. The aforementioned *The Matrix*, alongside William Gibson's novel *Neuromancer* (1984), are examples of narratives that have had a far-reaching influence on how we think about the meaning and potential of new technology. Gibson first coined the term 'cyberspace' in his novel, a word which has now entered everyday terminology due to the rapid spread of the internet and virtual worlds. He describes cyberspace as “a consensual hallucination experienced daily by billions”⁸⁵, an idea that is furthered directly in the Wachowski brothers' film (removing the consensual part in order to set up the dystopian futuristic plot). If at first these works

⁸⁴ Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York; Routledge, 1991), pp.149-181.

⁸⁵ William Gibson, *Neuromancer* (London: Voyager, 1995).

of fiction appear to see cyberspace as a separate realm, another reality, then a short scene half-way through *the Matrix* exposes the continued importance we place on our bodies in relation to the reality of the world we move in. As Neo re-enters the Matrix for the first time after being released from his unconscious confinement, he passes stores and cafes that used to be part of his everyday life. Musing on the unreality of his previous existence, he claims; 'none of that ever happened'. His instinct, it appears, is that if the world is not experienced through his body, but exists solely in his mind, the world that is experienced is not real.⁸⁶ One question raised by new technologies, then, asks what it means for something to be experienced through the body, and what implications this has for our understanding of the relationship between reality and fiction.

It should be noted however, that this is not a concern exclusive to new media studies. Established disciplines like literature and film studies have also seen an increased preoccupation with the body. Of particular relevance here is the notion of 'haptic visuality', a term coined by Laura Marks in her book *Touch, Sensory Theory and Multisensory Media* (2002). Haptic visuality refers to a form of embodied spectatorship that denotes a tactile relationship to the object perceived. In Marks' terms: "I prefer to describe haptic visuality as a kind of seeing that uses the eye like an organ of touch".⁸⁷ Marks uses the term to describe a particular way of experiencing film and visual art. Dissatisfied with the Lacanian idea of looking embedded with power that permeates most film theory, she considers haptic visuality

⁸⁶ This, of course, is one of the most contested and debated claims in the history of western philosophy, and it is beyond my scope here to provide an extended summary of philosophical ontology.

⁸⁷ Laura Marks, "Haptic Visuality: Touching with the Eyes" in *Framework, the Finnish Art Review Online* http://www.framework.fi/2_2004/visitor/artikkelit/marks.html (accessed 23/05/07, article no longer available online.).

to “invite...a kind of identification in which there is a mutual dissolving of viewer and viewed, subject and object; where looking is not about power but about yielding; or even that the object takes on more power than the subject. Haptic images push us out of cinema’s illusionary depth and invite our eyes to linger on the surface of the image. Rather than pull us into idealized space, they help us feel the connectivity between ourselves, the image and its material support, and the world to which the image connects us.”⁸⁸

Marks belongs to an emerging trend in film studies that draw upon phenomenology to explain the aesthetics of spectatorship from the point of view of the embodied subject. This is highly relevant for the study of computer games, not only for the description of an aesthetics based in sensory stimulation, but also for highlighting the differences between the medium of film and that of computer games, and thereby emphasising the unique features of the computer game experience. As has already been pointed out, the viewer of a film and the film itself remain two separate entities to the extent that the viewer has no control over the trajectory of the events unfolding on the screen. In Marks' term, the notion of touch is used as a metaphor for looking, it is the eyes of the viewer that are 'touching' the screen, not the hands. Through visual and aural input she is able to cognitively construct embodied sensations based on the information she is presented with combined with her own sensory memories, but unlike in computer game play, there is no direct physical contact between viewer and film.

In conclusion, the study of computer games is a field only just beginning to take shape. It encompasses and draws upon a number of theories,

⁸⁸ Ibid.

philosophies and disciplines, yet is also in the process of establishing its own identity. For the academic setting out to write on this new medium, a number of choices must be made in terms of where to place oneself. There is no established canon, neither of theoretical work nor of games themselves, although one is slowly emerging. I can only hope that my own thesis will serve as a small contribution to the emerging body of literature that is appearing at increasing speed and volume, as the field of game studies begins to materialise.

Chapter 2 – The Body as Hardware

These things have no shape, and they're invisible products – not like, say, a statue.

This is data, a high-pressure package of data - a lot of different art, and sound, and interaction, all packaged together.

Tetsuya Mizuguchi

What does it mean to be immersed? The dictionary definition of the term describes it as the state of being deeply engaged or involved, or as a state of total absorption.⁸⁹ Often the example given is in relation to water, as in a Baptism, or when the entire body is immersed in the sea. Another frequent usage of the term is in relation to foreign-language learning, where the 'immersion technique' denotes learning by surrounding oneself completely with the language, its speakers and its culture. It is a term that has many uses, yet the underlying assumption appears to always be that of '*being-in*', that is to say being in a specific environment or space.

Immersion is becoming an increasingly important issue in the scholarly study of computer games, as evidenced the recent big event in the field, the DiGRA conference in September 2007, in which numerous papers grappled with the question of what exactly the concept is defined by.⁹⁰ Outside of academia, there is also a substantial amount of interest in immersion and its relation to the game-play experience. This can be seen from various points of view, both positive and

⁸⁹ See Merriam-Webster Dictionary online: <http://www.merriam-webster.com/dictionary/immersion> (accessed 04/01/10).

⁹⁰ See *Proceedings of the Third International Conference of the Digital Games Research Association (DiGRA)* ed. Akira Baba (Tokyo: The University of Tokyo, 2007).

negative. The promotional material provided by the computer game industry itself lauds the fantastically immersive and realistic experiences of their games, especially in relation to increasingly sophisticated graphics and photorealism, whereas much mainstream media are often found engaging in the current moral panic surrounding many computer games, fearing that children will become so immersed in the new worlds they become unable to tell fiction from reality.

The question regarding immersion in computer games is related to the issue of immersion in fiction in general, and it is this element of fiction that makes immersion a more complex problem than the mere observation that one's body is surrounded by water. Computer games, like theatre, literature, painting and cinema, attempt to construct fictional worlds and narratives, and allow players to explore and experience these through specific means, at the heart of which lie increasingly sophisticated technologies. I have chosen to begin by exploration of the experience of computer game-play questioning how the two concepts of immersion and interactivity are informed by and reliant upon technology, and how this technology again is informed by our embodied experience of the world.

This chapter thus concerns the relationship between the body and immersion, especially in relation to interactive new media technologies. The chapter also considers the implications a theory of player experience based on embodiment has for our understanding of the relationship between immersion, interactivity, fiction and reality. Looking to technologies such as virtual reality and cybernetic organisms, we can begin to argue that in computer game play, the experience of playing can be understood through a consideration of the body.

Rez -immersion and interactivity

Let me begin by introducing a game that has achieved something akin to a cult status within the computer game community, and which can very much be seen as an exploration of the immersive possibilities inherent within games. *Rez* was released in Japan in 2001 for the Dreamcast and Playstation 2 consoles. It came out in Europe and the USA in 2002. The game was developed and published by Sega and is remarkable in that it has a relatively well-known and named lead designer, Tetsuya Mizuguchi.⁹¹ The game received substantial critical acclaim but was not commercially successful, and was discontinued after a year. It nevertheless began to thrive as a cult phenomenon, no doubt partially due to the release of a special edition pack containing a 'trance vibrator', a feedback device that pulsates according to the rhythms of the game and movements of the player, which was quickly adapted by gamers as a sex toy. The game also became popular in nightclubs, which used the psychedelic graphics as an aesthetic and visual form of background display on their dance floors. In 2008 *Rez HD*, a high-definition version of the game remade by Mizuguchi, was released on Microsoft's Xbox Live Arcade network. Mizuguchi stated that it was basically the same game, only with much better graphic and surround-sound capabilities, and that technology had finally caught up with his original vision.⁹²

Rez is often mentioned in articles arguing in favour of the artistic and expressive potential of computer games. In fact, it is mentioned so frequently that in

⁹¹ With the exception of a very small number of designers, it is still uncommon in the computer game industry to have individual designers touted as part of the game's promotion.

⁹² Rob Fahey, "Q Entertainment's Tetsuya Mizuguchi" *Eurogamer*, 12.06.08
<http://www.eurogamer.net/articles/q-entertainments-tetsuya-mizuguchi-interview> (accessed 04/01/10).

a recent article from the Digital Games Research Association (DiGRA), Julian Kucklich somewhat acerbically accused academics studying computer games of only writing about the “same five games”⁹³, of which *Rez* was one. Although the field of game studies is still young, it would be reasonably safe to predict that in a future where the scholarly study of computer games is more established, *Rez* will be counted as part of the 'canon' of early important work.

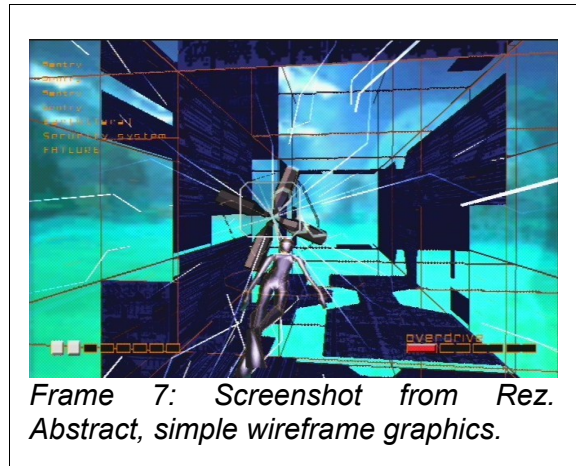
The premise of *Rez* is relatively simple. The game is set at some unknown point in the future, within a computer network known as the K-project. Control over data flow within the K-project is maintained by an Artificial Intelligence (AI) called Eden. At the start of the game, we are informed that Eden has begun developing consciousness, and is becoming overwhelmed with the knowledge and understanding she possesses. As a result she is shutting herself down. The player takes on the role of the protagonist hacker, who must traverse various networks and paths, destroying a number of viruses, bots and firewalls, in the attempt to reach Eden's central processing core and reboot her.

The plot of *Rez* is one found frequently in science fiction: the consequences of AI becoming self-aware. Arthur C. Clarke's *Space Odyssey* (1968) and its subsequent film adaptation by Stanley Kubrick introduced HAL 9000 as a modern embodiment of the fear and fascination AI holds, whereas *The Matrix's* Agent Smith (1999) gave it a new face for the millennium generation. In computer games, fighting against AI gone awry is a common plot device, most recently exemplified by the immensely popular cult game *Portal* (2007), where the player is led through a series of challenges by an AI know as GlADOS, who reveals an increasingly sinister

⁹³ Julian Kucklich, “Game Studies 2.0”, *DiGRA Hardcore* 13/09/06, <http://www.digra.org/hardcore/hc12> (accessed 04/01/10).

persona as the game progresses, culminating in a final battle for survival between the player and the AI.

It is however not the plot of *Rez* that has been the main focus of the attention given to it, but rather its innovative gameplay mechanisms. The game combines its thumping techno rhythms and minimalist wireframe graphics with an intentionally tweaked interactive gameplay mode in order to create a fully immersive environment. The soundtrack and graphics start out as extremely basic, and become more complex as the game progresses, ending up in a psychedelic trance environment in



Frame 7: Screenshot from Rez. Abstract, simple wireframe graphics.

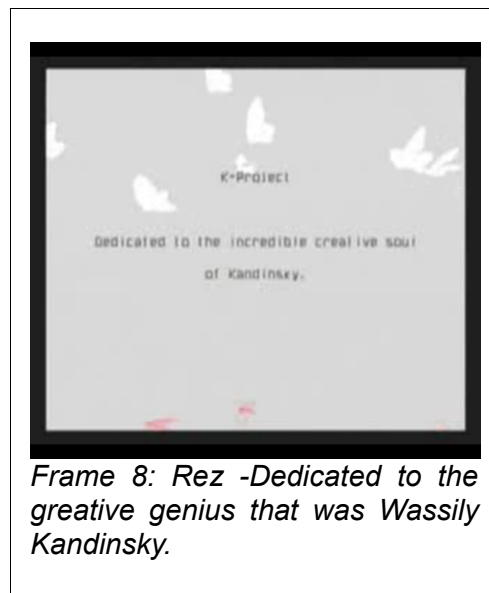
the final showdown with Eden. Mizuguchi has on several occasions stated that the explicit intention behind his design is for players to “experience synaesthesia”. This statement is also echoed in the promotional material for the game. The gameplay in *Rez* belongs to the genre known as the 'rail-shooter', meaning that it is a shooting game in which the movement of the player is quite restricted. The player is represented on the screen in the form of an avatar, which, depending on the level of strength the player is at, takes on various appearances. The player is not able to control her movements within the three-dimensional environment she is in, instead she simply moves along a prescribed path. As the player advances through each level she encounters various enemies which she must shoot before they hit her or shoot back at her. Although the player cannot move spatially, she is able to turn her vision around 360°, which is necessary as enemies approach from all angles.

The sound that appears when an enemy is shot is designed to seamlessly fit in with the overall soundtrack of each level, and forms the basis of the immersive experience. Different enemies yield a different sound as they are defeated, and each sound is programmed to appear at the exact moment of a beat in the background music, as opposed to in real time. The rhythm is however fast-paced enough for the beat to appear to be heard at the moment of pressing the button to shoot. The player's actions within the game thus determines, to a certain extent, the development of the soundtrack. In addition, the game incorporates 'rumble', meaning the controller handled by the player vibrates according to the beat of the rhythm, whenever an enemy is shot. The sonic and haptic feedback that is created following the actions of the player create a strong sense of 'being there', as the player is not simply acting within an already created environment, but rather is actively involved with shaping the feel and sound of that environment.

Music plays a fundamental part in *Rez*, to the extent that the game is sometimes included in the category of 'rhythm-action games', a genre in which the purpose of game play is to perform actions in correspondence with music and rhythm. There are no sound effects in *Rez* outside of the soundtrack made up by background beat and player input, which pushes the music itself to the foreground of the gameplay experience. Several well-known Japanese and British DJ's and artists contributed to the soundtrack, which again may explain the cult-status the game has enjoyed in dance and clubbing scenes internationally. The rather simple, abstract graphics react to player input with various sound effects, as well as by occasionally releasing a cascade of colour and light. This, as well as the feedback rumble, make it appear as if one can 'see' and 'feel' the music, as the overwhelming techno soundtrack

becomes the means through which the game is experienced. This effect becomes the basis for the 'feeling of synaesthesia' that the game purports to bring forth in the player.

Mizuguchi dedicated *Rez* to Wassily Kandinsky, the 20th century avant-garde painter and theorist who was famously himself a synaesthete. Kandinsky's writings, in particular his manifesto *Concerning the Spiritual In Art* (1911), are reflected throughout the gameplay of *Rez*. In fact, the working title of *Rez* throughout its development process



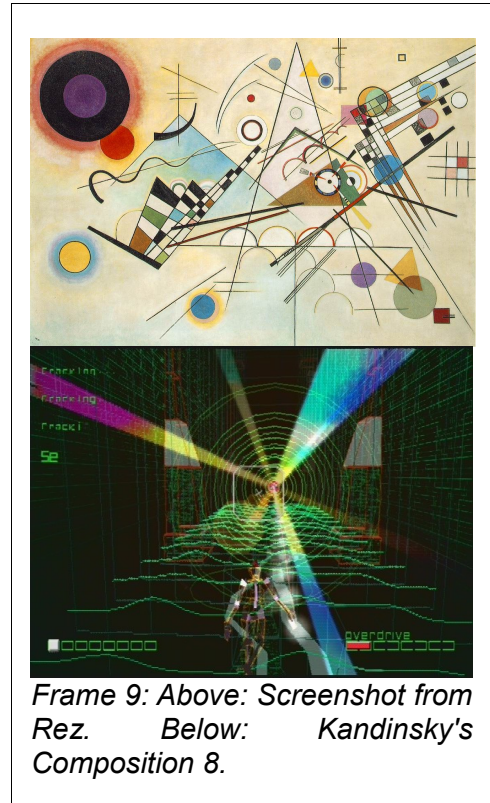
was 'project-K', after the painter.⁹⁴ When the game was given its name, the working title was reversed and included in the game as the name of the network in which the game takes place.

Kandinsky wrote extensively on the phenomenological effects of colours, lines and shapes, and the various ways these combine to provoke a sensory experience. For instance, in the case of sound and colour, he argues the case that “our hearing of colours is so precise that it would perhaps be impossible to find anyone who would try to represent his impression of bright yellow by means of the bottom register of the piano, or describe dark madder [sic] as being like a soprano voice” whereas in relation to taste, he states that “one might assume that, e.g., bright yellow

⁹⁴ Douglas Brown, “Rez: An Evolving Analysis”, *Refractory* vol. 13, <http://blogs.arts.unimelb.edu.au/refractory/2008/05/24/rez-an-evolving-analysis-douglas-brown/> (accessed 04/01/10).

produces a sour effect by analogy with lemons”.⁹⁵

The embodied sensations provoked by works of art remained a concern to Kandinsky throughout his life, and were fundamental to his theory of the spiritual nature of art. He was also an accomplished musician, and among his most famous paintings are the ten 'compositions' he created throughout his career, of which only the final seven remain. These are abstract paintings that invoke the relationship between colour and sound, appearing to the eye as visual soundscapes. Here the relationship to Mizuguchi's design becomes clearer. As Brown notes in relation to Kandinsky's compositions, “Rez takes this concept and envelops it into gameplay, giving the player the agency of Kandinsky’s artist, surrounded by and yet in control of the audio-visual continuum”.⁹⁶



Frame 9: Above: Screenshot from Rez. Below: Kandinsky's Composition 8.

In addition to the audiovisual aesthetic of *Rez*, the haptic feedback of the rumble also invokes the senses of the player in order to emphasise the immersive nature of the game. Rumble is usually used in computer games in order to provide contextual feedback, meaning it is dependent on certain things happening in games. Often, rumble is used to signal that a player is being shot at, or has died, which

⁹⁵ Wassily Kandinsky, “Concerning the Spiritual in Art” in *Art in Theory*, ed. Charles Harrison and Paul Wood (Oxford: Blackwell, 2003), 88-89.

⁹⁶ Brown, *Rez*: “An Evolving Analysis”, online.

makes it an irregular and disruptive form of feedback, albeit effective when experienced within a specific context. In *Rez*, rumble is used in conjunction with the overall rhythm of the game. The strength and frequency of the rumble is tied in with the player's actions, to the extent that some players argue they have improved their skills more by understanding the rhythm of the game than the movement of on-screen enemies. Ian Bogost refers to the rumble in *Rez* as providing a form of sonic texture, arguing that “the abstraction and immoderation of sensation in *Rez* offers an extreme example of computer game texture, one few games could or should replicate.”⁹⁷ In traditional painting and visual art, texture refers to the surface quality of a piece, to how it feels, or how it looks as if it would feel. Depending on artistic movement and convention, texture can be both simulated, i.e. made to appear in a specific way through painting techniques, but also actual, as when certain painters, particularly of the early 20th century avant-garde, would incorporate material into their paintings to provide texture. Texture refers to the sensation of touch, and *Rez*, despite being 'immaterial', “a collection of data presented on a screen”⁹⁸, is a game that lets the player touch it, and then touches back.

Mizuguchi has argued that *Rez* should be seen as an 'experience game'. The purpose behind the game is to draw upon the basic features of computer games, the feedback between hardware, software and player, to create a unique experience of gameplay itself. To again draw a comparison with painting, at the turn of the last century, artists began looking inwards, questioning established ideas of perspective, abandoning the notion of representing an external reality. Painting instead became

⁹⁷ Ian Bogost, “Persuasive Games: Texture”, *Gamasutra*, 07/05/08, http://www.gamasutra.com/view/feature/3652/persuasive_games_texture.php?page=4 (accessed 04/01/10).

⁹⁸ Rob Fahey, “Q Entertainment's Tetsuya Mizuguchi”, online.

preoccupied with itself. Similarly, *Rez* is fundamentally about the relationship between game and player, between immersion and interactivity. As such, it dwells on the 'pure' idea of gameplay, much like Kandinsky's paintings were created as explorations of the pure meaning of colour, shapes and lines.

The self-reflexivity of *Rez* becomes particularly clear during the final stage of the game, when the AI begins to 'speak' (using the medium of text rather than sound). As the player traverses the final layer of firewalls, Eden recounts the story of how humanity developed, from dwelling in the ocean to conquering space, ending her story



Frame 10: Who is playing who?
Screenshot from the final battle in Rez.

with the question “who am I?”. The player is then able to break into Eden's main core, where she is met with the question “who are you?”. As Brown concludes in his analysis of *Rez*, “the ultimate question the game poses is this: are you playing it, or is it playing you?”⁹⁹ It is within this paradoxical conjunction, between agency and loss of agency, that the complex notion of gameplay begins to emerge.

The storyline and gameplay mechanics of *Rez* serve in the attempt to create an experience as intense and embodied as possible. The synaesthesia at the heart of the game evokes Merleau-Ponty's central thesis concerning the role of the body in experience, and the technological basis of this experience places *Rez* alongside a number of technologies that have become more prominent as computing power has

⁹⁹ Brown, “Rez: An Evolving Analysis”, online.

increased, in particular virtual reality (VR).

Virtual Reality

VR denotes a technology that allows users to interact with a computer-generated environment. This environment can be either entirely digitally constructed or feature images and footage from the physical world captured with a camera. The environment is three-dimensional and allows for the user to experience a sensation of being 'inside', immersed in the images, as opposed to viewing them from the outside, through a screen. Despite the novelty of contemporary VR, due to its reliance on digital technology and imagery, it is not an entirely new phenomenon. Throughout human history we find examples of technologies created to trick us into believing the representations we are experiencing are in fact 'real', or at the very least aiding us in our make-believe. Oliver Grau begins his study of virtual art with the now famous panorama frescoes dug out in the ruins of Pompeii, where the viewer would stand in the middle of a circular room and be surrounded by a continuous scene.¹⁰⁰ The post-war era saw various experiments with Smell-o-Vision cinema, in which viewers were treated to different scents secreting from the back of their seats, in order to 'smell' the various objects being displayed on the screen. Recent reports from the computer game industry suggest that developers are experimenting with ultrasound to generate advanced haptic feedback, going beyond mere rumble to allow players to trace the shape of virtual objects with their hands.¹⁰¹ More mundanely, even such everyday experiences as going to the cinema, or listening to music at home, are constantly

¹⁰⁰ Oliver Grau, *Virtual Art, from Illusion to Immersion* (Massachusetts: MIT Press, 2003), 25.

¹⁰¹ BBC News, "Ultrasound to give feel to games" *BBC Online*, 10.10.08, <http://news.bbc.co.uk/1/hi/technology/7593444.stm> (accessed 04/01/10).

changing due to new technologies being developed that attempt to create a more 'optimal' embodied experience, such as 3-d vision or surround-sound. What characterises all these technologies is their direct relationship with and intention to act upon the body of a user.

Although the goal of these techniques has not always been to create the appearance of a complete transportation into a different setting, they illustrate the role technology plays in relation to embodied perception. To that end, the most thorough of these technologies are those that purport to the creation of a complete, virtual, 'reality'. The term virtual reality first appeared in Artaud's *The Theatre and its Double* (1938), where he coined the expression 'la réalité virtuelle', and was used sporadically over the next five decades. With the explosive development in computing techniques and hardware, as well as the introduction of computers into the general cultural consciousness, in the late 1980s, VR began to increasingly appear as a viable possibility. The 1990s saw a research boom in interest into VR techniques, spurred on by the publications of books such as Howard Rheingold's *Virtual Reality* (1991), as well as influential fictional works such as Neal Stephenson's *Snow Crash* (1992).

As a cultural phenomenon VR is surrounded by a large amount of 'hype' and romanticism. Theories of VR can be found at each end of the utopian and dystopian scales: VR will finally liberate us from the dreary physical confines of our bodies, and could even just be the first step towards eternal life through technologies for uploading the mind into a cybernetic network¹⁰², or alternatively, VR will lead to a form of mass enslavement by technology, as described numerous times throughout

¹⁰² This idea is most famously presented in Ray Kurzweil, *The Singularity is Near* (London: Gerard Duckworth & Co Ltd, 2006).

the 20th century, from E. M. Forster's *The Machine Stops* (1909), to the Wachowski brothers' aforementioned *The Matrix* (1999). In academic theory, VR has been used as a conceptual tool for re-engaging in philosophical debates concerning the nature of reality and our understanding of it¹⁰³.

The reality of VR as it exists in its current technological form is somewhat less spectacular than that found in science-fiction. Although new techniques are being developed continuously, it remains a mainly visual experience. The user is presented with an environment that is projected to her through various forms of technologies which convey the illusion that the simulated environment is 'real'. This environment can be both a replication of an actual, physical real-world scenario, as is the case with much training technologies such as flight simulators or medical surgery environments, or it can be completely fictional, as is the case with more game-like VR environments. VR technologies can be worn, using a head-mounted display and data gloves which a user can put on and interact through, or they can be static rooms, such as the CAVE (Cave Automatic Virtual Environment), which a user must enter into and be confined within. What they have in common is the attempt to project a believable sense of presence in a simulated environment onto the user, by acting upon the users body and senses. As Lev Manovich argues, VR “establishes a radically new type of relationship between the body of the viewer and the image.”¹⁰⁴ In order to move around in the virtual space, the user must move her body around in physical space. The virtual environment she is experiencing is reactive to input from her body, and acts upon her body in return. VR projects an embodied sense of 'being

¹⁰³ See Howard Rheingold, *Virtual Reality* (New York: Summit Books, 1991) for a well-known example of early academic interest in the phenomenon.

¹⁰⁴ Manovich, *The Language of New Media*, 109.

there'. The significance of this becomes clearer if we consider the importance of our senses in relation to our understanding of the world around us.

The Senses

Generally, we think of our senses as five passive receptors of external stimuli, the five being eyes, ears, nose, tongue and skin. In his seminal book *The Senses Considered as Perceptual Systems* (1966) J. J. Gibson proposes to regroup the senses into what he terms five 'perceptual systems'; these being the 'basic orientating' system, the auditory system, the haptic system, the taste-smell system and the visual system¹⁰⁵. Gibson affords these systems an autonomous, active agency, arguing that there is more to the senses than their function as transmitters of neurological input to the brain, and that they in fact have a crucial role in equipping us with knowledge of the external world. As he argues. "there are two different meanings of the verb *to sense*, first, *to detect something*, and second, *to have a sensation*."¹⁰⁶ The former meaning denotes an outwards-orientated attitude, giving the senses active agency in the process of orientation, whereas the latter implies a more passive, reception-orientated stance. Gibson argues that both meanings apply to the sensory system, and that science has traditionally only given consideration to the notion of the senses as passive receptors. Thus his project is to outline the active, perceptual nature of the senses. He distinguishes between the type of input to the nervous system that effects sensation and the type of input that effects perception, and argues that perception through the sensory system is a form of information detection that operates

¹⁰⁵ J. J. Gibson, *The Senses Considered as Perceptual Systems* (Sydney: George Allen & Unwin Ltd, 1966), 50.

¹⁰⁶ *Ibid*, 1.

interactively with the brain and with the other perceptual systems. In Gibson's words:

“instead of looking to the brain alone for an explanation of constant perception, it should be sought in the neural loops of an active perceptual system that includes the adjustments of the perceptual organ. Instead of supposing that the brain constructs or computes the objective information from a kaleidoscopic inflow of sensations, we may suppose that the orienting of the organs of perception is governed by the brain so that the whole system of input and output resonates to the external information.”¹⁰⁷

To that end, Gibson considers the various ways stimuli are received. He distinguishes between perception and proprioception, where perception is concerned with the environment and external stimuli, and proprioception is concerned with the body and internal movement. Similarly, he categorises the notions of 'imposed stimulation', which is impacted on a passive receiver, and 'obtained stimulation', which is achieved through action. Through categorising the various ways in which the senses and the body receive, interpret and act upon its surroundings, Gibson shows the importance of the senses in not only receiving input from, but in understanding, one's immediate environment. The senses are our main means for both acting in as well as upon the world. Seeing the senses as perceptual systems thus makes it possible to examine the relationship between the senses and the various

¹⁰⁷ Ibid, 5.

technologies created to project immersive experiences, as the idea of perceptual systems emphasises the role of the senses in asserting the reality-status of our surroundings.

One problem with VR is that it has been known to induce motion sickness in users¹⁰⁸. This occurs when one perceiving organ, i.e. the eyes, are presented with one 'reality', and a second, i.e. the body and its experience of motion and position in space, is receiving another, thus creating conflicting input about the user's surroundings. What this however illustrates is the dependence we have on our bodies for orienting ourselves spatially. As Gibson observes, “the terrestrial animal maintains permanent orientation to the earth – that is, to gravity and the surface of support”¹⁰⁹. If this orientation is disrupted, the result may be confusion, dizziness and nausea, and potentially even graver consequences. This is a well known phenomenon in flight, a field which has developed an extensive understanding of how the human body functions as a means through which we understand our external world. Because pilots operate in flight, rather than on terra firma, they are subject to various forms of sensory illusions, some of which can be extremely dangerous. The human body is made for operating on the ground, and a prolonged unnatural state such as being in flight may cause the senses to readjust themselves, which again may lead to a false perception of direction or distance. This is the case for instance in the dreaded 'graveyard spiral' scenario, in which a pilot who has been banking in one direction for a prolonged amount of time, usually more than 20 seconds, will have readjusted her sense of balance in her vestibular system (the inner ear) and no longer

¹⁰⁸ See Joseph LaViola, “A Discussion of cybersickness in virtual environments”, *ACM SIGCHI Bulletin* vol. 32:1, January 2000, 47-56.

¹⁰⁹ Gibson, *The Senses Considered as Perceptual Systems*, 59.

experiences the plane as turning. When she subsequently levels, the experience will be that of banking in the opposite direction, and unless she is able to trust the plane's instruments rather than her own senses, she may try to 'level' again and thus go back into the original banking direction. The danger in this is that while banking, the plane is losing altitude, and with the banking back and forth, the plane will accelerate and sharpen its turning. Unless the pilot is able to readjust, she will go into a spiral, unaware that she is doing so, which may continue until the plane impacts the ground.

The example of flight illustrates the way the basic orienting system relates to its environment, and the importance of our senses in providing us with knowledge of our environment, as well as helping us navigate it. In VR, it is the stimulation of the senses, combined with the creation of a designed environment, that forms the basis premise for the illusion of this other form of 'reality'. The amount of ideas, both fictional and factual, surrounding VR as a phenomenon can however make it complicated to determine where the line is drawn between what actually exists and can be achieved, and what is a romantic (or nightmare-like) ideal of what might be. The ideal, utopian VR technology would presumably be able to create a perfect illusion of all aspects of sensory interaction with the environment, stimulating not only the auditory and visual systems, but also the haptic system, the basic orientating system, and finally the taste-smell system. With the possible exception of taste¹¹⁰, one may find examples of all of these systems having been at some point implicated in immersion and VR technologies, yet purely audiovisual technologies remain the most common.

¹¹⁰ Although there are no examples of what we usually consider VR or immersion technologies that incorporate taste activation, it is of course possible to argue that the existence of artificial flavouring in many everyday food items makes taste the most common and accepted form of illusory stimulation.

The importance of technology reveals a paradoxical gap between the present actuality and the romantic ideal of VR as well as computer games. The ideal of VR is as a technology that works as a means for escaping the confines of the body, yet it is a technology that is entirely created around the body. The ultimate end of VR is the apparent disappearance of hardware. Computer mediated reality should become so 'real' that there is no awareness of the technology that exist to mediate it, yet in order to achieve this one requires hardware of a more sophisticated nature than what currently exists. Janet Murray's future vision of the holodeck as a space in which users can enter and star as the main protagonist in any story of their choosing emphasises this paradox. There is no awareness of technology inside the holodeck, yet it itself is a massively complex technology.

Virtual Experiences

With the steady rise of computer games into mainstream contemporary culture, comparisons between games and VR have inevitably been drawn. Computer games, like VR, also act on the senses to an unprecedented degree, as the example of *Rez* illustrates, and despite games' status as entertainment media, they are profoundly tied in with technological advances in both hardware and software development. Where games differ from VR, however, is in their unclear positioning between science and the arts. This positioning can be illustrated by the fact that most mainstream media feature computer game news, reviews and commentary in their science and technology sections, rather than their art sections, although this appears to be slowly changing. Computer games draw upon centuries-long traditions of

competition, drama, gambling, storytelling, myth and chance, as evidenced by the current academic debates surrounding them. They also do not merely present a user with a visual environment in which to experience, but with a fictional world to explore and progress through.¹¹¹ Despite their novelty and the continued lack of understanding of computer games in wider culture, computer games are the latest addition to the various ways in which we have created worlds to experience and within which to tell stories since the beginning of humankind.

As Marie-Laure Ryan notes in her book *Narrative as Virtual Reality* (2001), a pervading theme in literature and film throughout the last century has been the notion of dwelling in fiction.¹¹² Alice falls through the rabbit hole, while Neo is plugged unwittingly into the Matrix. It is a theme found both within fiction itself, as well as in our everyday language. When we describe the feeling of immersion we claim to get 'lost in a book', or 'carried away' by a film, forgetting our immediate surroundings and becoming absorbed in another, fictional, world, experienced as spatially and temporally separate from the one we are physically confined to. And although we understand perfectly well the difference between these two worlds, the relationship between fiction and physical reality is complex: we cry at the death of a character yet do not call the police to alert them to a murder. Coleridge first put a name to this complexity in 1817 when he described the way in which readers 'agree' to be taken in by a work of fiction as a "willing suspension of disbelief".¹¹³ This agreement is present whether the work of fiction belongs to the realistic or the fantastic genre, and is a basic necessity for immersion in fiction to occur. The 'willing suspension'

¹¹¹ Again, it should be emphasised that this does not apply to all computer games, but it is relevant to the discussion at hand here.

¹¹² Ryan, *Narrative as Virtual Reality*, 50.

¹¹³ Anthony Ferri, *Willing Suspension of Disbelief: Poetic Faith in Film* (Maryland: Lexington Books, 2007), ix.

suggests that the reader or viewer remains in control of her experience, and is able to at any moment 'pull herself out' of the world she has entered into. Nevertheless, immersion remains a problematic and contentious concept.

In the modernist era, immersion in fiction has been viewed with hostility due to a fear that the immediacy of the fictional experience will reduce contemplative faculty. The modernist aesthetic has often involved foregrounding the formal and stylistic features of a medium, purposefully alienating the reader or viewer from the text. The great artistic traditions of the 20th century moved further and further away from mimetic representation, through abstract expressionism and conceptual art, inevitably resulting in the ultimate abstractions of Malevich's *Black Square* and John Cage's *4.33*. Narrative or immersive fiction has been relegated to 'low', or popular, culture, where it nevertheless has continued to thrive. One reason why immersive fiction has been relegated to the lower end of the cultural hierarchy in recent decades may be that the immediacy of an immersive experience is related to the embodied and sensory experience of 'being there', as opposed to the more 'cerebral' ideal of the contemplative, alienated subject in modern art and fiction. The popularity of immersive fiction thus speaks to the continued interest in 'there', in being able to actually experience other worlds or other realities.

Immersion has also been treated with apprehension due to its close relation to addiction. Where do we draw the line between being 'lost in a book' and 'trapped in a book'? Computer games, in particular, are often blamed for causing addictive behaviour in young people. The portrait of the stereotypical 'gamer', sitting mesmerized in front of the screen, uninterested in the surrounding world, engaging with virtual violent acts, is frequently found in various media. It is a problematic

stereotype which highlights the complicated relationship between immersion, addiction, 'high' and 'low' culture. Consider the fact that a reader of Tolstoy, sitting mesmerized with a book, uninterested in the surrounding world, engaging with fictional violent acts, would be perceived as a positive act to be encouraged, and we can begin to see the paradoxical cultural attitudes and perceived notions of valuable behaviour that surround computer game play, as well as immersion in general.¹¹⁴

Immersion in various media is naturally dependent on the type of media one is experiencing, and again this highlights the importance of the senses in the experience of audiovisual media. Although the act of reading can be a powerfully immersive experience, it remains a purely cognitive involvement with the represented environment or story. According to Janet Murray; “our brains are programmed to tune into stories with an intensity that can obliterate the world around us”¹¹⁵. She recognises the fear this has traditionally been viewed with throughout the history of western culture, from Plato's concern with poetry as a danger to his republic, to Cervantes' story of Don Quixote's madness stemming from the inability to tell fiction from reality. Audiovisual media, however, takes the brain's active involvement in creating an immersive experience a step further, and act on our bodies as well as on our cognition. Audiovisual media are also inherently dependent on various forms of technology and hardware in order to engage with the body. As Ryan states: “in contemporary culture, moving pictures are the most immersive of all media”¹¹⁶, due to their ability to combine spatial and temporal representation with the full detail of photographic pictures and natural language.¹¹⁷ In fact, it would be

¹¹⁴ It is not my intention here to argue the case of 'value' for low or popular culture, in particular computer games. Here, I am interested in audiovisual fictional representation generally.

¹¹⁵ Murray, *Hamlet on the Holodeck*, 98.

¹¹⁶ Ryan, *Narrative as Virtual Reality*, 120.

¹¹⁷ This again may explain the higher cultural status of print literature. A reader will have to mentally

possible to argue that immersion in text-based media and in audiovisual media are two substantially different experiences, as the former is dependent on the cognitive shaping of mental images, whereas the latter is dependent on the interpretation and understanding of already-created images presented to the viewer on a screen. Thus, one can argue that the experience of immersion in audiovisual media is closely dependent on embodied understanding, as well as on cognitive understanding.

It is however important also to emphasise the difference between established audiovisual media, such as film, and computer games. As both computer games and films appear as moving images on a screen, we tend to easily make comparisons between them. It is a comparison that is often encouraged by the computer game industry, in its heavy advertising of 'photorealistic' graphics, and epic, 'cinematic' narratives. This is understandable, as any new medium that struggles for cultural legitimacy tends to mimic an established predecessor. The first decades of photography were dominated by portraiture and landscapes, as the new technology was attempting to show itself as worthy as the established art of painting by simulating the most common and celebrated painting techniques. Similarly, computer games mimic many established techniques and styles established by cinema. The two however differ as technologies, and thus the technological means for creating immersion in computer games must be considered on their own terms.

In a cinema environment, everything is done to make the viewer 'forget' her active body. She is sat in complete darkness and silence, in order to make the

construct images in her head of the various scenes she is perceiving, whereas a film viewer, or computer game player, will have these images presented to them on a screen, thus requiring less effort on their cognitive behalf. This, at least, is generally the accepted view, but it is not without problems. Recent theories of film and visual art have emphasised the cognitive efforts espoused by the viewer of audiovisual material, suggesting that the division between an 'active' construction of mental images from text, and a 'passive' perception of visual material, is less clear than it may appear at first.

reception of audiovisual input optimal. The cinema experience engages two of her senses: the eyes and the ears. In contrast, as the example of *Rez* shows, the involved nature of gameplay allows for the transmission of signs to a third sense: that of haptics, meaning the sensation and act of touch. The difference thus is that of the 'removal' of the body against the interactive involvement of the body, yet in both cases the importance of the body remains.

This is not to say that the experience of viewing a film is one of disembodiment, in fact, there has been an increasing focus on haptics in film studies in recent years¹¹⁸, forming part of an attempt to move away from the textual analysis of (post)structuralism that has dominated the humanities since the 1960s and return to a consideration of the aesthetic experience in art.¹¹⁹ Proponents of haptics and the study of embodiment in the cinema viewing experience are interested in describing the bodily sensations that arise from various scenarios presented on the screen. Whereas previously the notion of an embodied response to visual stimuli would be limited to the genre of pornography, recent film scholars argue that all moving images provoke and act upon the haptic system as well as the visual and auditory.

There is however a difference between the ways in which the haptic system works in cinema viewing and gameplay. This difference can be illustrated by an example given by Vivian Sobchack in her essay *What My Fingers Knew*.¹²⁰ In it she describes the visceral reaction she has to viewing a scene from Jane Campion's film *The Piano* (1993), in which the main protagonist Ada is playing the piano. The

¹¹⁸ See especially Laura Marks, *The Skin of the Film: Intercultural Cinema, Embodiment and the Senses* (North Carolina: Duke University Press, 2000) and Vivian Sobchack, *Carnal Thoughts: Embodiment and Moving Image Culture* (California: University of California Press 2004).

¹¹⁹ See for instance Michael Berube (ed.) *The Aesthetics of Cultural Studies* (Oxford: WileyBlackwell, 2004) for a discussion of the relationship between the relationship between cultural studies and aesthetic theory.

¹²⁰ Sobchack, *Carnal Thoughts*, 53-84.

camera closes up on Ada's fingers, and Sobchack knows, and feels the sensation of the ivory, of hitting the keys and moving her hands. At first the experience appears similar to the player who is experiencing rumble while playing *Rez*, she feels the rhythm and the subtle pounding of the movements she makes. The author viewing the scene in *The Piano*, however, much like the reader of a novel, performs a cognitive construction of an experience, based on previous experiences, memories and prompts from the images presented on the screen. The player who is hacking her way into Eden's central processing unit in *Rez*, on the other hand, is physically experiencing the environment in front of her through her fingertips.

The physical and sensory nature of the VR and computer game experience may appear liberating when compared to the darkness of the cinema theatre. The act of movement is an important metaphor of liberation, and thus when seen in comparison to the still-sitting reader or viewer it may appear that new technologies of immersion are giving users increasing freedom and agency. However, it can be argued that VR imprisons the body in a profound, albeit different, manner. Although the body is not immobilized, it is nevertheless tied intrinsically to technology. As Manovich notes when describing one of the earliest VR systems developed, “like today's computer mouse, the body was tied to the computer. In fact, the body was reduced to nothing less – and nothing more – than a giant mouse, or more precisely, a giant joystick.”¹²¹ The emotive language that surrounds both VR and computer games with regards to a discourse of liberation or enslavement can be difficult to escape, yet by focusing on the role of the senses in relation to technologies of immersion we can begin to develop an understanding of the traits specific to computer games. The

¹²¹ Manovich, *The Language of New Media*, 110.

environments projected onto a user by increasingly sophisticated technologies will always remain virtual, but the physical nature in which they are experienced allows us to move away from a cognitive and text-based understanding of immersion that has remained prevalent throughout the 20th century, and begin to understand the role of the body itself as a location for experiencing new fictional worlds.

The cyborg player

If, as Manovich says above, the body can be compared to a joystick, then considering it only as a means through which information is received gives us a limited understanding of embodied experience. In computer game play, the joystick, after all, is a piece of hardware that is used to interact with the virtual environment presented to the player on a screen. If the purpose of immersive technologies give the player the sensation of interacting with an environment that is responsive, present and genuinely 'there', it should be noted that the gameplay experience is reliant not only on sensorial output, on being 'touched' by the game, but also on player input, on being touched back. The body is not only receiving input, but interactively returning output back. The gameplay experience of *Rez* is built around this fact, that the player acts and reacts according to the rhythm of the game, but also that the game acts and reacts according to the behaviour of the player. A useful metaphor for game play, then, can be found in the cyborg.

If virtual reality is one of the defining concepts of late 20th century science fiction, then the notion of the cyborg is not far behind. The name is an abbreviation of the description 'cybernetic organism', and as such denotes a being that is both

machine and flesh. We have become accustomed to cyborgs through modern science fiction. Both literature and cinema contain numerous examples of famous cyborgs, always super-human in their abilities and desire to (usually) either destroy or save humanity. However, again, the reality of the cyborg is less spectacular than what is portrayed in fiction, albeit not necessarily less fantastical. As William Mitchell argues, we are all cyborgs now, through the myriad of technologies with which we surround ourselves, enhance ourselves and extend ourselves.¹²² When I put on my glasses in the cinema I enhance my vision in order to read the screen better, when I listen to my iPod on the bus I transfer my hearing away from my immediate surroundings onto sounds recorded in another time and place. Other people use cybernetic technology on a constant basis, as is the case with the use of prosthetic limbs, and some completely rely on it for their survival, in the form of pacemakers.

The cyborg has become an oft-used metaphor in critical theory interested in the emerging relationship between humans and machines. Most famous is perhaps Donna Haraway's claim that she would 'rather be a cyborg than a goddess' in her cyborg manifesto, in which she explores the liberating potential human-machine merging might have for traditional gender dichotomies. Her argument represents a certain utopian stance in contemporary critical theory, in which machines or computers are seen as tools for liberating the human from the confines of the body.

A similar desire to escape the body, and belief in the computer's ability to allow for such and escape, can be found in computer game culture. As Morse argues: 'for couch potatoes, video game addicts and surrogate travellers of cyberspace alike, an organic body just gets in the way.'¹²³ If I may for a moment pertain to stereotypes:

¹²² William J. Mitchell, *City of Bits* (Massachusetts: MIT Press, 1995), 28.

¹²³ Quoted in Deborah Lupton, "The Embodied Computer/User" in

picture the lair of the archetypal gamer: a teenager's bedroom where everything is organised to allow for ease of access to a number of screens and keyboards, a chair that rolls easily between desks and perhaps a cup holder with a straw to allow for basic sustenance without the need to remove fingers from the task at hand. At first glance the interpretation of such a scenario seems to be that the action is taking place somewhere else. The player has created a number of mechanisms for escaping the physical body with as much ease as possible, and has appropriated another, better, body in the form of her avatar. Similarly, a lot of promotional material espousing the thrills of new computer games also alludes to the notion of escaping the body. When attracting new players the onus is usually on who one could become, on being a hero or villain, someone important and attractive.

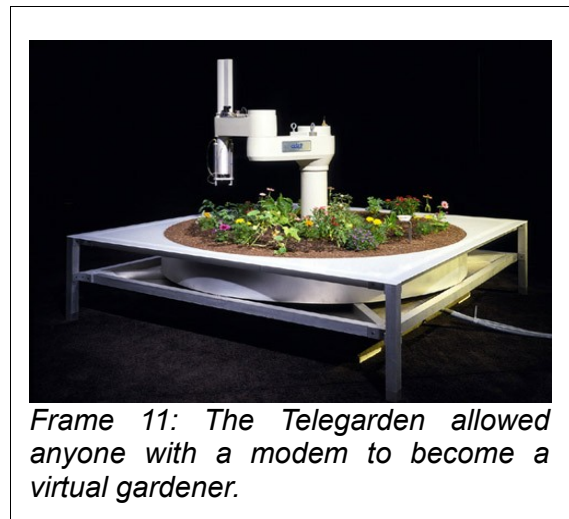
At first glance then, the attraction of the cyborg appears to rely more on the 'cybernetic' and less on the 'organism'. Yet there is another aspect to the cyborg that similarly has been used to describe our relationship with modern computer technology: the notion of extending the body. Extending the body through technology is a common feature of science fiction, and is often portrayed in a more negative light than the idea of escaping the body. An early example of the idea can be found in E. M. Forster's short story *The Machine Stops*. In this rather sinister story, humanity has become reliant upon technologies to the extent that they do not move, and live out their lives in small confined rooms, communicating only through technology. They never meet in the flesh.

A less sinister example of the idea of human embodied extension, taken from the 'real world' is the art project 'the telegarden', which is often seen as an example of

Cyberspace/Cyberbodies/Cyberpunk: Cultures of Technological Embodiment ed. Mike Featherstone and Roger Burrows (London: SAGE, 1996), 100.

early networked art. The telegarden project was first developed at the University of Southern California under Ken Goldberg and Joseph Santarromana. It went online in California in 1995 and was later moved to the Ars Electronica Centre in Austria in 1996. In 2004 the project ended and went offline. The telegarden itself was a small circular 'garden', a table with soil and seeds, attached to a camera and with a robotic arm. The camera streamed an image of the garden online, and allowed people to log in and control the robotic arm in order to plant seeds, water plants and watch the garden grow. Thus, anyone with a computer attached to the internet could become a cyborg gardener.

Recent developments in computer game hardware technology have made the notion of extending the body their focal point. A case in point is the relatively new Nintendo Wii console. It first entered the computer games console market in 2006, and upon release



Frame 11: The Telegarden allowed anyone with a modem to become a virtual gardener.

became the fastest selling computer games console of all time in the UK¹²⁴, despite its hardware capabilities being less powerful than its main competitors: Sony's Playstation 3 and Microsoft's Xbox 360. Rather than follow in the tradition of console development which stipulates that next-generation is defined by more powerful hardware, especially in a machine's graphics capabilities, Nintendo made the focus of its new console the controller interface, and the interactive nature of

¹²⁴ Greg Howson, "Wii is fastest selling UK console ever", *The Guardian Online* 30/08/07, <http://www.guardian.co.uk/technology/gamesblog/2007/aug/30/wiiisfastest> (accessed 05/01/10).

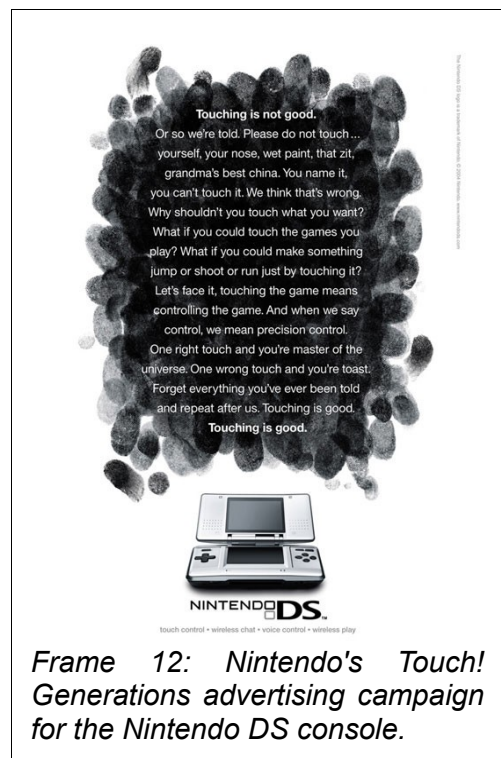
gameplay.

The Wii Remote controller, or 'wiimote' as it has affectionately been named, features motion-sensitive technology that allows for interaction with the game through 'natural' bodily movement as well as by the act of pushing buttons. The controller achieves this by incorporating infrared detection and internal accelerometers (a device that measures acceleration and gravity), which allows it to measure its own position in three-dimensional space in relation to an LED sensor placed on top of a TV screen. Movement by the controller is interpreted and presented as corresponding movement on the screen by the LED sensor. This means, for instance, that the act of holding the controller and swinging it like a tennis racket can be used as an interactive technique in a tennis game, allowing the gameplay to feel more 'natural', as opposed to making an on-screen character swing a tennis racket by pushing a combination of buttons. The appeal of this type of gameplay has proved very fortuitous, as the Wii has conquered markets and demographics not traditionally associated with computer games.

The 'wiimote' is not the first controller to incorporate natural movement as a gameplay mechanism. Such controllers have been in existence for decades. For the original NES console, gamers could purchase a peripheral, or novelty controller, known as the NES Zapper. The Zapper was a gun-shaped device that can be used on a number of games, of which the best known is the cult hit *Duck Hunt* (1984). Players would simply aim the gun at their television and shoot the ducks that came flying onto the screen, scoring points for each duck. Again, the Zapper allowed for more 'natural' gameplay than the more common act of pushing buttons or typing on a keyboard in order to activate an on-screen gun.

There are numerous instances of gaming peripherals attaining to 'natural' action in computer gaming history, and although they illustrate the desire to interact with a game in a more realistically embodied way, they have not incorporated the defining trait of the 'wiimote' -motion sensitivity. It is possible to find examples of experiments with motion sensitivity in gaming before the Wii¹²⁵, but none have made the breakthrough into the mainstream entertainment market that Nintendo has accomplished.

The Wii's success followed on from Nintendo's hand-held console, the Nintendo DS (the DS acronym standing for both 'Developer's System' and 'Dual Screen'), a follow-up to the Game Boy series, which was released in 2004. The DS features two screens, of which the lower is a touchscreen. The touchscreen's appeal lies in the ability to move away from interacting through buttons, and instead allows for a more direct access to the on-screen action. Nintendo has incorporated the DS in its 'Touch! Generations' brand, which features a



series of games that are created to appeal to a broad audience. The ability to move away from complicated button combinations as the main way of acting within a

¹²⁵ The first motion sensitive controller is believed to be 'Le Stick', released in 1981 for the Atari 2600 and Commodore 64 consoles. See "Le Stick -The First Motion Sensitive Joystick Controller", *Classic Video Games*, <http://classicgames.about.com/od/consoleandhandheldgames/p/LeStickProfile.htm> (accessed 05/01/10).

game has proven fruitful. Especially older demographics have become an important market for the DS, notably through the success of the arithmetic and logic based game *Dr. Kawashima's Brain Training* (2006) and a number of other puzzle and logic games following in its wake.

With the DS, the player is still limited to using her fingertips, but she can touch the game 'directly', rather than having to mediate through a keyboard. With the Wii console, however, the player's whole body becomes integrated into the gameplay. The 'wiimote' differs from earlier peripherals like the Zapper in that it itself is not shaped to appear like any specific object -it resembles any ordinary television remote control. There are peripherals that can be purchased for the controller to be inserted into, in the shape of for instance a gun or a steering wheel, but in essence the controller itself is an abstract object, and is given meaning through the interaction between a player's movement and the action taking place on the screen. This can be illustrated by the small game that is sold bundled with most Nintendo Wii consoles, *Wii Sports*.

Wii Sports is a sport simulation game that features a collection of five different genres: tennis, boxing, golf, baseball and bowling. The graphics are cartoon-like, as are the avatars which the player is able to customise through the Wii console's character-creation system. The game was developed specifically for the purpose of showing off the Wii's motion-sensitivity features, and is part of Nintendo's *Wii Series*. The series also includes *Wii Play*, *Wii Fit* and *Wii Music*, all of which consists of a series of mini games or exercises, without narrative or fictional content, who draw their appeal from the direct, motion sensitive gameplay and easy-to-learn interface which has allowed for non-traditional gamers to take up playing.

The gameplay of *Wii Sports* consists of using the 'wiimote' as a peripheral appropriate for the sport the player chooses. Thus, when playing the tennis simulator, the player will swing the controller like a tennis racket, and when boxing, the player simply holds the controller in her hand and boxes in the air. Both the controller and the console have audio output mechanisms that provide sonic feedback when the player 'hits' a virtual object, surrounding the player with sounds appearing to come from her immediate, actual space, increasing the embodied experience of playing a physical game of sport.

Like *Rez*, *Wii Sports* incorporates a 'tweaking' mechanism. In *Wii Sports*, an artificial intelligence system places the player's avatar in a position most advantageous for the move in hand. Thus, the player does not need to actually move her whole body back and forth to simulate her avatar's movement on a tennis court. Nevertheless, players frequently do move their bodies in a manner reminiscent of the actual, physical sport being played regardless of whether this is required by the system. Movement by the player when swinging her arm during a tennis game will be interpreted by the system as either a forehands, backhands, volleys, lobs, slices or spin depending on the speed, angle and movement of the controller. The actual movement by the avatar on-screen thus is the result of a combination of input from both the player's choice of controller-movement, and the AI system's choice of optimal positioning.

The Wii, as well as the handheld DS console, have become successful on the premise that they allow for the player to naturally extend herself into the game. She is allowed, as the promotional material states, to 'touch'. The 'wiimote' becomes a prosthetic limb, a part of the player's body that functions in order to give access to

the game. In the case of *Wii Sports*, there is not much learning involved -the game is made to allow for the player's knowledge of sports and innate embodied movements being the main mechanism of game-play.

There are two aspects to the cyborg, then, which appear to be mutually exclusive. A cyborg can be a technological form of extending the body, or it can be a technological means for escaping the body. What they both illustrate is the intrinsic importance of the body in relation to game play. What the cyborg metaphor, as well as virtual reality, illustrates, is that technologies which exist in order to give people an experience of a different reality are by necessity technologies that act upon the body. Whether a user of a VR environment is immobile and receiving input from a head-mounted display, or whether a computer game player is making physical moves that are displayed and recorded in another, virtual, space, the importance of the body as a location of experience remains.

There are, however, limits to this cyborg metaphor. Another difference between the two games alluded to above, *Wii Sports* and *Halo* is that the latter contains a narrative. Whereas the former is fictional to some extent, in that it allows the player to imagine being a sports prodigy, it is not game-fiction, a game with a narrative trajectory and conclusion, as such. *Halo* does not only offer the chance to escape the body, it offers the chance to experience another world and take part in an unfolding story as its main protagonist. I discuss this aspect of player experience further in the next chapter.

Summary: the body as hardware

The opening of this chapter asked what it means to be immersed. I have argued that immersion is intrinsically tied in with the body, from the basic notion of being immersed in water, to language-learning techniques in which one is 'immersed completely' in a new language and culture. In the fictional arts, the notion of immersion can also be understood through its relationship with the body. The body, essentially, is positioned within a technologically constructed representation of an environment. This observation leads us on to a consideration of reality and its representation. Seeing immersion within the context of the senses and their role in conveying our experience of the space we inhabit provides us with a conceptual approach for exploring our ideas of what constitutes reality. Commonly the boundary between fiction and reality is seen as clear, and the emphasis is on the reader or viewer to suspend her disbelief in order to get a meaningful experience from the fictional material she has in front of her. By considering the embodied experience of fiction this boundary becomes less clear. The eyes are really viewing images, and the ears are really hearing sounds, after all. Something that at some point has really taken place is being experienced by a viewer, even though it is placed within a fictional context.

In audiovisual media, various technologies exist that act directly upon the senses in order to create an experience. Most commonly, the eyes and ears are stimulated as part of the creation of a fictional world for a viewer to experience, yet with new technologies such as VR and computer games, the haptic system is increasingly also involved. What would happen if technology was to reach the stage where all perceptual systems were stimulated in the construction of a fictional space?

Would that space be 'real'? I have not answered this question, but the issue is useful for providing a framework within which to place many questions regarding computer games.

The importance of the body allows us to move away from a Cartesian view of the environments created by new media technologies, yet also complicates our understanding of the relationship between fiction and reality. The moral panic that currently surrounds computer games may be implicitly concerned with this problem - the fact that the body acts and is acted upon makes the scenarios taking place on the screen in front of the player 'too real' for comfort. This panic would however benefit from being seen in a historical context.

A famous urban legend recalls that when the film *The Arrival of a Train at La Ciotat Station* was screened in Paris in 1895 the audience ran in terror from what they believed was a real approaching train. Whether this event really took place or not, the story is told as an amusing anecdote of how unaccustomed audiences then were to the moving image and realistic representations, seen in contrast with how we are now perfectly able to tell representation from reality. Yet there is a genuine worry in parts of society today that the 'act' of shooting in a computer game will turn children into 'real' shooters, despite research in cognitive science and psychology into the matter which concludes otherwise.¹²⁶ If we consider the development of various technologies for storytelling and world-building throughout history, as computer games become more and more common, it is likely that we will be able to argue that despite increasingly intricate technologies that act upon more and more of our senses,

¹²⁶ See most recently, the well-publicised independent inquiry into computer game violence, the Byron Review, *Safer Children in a Digital World*, March 2008, <http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf> (accessed 05/01/10).

we are still aware of the fictionality of the worlds we move in, and continue to suspend our disbelief.

Seeing immersion from the point of view of the body also makes it possible to argue for a meaningful difference between text-based and audiovisual media. When a reader is immersed in fiction, the 'transportation' from one space to another is purely cognitive -the reader's body is still and the construction of the fictional world takes place in the readers mind. When the reader puts her book down, she 'returns' to her physical world. If she was not to do this, her immersion into another space would blur the boundaries between the fictional and the 'real' world, and be considered a psychosis. The viewer of audiovisual media, on the other hand, is 'transported' not only by her active mind, but by various sensory and physical stimulation and input.

An emerging understanding of the experience of computer game play, then, must begin with an understanding of its basis in embodied sensation. As I have argued, this is not an entirely new phenomenon, as the cinema also acts upon a number of the senses. The cinema object nevertheless remains separate from the viewer, whereas the game player is physically involved with the game in a more direct sense. Immersion in computer games, and in virtual reality, comes from technology acting upon the body and sensorial input. However, as the example of *Rez* illustrates, it also is reliant on player output.

In the feedback loop that constitutes the game, the player's body, interacting with the hardware that makes up the machinic components of game play, itself becomes a form of hardware. The player, through the means of technology, becomes a cyborg; through her extended body she is part of the hardware that runs the game.

As the example of *Rez* shows, immersion in computer game play is not only a matter of input, but also a matter of interacting. Mastery of the game comes when the player has learnt the specific rhythm of the game, and is able to respond to the sound of the game as well as the rumble of the controller. In computer game play, then, immersion becomes not the opposite of interaction, but the process of interaction itself.

Chapter 3 – The Body as Software

Take your body with you into worlds of imagination.

Brenda Laurel¹²⁷

In David Cronenberg's film *eXistenZ* there is a scene in which the two main protagonist gamers, having entered the game world of the film's title, are talking to a male character in the game. Ted Pikul, played by Jude Law, suddenly becomes aggressive and starts shouting. Horrified at his outburst, he turns to his partner, wondering what made him do that. His partner, who also happens to be the designer of the game, calms him down. It wasn't him, she says, it was his in-game character. The outburst was necessary in order for the story to progress.

The scene neatly illustrates a central feature of the game playing experience: the role of the avatar. In modern computer games, an avatar is often the means through which the player becomes part of the game. The avatar is the player's on-screen, controllable presence within the game and is, to a large extent, unique to the computer game medium. Although there are examples to be found in other art forms in which one can “step into the shoes” of another character, such as theatre, the complicated balance between control and loss of control, between self and role-play that avatar-based computer games provide, is unprecedented. An avatar constitutes a virtual body whose position within the game environment is complex. The existence of an avatar raises a number of questions: who is the avatar? Is it the player? Is it a

¹²⁷ Quoted in Ryan, *Narrative as Virtual Reality*, 52.

separate character? Who creates the avatar? The player and her choices? Or the designer of the game?

The term 'avatar' comes from Sanskrit, and denotes the Hindu notion of incarnation. An avatar is used by beings in a higher spiritual realm deliberately descending onto a lower plane, for a specific purpose. These beings transfer their presence into the avatar and act through it. More recently, however, the term has become synonymous with a feature of new media technology, through its usage in the science fiction genre known as cyberpunk, as well as in computer games. The avatar, in digital media terms, is the virtual body representing a users physical self within a digitally constructed environment. The main characteristic of the avatar remains clear from its origins in Hindu spiritualism; that of the appropriation of a separate body. In cyberpunk, this is connected to the notion of virtual reality, a created space or network into which the protagonists of various stories enter through virtual bodies. In computer games, however, the fictional and narrative aspect of the game often complicates matters. As the scene from Cronenberg's film illustrates to amusing effect, it is sometimes unclear whether the avatar is simply a vessel for the player to work through, or a character with their own personality and agenda. This problematic relationship between the agency of the player and the conventions of storytelling is one that the game development industry is acutely aware of. The meeting point between these two concerns, I would like to argue, is the avatar; part of the game, but also part of the player.

In my previous chapter I looked at how technology acts upon the player's body and offered the idea of the cyborg as a metaphor for understanding how the player interacts with a game by extending her physical body through technological

means. In this chapter I would like to propose a second metaphor for understanding interaction, and in particular the role and meaning of the avatar as a virtual body: the notion of the player as an actor. Understanding the player – avatar relationship through the notion of acting allows us to ask certain questions regarding the relationship between player and avatar, and between identity and body.

The Active player

The relationship between creator and audience, between viewer and artwork, is an aspect of 20th century art and theory that is particularly relevant to the computer game medium. Yet despite my claim that avatars signify a unique aspect of the computer game medium, I do not wish to suggest that the divide between the on-screen and the off-screen, between subject and object, has hitherto been clear cut. Examples of attempts to explore and subvert the two can be found in nearly all art forms of the past century. A striking piece of early video



Frame 13: Theme Song by Vito Acconci. Who is watching who?

art, Vito Acconci's *Theme Song* (1973), explores the tension that occurs when the dividing line of the screen interface is broken, and can be seen as an intimate exploration of the power struggle between viewer and observed. In the approximately 30-minute long video, Acconci lies on the floor of his apartment, facing the camera in a way which makes his face the focus of an extreme close-up.

Occasionally stopping to take a drag from his cigarette or change the music on his cassette player, the artist stares directly at his audience, shifting between vulnerability and confrontation, wooing the audience to come join him. The combination of his extreme close-up, his direct stare and his whispered pleading makes for a very uncomfortable experience. The power that comes with being the one who watches is taken away from the viewer by Acconci's silently aggressive assault on his viewers. It is a pure reflection of the tension that exist between “I” and “you” in an aesthetic encounter taking place on the screen.

In literary theory, Barthes' (in)famous claim that the birth of the reader must be at the cost of the death of the author marked the beginning of an understanding of the importance of interpretation and experience on the part of the reader or viewer. This understanding has since become a well established and accepted field of inquiry in critical theory.¹²⁸ In cultural studies, the belief that audiences perform active and personal interpretations of various forms of entertainment media led to seminal pieces of research into, for instance, soap opera¹²⁹ and romance novels¹³⁰. These argued that traditionally female genres have given their audiences a means to interpret and navigate their own everyday lives in positive and emancipated ways.

In game studies circles, as well as in wider academic fields interested in interactive media, it has become established form to refer to a user of digital, computerised media as 'active', whereas a reader of literature or viewer of film is 'passive'. This latter is perhaps an unfair term, given the amount of work dedicated

¹²⁸ Roland Barthes, “The Death of the Author” in *Authorship*, ed. Sean Burke (Edinburgh: Edinburgh University Press, 2003), 130.

¹²⁹ See Ien Ang, *Watching Dallas: Soap Opera and the Melodramatic Imagination* (London: Routledge, 1985).

¹³⁰ See Janet Radaway, *Reading the Romance: Women, Patriarchy and Popular Literature* (North Carolina: The University of North Carolina Press, 1991).

over the past five decades to understanding the experience of the audience. Yet the active/passive dichotomy can be understood if we consider it in relation to the production of text as opposed to the interpretation of text. As Marie-Laure Ryan observes, “whereas the reader of a standard print text constructs personalized interpretations out of an invariant semiotic base, the reader of an interactive text ... participates in the construction of the text as a visible display of signs.”¹³¹ Similarly, George Landow, in his original study of hypertext argues that 'all hypertext systems permit the individual reader to choose his or her own center of investigation and experience. What this principle means in practice is that the reader is not locked into any kind of particular organization or hierarchy.'¹³² In the early days of the computer game medium, it was this ability to subvert the power of semiotic creation, to blur the boundaries between author and reader, that most excited theorists.

Although theorists of hypertext are not writing about games per se, their ideas have had an influence on early academic approaches to the computer game medium. In his study of game-fictions, Atkins concludes with an argument that the interactive aspect of games allows the player to take on the role of creator. Alluding to Walter Benjamin's famous argument regarding the work of art in the age of mechanical reproduction, he contends that “the work of art in our own supposedly digital age appears to restore the mystery and return the 'aura' to us – we all have access to, and only to, an original... ...No other player or reader reads or writes the same text. It is unique. It is an original. Every one of us is author, every one of us is artist.”¹³³ Atkins does acknowledge that his claims to the artistic merits of the medium are rooted in

¹³¹ Ryan, *Narrative as Virtual Reality*, 6.

¹³² George Landow, “Hypertext and Critical Theory” in *Reading Digital Culture* ed. David Trend (London: Blackwell, 2001), 106.

¹³³ Atkins, *More than a Game*, 153.

the view of their potential rather than their current, rather banal, form, yet the basis on which his view is held, similarly to that of Landow's, remains the same: interactivity leads to creative expression and authorial control. Janet Murray's holodeck vision is also similar in its celebration of the agency given to the player in order to form her own experience.

But can we really call the act of playing a computer game a form of creation? Whereas literature and film only presuppose an audience, the computer game is reliant upon an audience, a player, for its existence. The player, by the nature of gameplay, is mobile and active in choosing what should happen. The freedom available to the player means it is understandable that computer game play should be seen as a form of authorial freedom in its nascent stages. Yet this view is inherently focused on the game as it exists on the screen, locating the game itself in the visual display of the interface. If we choose to see the game as a form of text, similar to literature and film, then the player does have agency in terms of what ends up being displayed on the screen interface. However, the fact that the player is able to directly affect this display by exercising choice does not mean the player is exercising any meaningful creative authority. The word 'active' may take on different meanings -interpretative action in literature and film, configurative action in gameplay, yet neither need infer creative action.

The notion of the active player is thoroughly explored by Alexander Galloway in his essay *Gamic Action, Four Moments*. Here, he argues that action is the fundamental aspect of all computer game play. In his words, "if photographs are images, and films are moving images, then video games are actions... ..Without

action, games remain only in the pages of an abstract rule book.”¹³⁴ The focus on action allows us to argue that the computer game itself is a temporal, ephemeral 'object' that exists only when being played. Before it is played, the computer game is two things, one abstract and one physical. As Galloway notes, it exists abstractly as a set of rules and of potential outcomes. Physically, it exists as the hardware and software that interprets, executes and displays in response to input provided by the player. The 'computer game', however, is inherently based on actions, is what takes place in this feedback loop between player and machine. Again, in Galloway's words, “without the active participation of players and machines, video games exist only as static computer code. Video games come into being when the machine is powered up and the software is executed; they exist when enacted.”¹³⁵ Games, then, should not be seen as texts similar to previous entertainment forms. Their ephemeral nature, existing only when played, means it is possible to reconsider the idea of what constitutes 'the game' itself.

Galloway creates an axis on which to place various types of gamic action, divided into two categories. The first category is related to action itself, and consists of the player-operator and the machine-operator. The second category is related to that which is being acted upon, the diegetic and the non-diegetic. The four moments of gamic action, to Galloway, are the four different combinations of actor and acted-upon. A player-operator diegetic act would be the actions performed by a player within the context and logic of the game's narrative structure, whereas a player-operated non-diegetic act denotes the actions taken outside of that logic. For instance, the role-playing genre commonly has a well developed and detailed world

¹³⁴ Galloway, *Gaming*, 2.

¹³⁵ Ibid.

and storyline, as well as an intricate 'leveling up' system in which the player acquires new weapons, strengths and skills. An example of a diegetic act would be the trading of an item or killing of an enemy, whereas the strategic arrangement of weapons and items won, and the choosing of which skills to develop constitutes a non-diegetic act. On the other end of the axis are machine-operator diegetic acts, and machine-operator non-diegetic acts. Again, an example of the former type of action would be a charging enemy, whereas the announcement of 'game over' illustrates the latter.

Galloway's four moments of action move the relationship between player and game beyond the reader - author dichotomy and illustrate the level of involvement necessary on behalf of both parts for the game to come into being. The feedback loop that constitutes the computer game is unprecedented in other entertainment media, and as such, the celebration with which it has been met by theorists lauding the liberating potential of interactive media is understandable. I would however like to argue here, that it is not within the context of creation, but rather within the context of experience, that the active aspect of the computer game medium should be understood. Although it is undeniable that many games involve a great deal of freedom in terms of choosing 'what happens next' in a game, as well as various levels of customisation and preference, the player is still operating within an environment that is carefully authored and created. Although the code which constitutes the underlying level of text in a computer game is invisible to the player who only sees the game as it appears on a screen interface, that code nevertheless is an integral and unchangeable¹³⁶ aspect of the computer game. Underneath the interface, the code

¹³⁶ The act of "modding" is not taken into consideration in the context discussed here. I am primarily concerned with the encounter between player, hardware and interface, and modifying software is a different form of interaction that requires a separate debate.

comprising the game certainly constitutes a type of authored text, one that the player has little access to.

The avatar is integral to this question regarding experience, as it provides the meeting point between the player and machine. Let me return briefly to the scene from *eXistenZ* to elaborate. The premise of the film is that of the 'ultimate' virtual reality in the shape of a game: technology exists, in the form of 'biopods' attached to the spine of the player through an umbilical-cord-like device, that allows players to enter into a game 'completely'. All senses are engaged, and there is no way of telling game reality and physical reality apart. In the scene above, Pikul finds himself embodying, simultaneously, his own usual self, and a role he has taken on when entering the game. His confusion comes at having, without warning, played out what is known as a 'cut scene'. Cut scenes in computer games are animated clips in which the player loses control over the action and is reduced to a spectator. They are usually included in order to drive the narrative forwards. Sometimes they exist as a reward when the player has completed a certain task or level, other times they provide information that is necessary for the player to know what to do next. The use of cut scenes in games is not popular among a certain type of dedicated game player, and often games allow for the option of skipping such scenes. This means the player will lose some narrative context, but will be able to remain in control. In the example above, the cut scene is particularly surprising as the player embodies his avatar wholly. In actual gameplay, a cut scene simply causes a rupture between the physical player and the digital avatar.

Let me focus on this notion of a rupture between player and avatar by briefly considering the computer game controller, or joypad, through Merleau-Ponty's

description of tool use, as well as in the light of Heidegger's notion of the ready-to-hand. At first glance, playing a computer game appears to be a disembodied experience. The player sits (somewhat) motionless in front of the screen, and it appears that all the "action" is happening inside her mind, except, of course, for the fact that she has a controller in her hand, which she uses to command either the perspective of the screen, or an avatar. If asked what she is doing in the game, however, she is likely to answer "I am running away" or "I am shooting a monster". It is likely that there will be no reference to the controller (as in "I am pushing this button in order for my avatar to shoot a monster").

In computer game play, the process of transforming the controller from an object that is present-at-hand to ready-to-hand is fundamental to the gaming experience. Like Merleau-Ponty's blind man with the white cane, the player has learned how to perceive the virtual space through the controller, and the controller has become part of her body as she experiences it. A game that does not provide a relatively smooth process of allowing the controller to become an extended part of the player's body will generally be considered flawed. Similarly, there will always be a process of 're-learning' to appropriate a controller each time a player starts a new game, which may have different controller functions correlating certain in-game movements than the previous game played.

A cut-scene, then, is a machine-operator diegetic act, that involves taking over the action of the player-operator, temporarily severing the player from her virtual body. Should she attempt to push any buttons on her controller during such a scene, its present-to-handedness would become quickly apparent. The avatar is a virtual body which the player can appropriate through her controller, but it is also an

entity of the game, with its own identity, script and lines, which occasionally throughout the course of play takes precedence over the player's choices. What the cut scene demonstrates is the occasionally problematic relationship between the player's freedom and the need for the game to progress in a meaningful manner. The presence of an avatar thus means the notion of the active player is not merely a case of being able to choose trajectories and arranging the semiotics of the text on the interface. The player is part of the game both diegetically, through her avatar, and extra-diegetically, through her controller. In both instances her experience of playing is embodied, the avatar constituting her virtual body and the controller extending her physical body.

The Player as Actor

Having made reference to the combined ideas of scene, line and script, it follows that moving on to considering the idea of playing as acting should come naturally. As is often the case when using a specific example to illustrate an idea, I would like to refer to a game that makes the notion of acting an explicit part of its content. Although difficult to categorize, the game *Pathologic* can be described as a first-person adventure horror, with elements from role playing games (RPGs) and stealth games attached. The role playing genre is a wide category, and one with traditions reaching beyond that of electronic entertainment. The term RPG, however, has established itself as a very specific entertainment form, with explicit rules and conventions. Although *Pathologic* includes some of these conventions, like giving the player reputation, tiredness and hunger levels, it does not fall into the category

normally thought of as role playing. The character does not level up, there is no “grinding” involved, and the character traits of the player are determined from the beginning of play. *Pathologic* is not an RPG per se, as established by genre conventions, but it is a game in which you play a role.

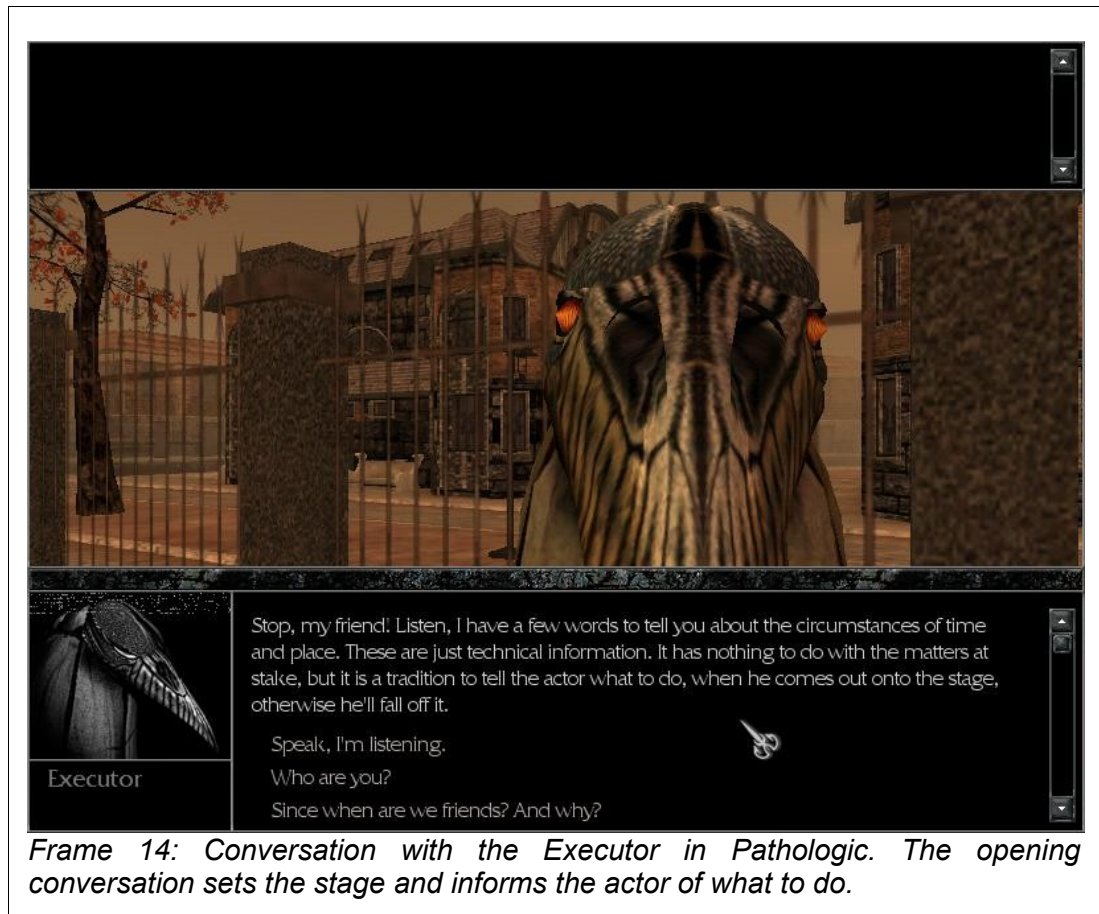
The game begins with an opening tableau. The first time a player installs and starts a new game, she finds herself standing in the upper circle of an old theatre. On the stage below her three characters are arguing about which one of them is best suited to save a town. They each possess different skills and knowledge. While the scene is playing itself out, the player is unable to move from her place in the gallery. When it is all over the characters leave the stage. The player must also leave the theatre, and when she does, she is confronted with a character selection screen, in which she must choose to become one of the three characters she has just seen. After she has made her choice, the actual game begins and she finds herself in the town she must save.

The three characters that can become the player's avatar are titled the Bachelor, the Haruspex, and the Impostor. The Impostor character only becomes playable once the game has been finished once, using one of the other two characters. After the choice of character has been made, the other two become part of the game, and work against the player. Depending on the character chosen, each story plays out differently. The basic premise of the game, however, becomes clear quickly after the player's arrival in town. The town is dying of a mysterious disease, and the player must survive the disease over the course of twelve days.

Thus from the very beginning the game makes it explicit that the player has taken on a role, an idea that is made further clear in an early scene. If the player

chooses the character of The Bachelor, the game begins in a familiar way; the player 'wakes up' in a room in a house, she is unsure where or why. She may walk around the room, open drawers, look in cupboards, and discover certain items of interest such as a letter. Downstairs, she discovers a woman and talks to her; it transpires that the woman is a landlady and The Bachelor is a doctor and scientist, a lodger who is in town to speak to a man who claims to be immortal. As the player steps out of the house, she is met by two eerie-looking characters at the gate of the house. One of the characters, called The Executor, tells the player to stop and listen to some technical advice, "as it is tradition to tell the actor what to do, once he comes out onto the stage".

The scene is a common feature in most games; it informs the player of a number of aspects of the game's mechanics, as well as gaining some immediate incentives and advice to get the gameplay going. Certain games contain this feature within a specific training level, as is often the case with games involving a large amount of combat moves that the player must learn, whereas other games make training features part of the early stages of the main game. In *Pathologic*, the reference to advice and acting makes the notion of a form of training clear, yet it is contained within a dialogue between the executor and The Bachelor, as such, emphasising the role of acting that is involved in playing a game. It becomes unclear whether the executor is talking to the avatar or to the player, and whether the dialogue is a 'knowing nod' in reference to the fact that a game is being played, or whether there will be acting involved within the actual gameplay.



From the very start, then, the game positions the player in the role of an actor. By explicitly pointing out the notion of role-playing, *Pathologic* creates a sense of unease, in terms of the player's relationship to the game she is playing. Whereas the norm in most games of this kind is to provide an environment that is as immersive as possible, *Pathologic* thrives on the ambiguity of whether or not the player is the lead protagonist or merely an onlooker.

Observing the games of make believe that children engage in, Kendall Walton notes the importance of distinguishing between participants and onlookers when attempting to understand performance and play. It would be easy, at first, to compare a children's game of make-believe to a staged play. But this comparison, he claims, is

too limited. In his words, “onstage actors perform for audiences, but children playing make-believe games usually do not. Onlookers, if there are any, may be ignored; the children are not staging a spectacle. They play the game for the sake of playing it, for themselves.”¹³⁷

In computer game play, the player will inhabit both the role of participant and onlooker simultaneously. She is acting out a role given to her by a designer, but unlike the actor in a conventional play, she is unaware of where the script will turn. She has a certain level of control over this, but not the freedom of a child engaging in a game of make-believe. In a nod to the importance of the player's actions, the town in which the gameplay of *Pathologic* is set has a theatre where each night a play is put on that reflects the actions of the player that day. It is made clear that the town and its people very much revolve around the player, and would not exist without her.

The theatrical element in *Pathologic* has a Brechtian element to it, in that it is knowingly breaking the 'fourth wall'¹³⁸ and reminding the player that this is, after all, 'just a game' and that it would be nothing without the player. This is juxtaposed with the harsh conditions in which the player must act -unlike most games, the game does not 'wait' for the player to do the things she needs to do, and if she does not complete her tasks by a given time, the game nevertheless keeps going, making subsequent play increasingly difficult. *Pathologic* is both acutely aware of the player's centrality, and makes playful reference to this on a frequent basis throughout the game, yet the player herself must submit to the conditions set up by the game in order to succeed

¹³⁷ Walton, *Mimesis as Make-Believe*, 211.

¹³⁸ The 'fourth wall' refers to the imaginary wall in front of the stage of a theatre, and functions as a metaphorical divide between fiction (on stage) and reality (the audience). Breaking the fourth wall as a political strategy in theatre arts became popular in the 19th century with the influence of the style of theatrical realism. The theatre of Berthold Brecht is often considered the most prominent example of the use of this particular style and technique. See Berthold Brecht, *Brecht on Theatre: The Development of an Aesthetic* (New York: Hill & Wang, 1994).

with little agency beyond moving through the motions required.

The first of these acts of submission to the game is in the choice of avatar. *Pathologic* falls into the category of games that give the player a choice of pre-determined, or pre-created, avatars. By this is meant an avatar that already has a name, a specific look, and often a background story. Some of the most famous 'names' in the computer game industry are avatars of this kind; Lara Croft being the most obvious example. In contrast to this type of avatar is the more recent phenomenon of allowing the player to customise her on-screen body. Often, in single-player story-based games the level of customisation is limited in order for the game to remain credible throughout. The player may not be able to choose more than the colour of her avatar's clothes. There are however emerging examples of increasing freedom for players to choose their avatars, even in games that contain relatively restricted, linear storylines. *Mass Effect*, released for the Xbox 360 system in 2007, allowed players to choose the gender of their avatar, without compromising the narrative.

Games that are less linear, in particular online virtual worlds, often give the player a large amount of freedom in terms of choosing her avatar. With the release of the Nintendo Wii came the console's *Mii* avatars. *Wii Sports*, as well as other Nintendo games, use these avatars in order to represent the player on-screen. Players interact with the game through a customisable avatar known as a 'mii', a character made up of various components that allow players a very detailed level of character creation. Players can choose things like the size of, height of and space between their characters' eyebrows, and the cartoonish looks of the mii characters result in an unprecedented ability for players to make caricatures of themselves. The mii

characters are 'native' to the Nintendo Wii console, and allow players to have a virtual presence in a number of games developed by Nintendo. This is a novel development, as it allows the player to create 'her own' avatar that she is able to use in a number of different games. The generic nature of the mii coupled with the motion sensitivity of Nintendo's technology appears to support the notion of extending the self into the game. It is a visual representation, nothing else. The physical player remains the actual player, whose movements in space are those of her own physical body.

Taking the level of customisation even further, the online social networking space *Second Life* allows players to create an avatar that may look whichever way she prefers; she may be anything from a cardboard box to a human figure. *Second Life*, however, is not a narrative. The lack of narrative trajectory allows the player more freedom to choose whatever she desires to be her representation, whereas the conventions of storytelling appear to demand a more controlled on-screen player representation. *Second Life* is also a space in which customisation has become a commodity, raising questions regarding the social and financial aspects of online virtual communities.

In *Pathologic* the player has three choices of avatar, each of which yields a different story. The avatar, in this instance The Bachelor, is a pre-created character, part of the game's diegesis, which the player is able to move around in order to make the story unfold. Each character has been given a strong background story and identity, featuring hundreds of sentences, responses, questions and reactions that are created to give an impression of the personality of the specific character.

When children play a game of make believe, they themselves are the authors

of their play, and the meaning of their actions can change suddenly. They have complete control over the unfolding of their story, and may not even know where they are taking it next at any moment. Actors, on the other hand, perform a play for an audience, a play that is already written, and often already well known by onlookers. There is creative freedom involved, in the sense that the actor can choose to portray a certain personality, use a certain accent, perhaps even choose aspects of one's costume and appearance. But the actor does not get to choose her narrative throughout the course of the play. The avatar, then, in the case of computer games with a narrative trajectory, is the role the player must step into in order for the play to unfold. It is her virtual body, yet it is also a body separate from the player. To further elaborate on this, let me turn to consider the specificities of perspective in relation to the avatar.

Player, perspective and body

In *Pathologic*, gameplay perspective is from the first-person. This means the game is observed 'through the eyes' of the avatar-protagonist, as opposed to a game with a third-person perspective, in which one can see the whole body of the avatar on the screen.

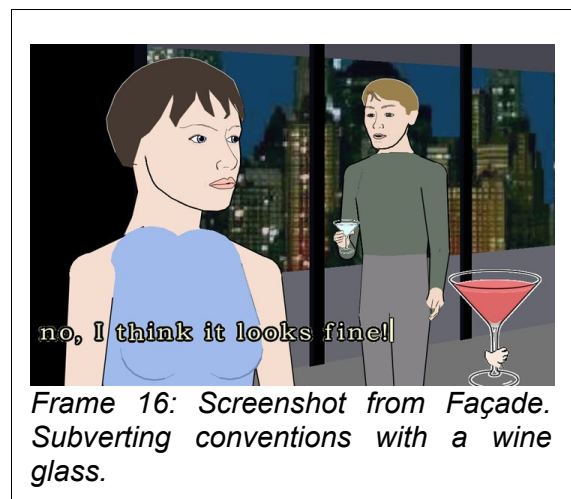
The most common first-person-perspective genre is the first-person-shooter (FPS), in which perspective is central to the gameplay. With the first-person shooter genre, it is common to see the player's gun, usually in the bottom right corner of the screen,



Frame 15: A classic First-Person Shooter view. Screenshot from *Half-Life 2*.

representing approximately where a gun would be held, but no other part of the avatar's body is visible. Certain games use this common feature of first-person-shooter games to humorous effect, as in the independently developed *Façade*, a game centred around a middle-class dinner party and a potential divorce, in which the first-person perspective is the same but the traditional gun has been replaced by a wine glass.

The first-person perspective is created in order to visually create a sense of being 'inside' the body of the avatar, i.e. of embodying the avatar. The perspective is through the eyes of the avatar, and as such the player does not see her character, as she 'is' her character.



Frame 16: Screenshot from *Façade*. Subverting conventions with a wine glass.

First-person perspective is a technique with strong traditions in the language of film,

as noted by Alexander Galloway in *Origin of the First Person Shooter*.¹³⁹ In film, the subjective shot, i.e. where the camera is placed and moved in order to appear to show exactly what the protagonist on screen is seeing, is a technique found in a wide array of genres used for specific effect. In realist styles such as the French new wave and Danish Dogme the technique is used to convey a sense of reality, of creating the illusion that what the viewer is seeing is 'real', experienced straight through the eyes of the film's protagonist, and not tampered with style-wise through specific lighting, sound and camera angles. This technique is sometimes also found in more mainstream Hollywood fare, such as the famous opening scene of *Saving Private Ryan* in which the Normandy landing is portrayed in a highly realistically recreated manner.

Another film genre in which the subjective first-person perspective is frequently found is the horror genre. Here, the subjective shot is used for frightening effect, allowing the audience to see through the eyes of the 'bad guy' as he is approaching his prey. This latter technique for inducing fear in the audience can also be found in computer games; the *Siren* series developed by Sony Japan for the Playstation system¹⁴⁰ features a specific gameplay element known as 'sightjacking', in which the player is able to 'jack' into nearby characters minds and see what they are seeing. Often the player will see herself about to be attacked, making the technique an unnerving means for heightening the player's sense of fear.

As Galloway argues, in film, the subjective shot is an anomaly, used for specific effect at certain times, often to create a sense of alienation, disorientation or

¹³⁹ Galloway, *Gaming*, 39-69.

¹⁴⁰ *Siren* was released for the PS2 in 2004 and the follow up, *Siren Blood Curse* was released for the PS3 in 2008.

predatory vision.¹⁴¹ In computer games, on the other hand, the subjective shot has become a central feature. Galloway does not dwell on why this may be the case, yet if we again consider the body of the player as intrinsic to computer game play, we may argue that this is not so much a stylistic choice made by the game development industry, but instead a natural consequence of the medium itself. If the purpose of the subjective shot in film is to allow us to temporarily see through the eyes of the main protagonist, then a medium in which the player is always the main protagonist would naturally resort to a similar subjective technique.

As with the complaint that VR technology sometimes causes motion sickness in the person involved, so is it with the subjective camera shot in film -it can be disorientating to the extent of being counter-productive. An explanation for the shaky, handheld camera used in many subjective shots is the fact that the body in motion is itself not stable, but instead move around in a shaky fashion. If we were to attach a camera to someone's head, the resulting images would not be the stable movement of mainstream Hollywood cinema. Although this is true, the problem with motion sickness stems from the simple fact that the camera is in fact not the viewers eyes, and there is no direct connection between the two. The viewer is asked to believe in the illusion that she is seeing through her own eyes, yet she has no control over where they move. This can result in an uncomfortable experience. Similarly, in recent examples of films such as *The Blair Witch Project* and *Cloverfield* the handheld camera technique itself is being used as a plot device, incorporating the fact that the film was shot on a handheld camera into its narrative.

In contrast, the player of a game does experience the movement on the game-

¹⁴¹ Galloway, *Gaming*, 68.

screen directly through her 'own' eyes. When the player of *Pathologic*, or any other first-person perspective game moves her avatar through the space of the game, she is directly controlling, and choosing, where to move the perspective of the screen, the 'eyes' of her character. Through her extended body, her fingers on the keyboard, and the avatar itself, she has entered into the game. This sets her experience apart from that of the viewer of a film, where the subjective camera remains a stylistic technique.

The use of first person perspective in game play has also led to the development of new, game-specific stylistic techniques, as is for instance the case with the representation of death. When a player dies, commonly the visual representation is one of the perspective 'falling' to the ground, and landing on the side, so that the environment presented is tilted by 90 degrees. Colours will often turn red, sepia or black and white. This is presumably in no way a realistic representation of what one sees when dying, yet as an expressive technique it is found in a wide array of well-known games, such as *Half-Life* and *Grand Theft Auto*.

First person perspective in game play thus draws upon both the realist and expressive legacies of the technique as it exist in the film medium. What these techniques have in common is their being situated within the body. The realist techniques found in the Dogme film movement, as well as the use of first person perspective to convey fear or death are attempting to convey the experience of being-there. If, as Merleau-Ponty argues, this experience is always embodied, then it follows naturally that techniques should be focused around the body itself, both physical and virtual.

In terms of computer game characters having a strong identity and even

becoming famous in their own right, examples can be found in games using both first and third person techniques. Gordon Freeman, the silent hero protagonist in the *Half-life* series is easily recognisable to most gamers, as is his story of physicist-turned-resistance-fighter, yet when in-game, players never see him or hear him speak, as all the action is presented directly to the player through the first-person perspective. Lara Croft, on the other hand, is visible to players at all times through third-person perspective, and can also occasionally be heard speaking. Certain games allow the player to switch between third and first person perspective, a feature found early on in Nintendo's *Super Mario 64* which in addition to the Mario avatar contained a camera system allowing the player to control not only Mario, but also an invisible camera that continuously followed the character around, showing the action from a number of different angles. The latter introduction of a camera means there are two different ways in which third person game play can be experienced. Some games will not allow the player to move her perspective around at all, and instead automatically follows the movement of her avatar, whereas other games allow the player freedom to move both avatar and perspective individually of one another.

There are thus three different perspectives from which to see the avatar -first person, third person, and through a camera. The third is usually in combination with a third person avatar perspective, and constitutes a perspective from 'outside' the body of the avatar. Focusing on the embodied experience of the first-person perspective when playing leads one to question whether there must then be a fundamental difference between the first-person perspective and the third-person perspective in avatar-based computer games. With third-person perspective there is no attempt at placing the player visually 'within' the virtual body of the avatar, yet as

Atkins acknowledges, the player is nevertheless just as likely to refer to the act of playing in the first person while playing a third-person game. The representation of the avatar on screen is secondary to the embodied experience of playing as the main protagonist. In the case of third-person gameplay, the camera becomes the eyes of the player, and the body of the avatar her hands.

Perspective is an important categorising feature of game play, but it also allows us to question the relationship between the player and her avatar from the point of view of action, control and acting. The use of first-person perspective, from the point of view of the body, appears to be directly supporting the notion of the player as cyborg. She extends herself through technology into a virtual vessel whose eyes become hers. One can wonder, then, why a game like *Pathologic* would need such an established array of protagonist-characters, with their diverse and deeply rendered backgrounds. If the avatar is only a vessel for the player to enter into, and the first-person perspective allows the player to enter into the world of the game without even seeing the body of the character she has taken on, why would there be a need to create a character for the player to act out in the first place?

The answer lies in the ambiguous relationship between interactivity and narrative, between action and acting. The current media landscape is one that celebrates the notion of choice, and computer games, with the player-protagonist character, are intrinsically a part of this. Increasingly, if popular and highly anticipated games such as *Little Big Planet* prove to become a trend, computer game developers appear to be moving towards more customisation, more choice and more freedom for the player to do and play the way she wishes. Implicit in this is the notion of agency as extension of self as opposed to role playing. The player remains

herself throughout the course of the game, and enters into a world in which she is the centre of everything, and in control of the trajectory of events.

Yet on closer inspection the possibility of customisation does not exclude the notion of acting. In the case of *Pathologic*, and any number of other games with an already existing avatar, the role the player takes on is written by the game developer, whereas in the case of customisation, the player is allowed to write her own role. Seen in this light, the emphasis on 'becoming someone else' remains. This view allows for the theorising of avatars as having semiotic significance, ingrained into the wider discourse of the game at hand. The player of a computer game will, at times, embody all the roles of onlooker, actor and participant. In order to further elaborate on the relationship between player and avatar, then, it is necessary to take into consideration the player's identity and sense of self in relation to her on-screen body.

Avatar and identity

A well known early essay on digital culture, titled *A rape in Cyberspace* tells the story of what happened to a community of online players in the virtual, text-based environment known as LambdaMOO when one of their members broke the unwritten, as well as written, rules of interaction. LambdaMOO is a virtual space in which people may interact through avatars, in Julian Dibbell's words, "a very large and very busy rustic mansion built entirely of words."¹⁴² The story here is particularly suited to illustrate the relationship between a player's avatar and identity.

LambdaMOO is a type of MUD (Multi User Dungeon) known as a MOO,

¹⁴² Julian Dibbell, "A rape in Cyberspace", Julian Dibbell, <http://www.juliandibbell.com/texts/bungle.html> (accessed 02/01/10).

which simply stands for MUD, Object-Oriented. It is a database created to descriptively mimic physical space. When users log on to the database, they are presented with a description, in text, on their screen, depicting the space they have just entered. If they want to move into another space, they must type in a command to exit in a particular direction, and can only exit if that direction contains an exit point. If they are able to move, the database will offer up a description of the new room. In the case of text-based rooms, 'avatars' are the names players use when describing what they are doing.

Dibbell, in his account of his experiences of the community, describes how one player, using an avatar called Mr. Bungle, was able to take over the identities of other characters using a so called 'voodoo doll'. A voodoo doll, in this context, is a subprogram that serves to attribute actions and characteristics to avatars that their users did not write themselves. Thus, a number of female avatars, who also happened to have female users behind them, found themselves acting out a number of sexual acts of an increasingly violent nature, until the Mr. Bungle character was made to stop by another user with the power to moderate the behaviour of LambdaMOO's residents. The incident generated a great deal of discussion about the behaviour and moderation of users, and the Mr. Bungle avatar was eventually deleted from the community. Dibbell's article has since served to further the question regarding harassment, bullying and moderation in cyber communities, an issue that, with the increased importance of internet fora, message boards and blogs, is becoming more and more prominent.

It is, however, his use of the word 'rape' that is of particular interest here. In the aftermath of the Mr. Bungle incident, Dibbell spoke to the users who had been

involved that evening, and found a strong sense of anger at having been violated in such a manner. A few points can be taken from this. On the one hand, it is almost offensive to suggest that the act described above constitutes rape, if by that one means to equate it with the physical act of rape. Dibbell acknowledges this, conceding that “to the extent that Mr. Bungle's assault happened in real life at all, it happened as a sort of Punch-and-Judy show, in which the puppets and the scenery were made of nothing more substantial than digital code and snippets of creative writing.”¹⁴³ No rape happened in the flesh, but something happened that was felt personally by users, that went beyond the act of seeing something happening on a screen. The assault was real in the sense that it happened *to someone real*, as well as to a fictional character on a screen. The avatar provides a point through which the user inserts herself into the space depicted on her screen, and thus, violations against her avatar are, to a certain extent, violations against herself.

The ethical and legal implications of such an observation are legion, and beyond the scope of my argument here.¹⁴⁴ However, it illustrates the centrality of the body in relation to our understanding of the experience of virtual space. Often, the body is used as the basis for the argument that there should be no consequences of virtual acts, because these are inherently disembodied acts. To a certain extent this is sound. The users who found themselves violated by the Mr. Bungle character could have switched off their computers, moved away from the screen and done something else while waiting for the perpetrator to be removed. However, if we can argue that

¹⁴³ Ibid.

¹⁴⁴ For emerging scholarly debates on the relationship between player and avatar in online virtual worlds, see for instance Edward Castronova, *Exodus to the Virtual World* (New York: Palgrave, 2007), Hilde Corneliussen, *Digital Culture, Play and Identity: A World of Warcraft Reader* (Massachusetts: MIT Press, 2008) and T. L. Taylor, *Play Between Worlds, Exploring Online Game Culture* (Massachusetts: MIT Press, 2006).

there is an embodied element to the avatar and to the experience of being in virtual space, one that goes beyond the flesh yet remains embodied, this argument loses some of its validity.

In the previous chapter I discussed how technology acts upon the body and the body may be extended through technology. If movement in virtual space and the sensation of being in a virtual environment can be understood through the body, the same argument can be made for a player's sense of self, or identity. A central argument of Merleau-Ponty's phenomenology is the inability to separate mind and body, and any argument that considers the experience of game play through the body must also then consider the player's sense of self as situated within this. Dibbell's account serves to illustrate the role of the avatar as a form of self, and the specific attachment users of online spaces have to their extended selves. In his discussion of the aftermath of the Mr. Bungle incident, he notes the frequency and ubiquity of sexual encounters, voluntary as well as involuntary, in virtual environments, noting that "to participate... ..in this disembodied enactment of life's most body-centered activity is to risk the realization that when it comes to sex, perhaps the body in question is not the physical one at all, but its psychic double, the bodylike self-representation we carry around in our heads -- and that whether we present that body to another as a meat puppet or a word puppet is not nearly as significant a distinction as one might have thought."¹⁴⁵

The violation felt by the users who fell victim to the voodoo doll cannot be equated with the violation of physical rape. It was *not real rape*, but this, however, does not mean that it was *not real*. The problematic use of the word 'rape' in this

¹⁴⁵ Julian Dibbell "A rape in cyberspace".

instance may overshadow the issue regarding the experience of self within virtual environments. Focusing on the avatar and its relationship to the body as well as the self allows us to retain the question regarding experience while moving beyond the dichotomous real/not real relationship that is often a feature of the physical/virtual categories.

The notion of identity in computer games is one that has been given a certain amount of attention within the context of online multiplayer games, where the question forms a subset of the question regarding identity online in general. Usually, the notion of identity online is read in the context of postmodern fluid and multiple identities. It is a well known argument in cultural theory -modern societies, urbanisation and mass culture has resulted in a loss of the original, coherent sense of self that was tied to family and geography, and has instead led to a culture of fragmented identities. We all play a number of different 'roles' each day.¹⁴⁶ The advent of online communities has simply extended these multiple identities into the virtual realm. Tanya Krzywinska, quoting Sherry Turkle goes as far as arguing that the internet is essentially an 'identity technology', a space where the creation of new selves is possible to an unprecedented degree.¹⁴⁷ The opportunities that exist online for exploring and subverting traditional notions of femininity and masculinity are legion, and players of online games are frequently found using virtual characters as a form of 'gender-bending', creating avatars with the opposite gender of their physical world selves and often taking the traditional characteristics of the appropriated gender to extreme lengths.

¹⁴⁶ See Erving Goffman, *The Presentation of Self in Everyday Life* (London: Penguin, 1990) for a classic text on how people adopt various roles in different social encounters.

¹⁴⁷ Tanya Krzywinska, "Being a determined agent in (the) *World of Warcraft*: text/play/identity" in *Videogame, Player, Text* ed. Barry Atkins and Tanya Krzywinska (Manchester: Manchester University Press, 2007), 113.

Often, these identities take on temporal and transient properties; a user can log on to a chatroom, spend a few hours trying on a new identity, and then leave, never to come back. Other times, the creation of cyber identities is more solid and lasting. The social networking space *Second Life* contains a number of avatars, or residents, that have existed for years, and constitute their physical-world users' day job. A number of residents make a living from creating objects and characteristics that other users may purchase with virtual-world currency, which can be exchanged into physical-world currency. These avatars frequently traverse the boundaries of their native online space, engaging in activities ranging from having their own Facebook pages to featuring in art exhibitions to being interviewed in newspapers. Despite having a physical-world counterpart or 'owner', the divide between the two identities can often be wide. The relationship between 'owner' and avatar has been the subject of recent media scrutiny as well, following a number of cases regarding relationships and virtual infidelity, and in particular a case in which a woman requested a divorce following an adulterous relationship online.¹⁴⁸

Richard Bartle, the co-designer of the first online MUD, says of the relationship between a player and avatar that “the player is the character. You're not role-playing a being, you *are* that being, you're not assuming an identity, you are that identity.”¹⁴⁹ How does his argument read in relation to a phenomenological reading of the gameplay experience and the argument that through the appropriation of a game controller as a specific tool, the player is able to extend her experience of self into the game itself? Bartle's position can be contrasted with that of Espen Aarseth, who

¹⁴⁸ Steven Morris, “Second Life affair leads to real life divorce”, *The Guardian Online*, 13/11/08, <http://www.guardian.co.uk/technology/2008/nov/13/second-life-divorce> (accessed 02/01/10).

¹⁴⁹ Richard Bartle, *Designing Virtual Worlds* (Indiana: New Riders, 2003), 155-156.

claims that “the dimensions of Lara Croft's body, already analyzed to death by film theorists, are irrelevant to me as a player, because a different-looking body would not make me play differently. When I play, I don't even see her body, but see through it and past it”¹⁵⁰.

Although both theorists see the merging of player and avatar as a given, the former viewpoint sees the player become the avatar, whereas the latter sees the avatar as merely a vessel for the player to use. It should be noted that whereas Bartle refers to players of online games, Lara Croft, of course, is a character in a single-player computer game. The distinction is important but not fundamental. Although the nature of online spaces and the focus on interaction with other people means that the idea of identity appropriation is prominent, the examples of moneymaking avatars and divorce cases above illustrate the fraught relationship between player and avatar online. Similarly, in single player games, which are the main focus of interest here, the idea of the player becoming her avatar is certainly the norm in the majority of review and promotional material for games describing who the player 'becomes' in the latest big title.

Aarseth's notion of the avatar is as a way of extending the self into the game, using the avatar as one's focal point. As such, Lara Croft does not have her own identity so to speak, but instead becomes a shell, a figure whose behaviour and choices are different depending on who is appropriating her through the medium of the controller. As I have argued in a previous paper, if we can argue that the joypad functions as an extended part of the player's body, regardless of whether the protagonist is a famous avatar that has established an autonomous identity and

¹⁵⁰ Aarseth “Genre Trouble”, 48.

history, like Lara Croft or Mario, the moment I pick up the joypad to play *Tomb Raider*, I do not become Lara, but rather, Lara becomes me.¹⁵¹ Bartle, on the other hand, sees the avatar's created identity as paramount, and argues that the player takes this on to an extent that goes beyond mere role-play. In both arguments, one identity is erased in favour of another.

Let me return to *Pathologic* to consider a final point with regards to the relationship between the player's and the avatar's identity. Throughout *Pathologic* the player encounters a number of other characters, usually known as NPC's (Non Player Characters). The level of 'importance' of these characters is illustrated by an icon of their face that appears in a dialogue window when the player engages them in conversation. An important character, relevant to the narrative trajectory, will be represented by a photograph of an individual person, whereas a less important character, for instance someone who lives in the town that the player can merely trade with or extract some information from, is represented by a picture of a rag doll. The same picture appears for each non-essential character. The player herself, similarly, has a small photograph of an individual person representing her avatar. If the player opens her inventory screen, the photograph that represents herself is shown -thus further complicating the notion of identity and role playing in the game.

The photograph represents another, physical person, presumably a member of the game development team, whose identity is also presented as part of the Bachelor character. The game thus explicitly reminds the player, each time she performs a non-diegetic act, that there is another, physical human being, that also constitutes her

¹⁵¹ Hanna Sommerseth, "Gamic Realism: Player, Perception and Action in Video Game Play" in *Proceedings of the Third International Conference of the Digital Games Research Association (DiGRA)* ed. Akira Baba (Tokyo: The University of Tokyo, 2007), 767.

avatar. If *Rez* can be read as an exploration of the notion of synaesthetic interactivity, located in the physical body, then *Pathologic* constitutes a game about interaction with a virtual body. From the moment the Executor first introduces himself to the player with the words “I am the actor in a tragic pantomime. All the others are the extras, the background, the crowd”, it is never quite clear who the real protagonist in the game is -the player, the creator or the avatar. The game illustrates, indeed plays with, a number of dichotomies that can be found in computer game play, between submitting to a role and appropriating a character, between chance and control, and between designer and player; an ambiguity at the centre of which is the physical and virtual body.

Summary: The body as software

The body often, inadvertently, becomes the focus when discussion turns to virtual spaces. It is clear that the dichotomy between physical and virtual cannot ignore the body whether the matter at hand is the issue of rape and the question of the body in its virtual form, or more tragically, the issue regarding neglect of the physical body following an escape into the virtual that takes on unhealthy proportions. The latter was the case with a young Korean man who died from a heart attack after forgetting to drink water while playing an online game.¹⁵²

The active player in the context of computer games is different to the active reader or viewer, in that the player possesses the ability to change the signs on the screen in front of her. What she is however unable to do, is change the underlying

¹⁵² BBC News, “South Korean dies after games session”, *BBC News online*, 10/08/05, <http://news.bbc.co.uk/1/hi/technology/4137782.stm> (accessed 02/01/10).

code that determines the responses of the game to her input.¹⁵³ By inserting herself into the game through her avatar, her acts become part of the software on which the game runs.

At first glance, the notion of on the one hand becoming someone else and on the other appropriating a vessel for one's extended self, appear to be mutually exclusive opposites. This problematic juxtaposition between role-play and character appropriation is, I believe, fundamental to understanding the relationship between player and avatar. Identification with an on-screen character is complicated by the embodied aspect of player experience in computer games. The avatar is a character, but it also is the player herself.

Two metaphors can be used to explore the experience of game play; the actor and the cyborg. Neither should be seen as the 'correct' interpretation of the relationship between the player and her avatar. Seeing the act of playing both within the context of diegetic and non-diegetic action, we can argue that the player continuously changes between 'being in play' and consciously choosing her preferred behaviour and directions throughout the course of a game.

In the conclusion to his reading of *Half Life*, Atkins contends: "Freeman is not simply a vehicle through which the reader might insert himself or herself into this fictional world. The reader is more than likely in conversation to refer to Freeman's actions in the first person ('...and then I rounded the bend in the corridor and the ceiling fell in on me...') but he and Shepherd and Calhoun remain roles to be played. Identification, such as it is, is not absolute or unproblematic. The mediation of their fictional presence might not be visible in the same way that Lara Croft remains

¹⁵³ Again, an exception to this argument which requires separate discussion is the act of modifying source code.

visible at all times, but it always intervenes to reconfirm that we are reading text and not acting in the world.”¹⁵⁴

Whereas I agree with Atkins' conclusion that the relationship between player and avatar is not unproblematic, I find more problematic his latter conclusion regarding reading and acting. In my next chapter, I will argue that although we may not necessarily be acting in *the* world while playing, we are certainly acting in *a* world. Having considered the relationship between the physical and virtual body, my next chapter will discuss the construction of the world of the game itself, and what I contend is its focal point in the player's embodied experience and understanding.

¹⁵⁴ Atkins, *More than a Game*, 84.

Chapter 4 – Virtual environments and embodied experience

You cannot see things till you know roughly what they are.

C.S. Lewis

From the point of view of visual appearance, computer games have gone through radical changes since they first emerged. Whereas the table tennis represented in *Pong* was made up of white lines and a dot moving back and forth, recent promotional images of the game *Fallout 3* showing the White House after a nuclear attack succeeded in briefly fooling a number of tabloid papers into believing they were looking at graphical models created by terrorists envisaging the aftermath of an attack. Contemporary computer games excel at creating detailed and complex environments. The latest instalment of the infamous *Grand Theft Auto (GTA)* game series, titled simply 'IV', like its predecessors take place in a cinematically detailed parody of an American city. In this instance, Liberty City, as the fictional playground is called, is based very obviously on New York.

At the time of its release, an article appeared in the New York Times that described the experience of playing *GTA IV* from the point of view of a native New Yorker.¹⁵⁵ The journalist, Dave Itzkoff, first conveyed his initial excitement and elation at being able to walk around a digital version of his home city. The city and its buildings were very familiar, and attention to detail on the part of the game's creators was impressive. Quickly, however, he began to feel uncomfortable. After

¹⁵⁵ Dave Itzkoff, "A Strange City Called Home", *The New York Times Online*, 04/05/08, <http://www.nytimes.com/2008/05/04/nyregion/thecity/04gran.html> (accessed 02/01/10).

attempting to visit the block on which his apartment was located, he discovered that the block is not part of the geography of the game. Rather than walking the familiar streets of Chinatown where he lived, he found himself, after only a block or two, at the entrance of Grand Central Terminal. Manhattan, he comes to realise, is an optical illusion. The designers have simply cut out the 'boring' bits, the many long roads of apartment blocks, in order to allow for less space between important buildings and landmarks.

Exploring the virtual version of his home city even further, Itzkoff finds, gradually, that none of it is, in fact, real.

The man he passes on the street, talking to his wife on a mobile phone about dinner plans for the evening never goes home, he just keeps walking around the same block of streets, again and again, having the same conversation. The realisation does not take away from what Itzkoff believes is a very good game. Instead, he argues, the problem with Liberty City is that it pulls you in so well that you are enticed to inspect in closer and closer, yet the more you inspect, the more you realise it simply

is not a city at all. In his words, “It’s not the game’s fault that it can’t perfectly replicate the infinite variety of New York. But it sometimes comes so close to pulling



Frame 17: Simulating the city: NYC vs. Grand Theft Auto IV's Liberty City. Photo courtesy of Matthew Johnston and Flickr.

off the illusion that it invites you to look for the imperfections.”¹⁵⁶

Of course, Itzkoff knows all along that the computer game he is playing is not 'real'. The pleasure he is taking is in comparing the simulation to his experience, relishing the illusion and finding the flaws. Computer games have sometimes been compared to theme parks¹⁵⁷, and Liberty City is a theme park version of New York. It allows players a safe space to push the boundaries of what is possible in the 'real' version of New York, in a place that is close enough to the original to provide thrills.

Having discussed the technology that creates the theme park experience and the avatar that allows the player to enter it, in this chapter I concentrate on the the figurative theme park itself, the computer game as it exists on the screen interface. Why is this important to a study of embodied experience in computer game play? I have discussed how the body is positioned in relation to the computer game environment as both a form of hardware as well as software, yet that environment itself is also, crucially, constructed around the notion of embodied experience, in terms of how it appears to the player on the screen. In this chapter I discuss how the environment of the game itself is centred around the player's embodied experience. The focus on the visual interface, however, means it is necessary to first consider in depth the visual and cinematic aspect of the computer game medium.

¹⁵⁶ Ibid.

¹⁵⁷ Jenkins, “Game Design as Narrative Architecture”, 676-677.

The Computer Medium

As the computer has become an increasingly ubiquitous feature of contemporary culture, various experiments in art and entertainment have risen alongside it. As is the case with new technologies, early forms and experiments have been based on and mimicing media that already exist. As such, genres such as 'computer literature' and, more recently, 'interactive cinema' have begun to take shape. The idea of hypertext literature has enjoyed a certain amount of academic attention, and has developed into a field of its own, supported by bodies such as the Electronic Literature Organisation (ELO). The genre is characterised by experimentation with the form of hypertext itself, and the possibilities stemming from linking seemingly unrelated pages of texts through highlighted nodes, playing with the conventions of linearity, authorship and narrative. Hypertext literature, when it first emerged, was based on a distribution system similar to print literature. An author would create the work, and it would be published on a floppy disk by a publishing house. In the case of hypertext literature, a dedicated publisher that was active in shaping the genre in its infancy was Eastgate Systems. The reader would purchase the disk, install it on her home computer and read it there. As the world wide web emerged, distribution of digital literature moved online, and currently hypertext literature exists both in the form of downloadable and browser-based works.

As the field of computer-based entertainment forms is expanding, the categories of text and image remain as dividing lines for a lot of the new media material that is emerging. To some extent this is understandable -the disciplinary divides already in place in the academic system ensure that often, electronic literature

is studied within literature departments, and electronic visual art is studied within arts departments. However, it is debatable whether these divides will remain meaningful for much longer.

On the one hand, a lot of digital material incorporates both text and image. A recent, much celebrated, example is the interactive media work, *Inanimate Alice*, an episode based narrative artwork available online.¹⁵⁸ It tells the story of Alice, a girl growing up in various parts of the world, who becomes a famous game designer as an adult. Using still and moving images, photographs and digital drawings, as well as sound, text and small games, the work uses the computer medium to all its strengths, whilst drawing upon earlier media. But questioning whether it is a piece of literature or cinema is meaningless; it is neither, but contains elements of both. The word *multimedia* is often applied to computer works, yet this term is also problematic, as although it acknowledges the various forms incorporated into computer works, it does not give the computer work its own identity. In addition, there are of course other, non computer-based media forms that combine text, narrative and image, such as the graphic novel, another medium that is currently enjoying increased attention from academic circles.

On the other hand, all computer material share the same properties in their underlying form; they are digital bits, or information. The question regarding text, image and sound are related to the interface only, to the encounter between computer and user. Underneath the screen all these forms exist as disembodied information. A number of artworks exist that draw upon just this, juxtaposing interface and code for various effects. The importance of code has led some practitioners to argue that code

¹⁵⁸ See <http://www.inanimatealice.com/> (accessed 02/01/10)

is text, and as such works of media art should be studied as a form of text, returning to the early days of humanistic computer studies and hypertext. I would argue that this is not entirely accurate, and that although code takes on the properties of text, it is not the same thing. Works that peer 'underneath' the interface merely land on another interface; that of computer code, created to make it easier for programmers to write computer instructions. Whereas text on the pages of a book is signs that refer to phonetic sounds, text in the case of computer code refers to mathematical operations and numbers. The art of writing software, ultimately, is not the creative use of text, but the creative use of algorithms.

The German theorist Friedrich Kittler has gone as far as to argue that the turn from various types of material and analogue media to digital information signifies the end of media.¹⁵⁹ Media, rather than separate entities with their own properties have essentially become a number of different interfaces to the never ending flow of digital information. The shift from analogue to digital is of great interest to media philosophy, yet the focus on form should not overlook the continued importance of the interface in relation to the experiential aspect of media.

With regards to the computer game, the interface can be seen as slowly moving away from the textual towards the visual, to a current situation in which graphics have become one of the most important aspects of the production of mainstream games. It is useful, therefore, to begin an exploration of the computer game interface with the question of whether or not games can in fact be said to be images?

¹⁵⁹ Friedrich Kittler, *Gramophone, Film, Typewriter* (California: Stanford University Press, 1999)

Image and illusion

The invention of the camera at the cusp of the 19th century is rightly considered a pivotal moment in the history of western art. Centuries of experimentation with representation, exploring the concepts of line, perspective and colour, were trumped by a new technology that could with a click replicate the part of the world it aimed its lens at more accurately than any paintbrush was able to do. The impact on art and philosophy throughout the following century was enormous. Painters began experimenting with the very idea of representation, as evidenced by the various arts movements that took place across Europe in the first half of the century known collectively as the avant-garde. In philosophy, the notion of the reproducibility of art was discussed in terms of its potentially liberating effects on the mind and on society, as well as in terms of the devastating possibilities of mass produced culture. The impact of the photographic image has been profound, to the extent that culture in the 20th century has been described as taking a 'pictorial turn'¹⁶⁰. This is well trodden territory for the cultural theorist.

In the second half of the last century, another type of image began developing. As computing power increased, computer graphics, the rendering of pixels on a screen interface, grew better and better, eventually reaching a state in which a digital image rendered by pixels and an analogue image rendered by chemicals on a film strip may be indistinguishable to the naked eye. In film, moving image technology has similarly turned digital, to the extent that the majority of contemporary Hollywood output is captured and displayed using digital technology.

As important as the distinction between analogue and digital imagery has

¹⁶⁰ W. J. T. Mitchell, *Picture Theory* (Chicago: The University of Chicago Press, 1994), 11-34.

become to cultural theorists, when discussing the computer game medium, another additional distinction is necessary. Although the process of capturing and rendering an image using analogue and digital camera technologies respectively are profoundly different, the object being rendered remains the same: the physical world. Whether an image or scene is staged, constructed or simply 'snapped', the object being captured on camera exists in the physical world. This is in contrast to the genre of animation, in which the image displayed on the screen is created, as opposed to captured. Animation exists in both analogue and digital form, and provides us with a different distinction between types of image, a distinction based on image origins rather than image technology.

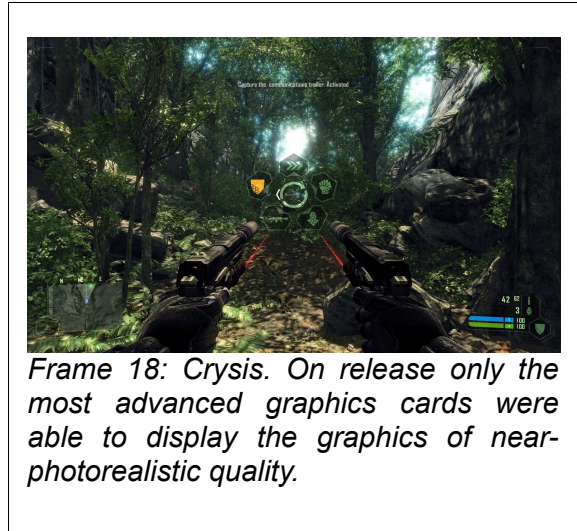
This is not to say that the two different approaches to the image is clear cut. With increased computer power and the rise of digital rendering, the distinction between created and captured images is becoming increasingly blurred. Most big science fiction blockbusters these days contain a substantial amount of computer generated images (CGI), and a lot of animations rely on various forms of captured images, in particular the technology of motion capture.

The computer game medium is, of course, part of this wider field of digital images and animation. Computer game graphics are big business, to the extent that computer games are often said to be driving the development of computer hardware and software in general. The highly anticipated 2007 game *Crysis* could only be played on machines with the at-the-time fastest graphics cards available¹⁶¹, resulting in a large number of computer upgrades around the time of release, albeit also in an overall negative impact on sales. Top-of-the-range computer hardware would

¹⁶¹ Ludwig Kietzmann, "Crysis PC Requirements: A New PC" *Joystiq*, 09/10/07
<http://www.joystiq.com/2007/10/09/crysis-pc-requirements-a-new-pc/> (accessed 02/01/10).

presumably be out of the price range for a large part of the demographic interested in playing *Crysis*. Despite this, graphics are among the most important aspects of a computer game from the perspective of many players.

The development of increasingly strong graphics capabilities is inherently tied into the desire to represent and recreate the world we live in. As Manovich notes, “‘realism’ is the concept that inevitably accompanies the development and assimilation of 3-D computer graphics.”¹⁶² The drive



in the development of computer game graphics has always been the desire to more and more accurately depict the physical world, with the 'ultimate' goal being that of 'photorealism', a digitally animated image that is indistinguishable from a photograph, or even better, a digitally constructed world that is indistinguishable from a film clip. If currently a digital or analogue captured image are indistinguishable to the naked eye, 'true' photorealism in animation would be when the same could be said for images of both a captured and created object. The desire for photorealism has seen an enormous amount of time and effort spent on perfecting the animation of human hair blowing in the wind, water streaming in a river and smoke wafting up from a fire. A computer game's graphic qualities remains a major point for promoters and advertisers, as well as for a large section of gamers.

¹⁶² Manovich, *The Language of New Media*, 184.

As Manovich contends, the desire for 'perfect' mimetic representation has been with humanity since pre historic times.¹⁶³ In Pliny the Elder's famous story of Zeuxis and Parrhasius, the two artists agree on a competition to determine who is the better painter. Zeuxis presents a painting of grapes that appear so lifelike and luscious that a group of birds fly down to peck at them. Zeuxis then asks Parrhasius to unveil his painting, only to find that the curtain hanging in front of the painting is in fact the actual painting itself. Zeuxis admits defeat, saying; "I have deceived the birds, but Parrhasius has deceived Zeuxis."

The brief story of Zeuxis and Parrhasius illustrates a point that becomes increasingly prominent as technologies of digital representation becomes more ubiquitous: that of deception. Again, as Manovich argues: "Although the privileging of certain areas in research can be attributed to the needs of sponsors, other areas receive consistent attention for a different reason. To support the idea of progress of computer graphics toward realism, researchers privilege particular subjects that culturally connote the mastery of illusionistic representation."¹⁶⁴ Like Zeuxis and Parrhasius, modern computer games developers are competing with each other in order to provide an experience as close to reality as possible.

Realism in new media technology has come to mean illusion, the experience of reality and realistic environment, despite the knowledge that they are, in fact, not 'real'. In my chapter on technology and the body, I discussed how technology acts directly upon the senses in order to stimulate an experience, and argued that the embodied aspect of play is a defining feature of the computer game, and emphasises the uniqueness of the computer game medium in its relation to the sense of touch.

¹⁶³ Ibid 177.

¹⁶⁴ Ibid 195.

Nevertheless, the visual and aural senses are also intrinsic features of the medium, especially as it exists on the screen interface. The screen interface, after all, is where the game is represented to the player, and where the player enters the game through her avatar.

Whereas other visual media have spent the 20th century experimenting with the notion of representation to the extent of eventually declaring the 'death of representative arts', the computer game medium is characterised by a drive towards more and more realistic representation. The academic study of games, however, has been ambivalent with regards to the privileging of the visual aspect of computer games over other features. This is particularly true of those who favour the study of the functional and configurational aspects of games, as opposed to their narrative 'packaging'¹⁶⁵. Early academic attempts at theorising the game-play experience have been strongly downplaying the visual representational aspect of computer games. However, as Atkins argues, "If we are to begin to approach games in a quest to understand the specifics of their aesthetic qualities, then we might well have to be prepared to at least question whether their aesthetic is in any meaningful sense a visual aesthetic, or whether it might actually be counterproductive to evaluate video games as a primarily visual art, but we must at least acknowledge that the image is a central component of so many of the games that we study and play."¹⁶⁶

The central dichotomy here is between the idea of the 'game gaze' and the 'cinema gaze'.¹⁶⁷ The juxtaposition is similar to Galloway's distinctions between diegetic operator acts and diegetic machine acts. The former places emphasis on the

¹⁶⁵ Eskelinen, *The Gaming Situation*, online.

¹⁶⁶ Barry Atkins "What are we really looking at? The future orientation of video game play" in *Games and Culture* vol 1:2 (2006), 130.

¹⁶⁷ Aarseth, *Genre Trouble*, 52.

player's active role, the latter on the game itself. Atkins' proposal in relation to the visual is to offer up the game gaze as being orientated on the future as opposed to the present rendered image on the screen in front of the player. Computer games, unlike any other media, allow the player to actively control and affect 'what happens next', and as such, the player is fixed on the representation of a potential future as opposed to the actual image on the screen. This is a very useful description of the computer game image, and whereas I do not question the validity of the idea, I wish to retain focus here on the aspect of realism in relation to visual representation, and question just why it has been emphasised to the extent it has by players and the development industry.

Theorists of games have largely chosen to disregard the emphasis on photorealism in computer game development, often seeing it as no more than a frivolous marketing tool. Arguably, this falls into a similar trap as the modernist disregard for popular narrative fiction. Emphasis is placed on the player's active cognition and understanding of the environment on the screen. Appropriating mastery and control over the game, the player learns to traverse the environment, eventually reaching her goal, 'beating' the game and winning a conclusion to the story. Yet by emphasising the experience of interpretation and mastery, the importance of loss of control, of losing oneself in the new environment, is downplayed. In terms of the game play experience, this too is important. The flaneuring player, exploring the environment, revelling in the image, taking pleasure in discovering what is presented to her by the game's designer, is also a feature of computer games.

The New York times article on GTA IV illustrates this. The representation of

the environment in which the journalist finds himself walking around is crucial to his experience. The game itself –its narrative trajectory and game-play mechanisms– would have remained the same in a less detailed environment, yet the extent to which the game is able to represent an urban environment is fundamental to the experience of the player. The player knows that the image in front of her is created, not captured. She knows that it is not New York. Yet the accuracy with which the game is able to represent something that comes close allows the act of playing to take on different forms. The player can follow a narrative trajectory, or she can choose to disregard 'purposeful play' and simply explore. The latter form of play is very much dependent on the image on the screen. The emphasis on photorealism in the industry thus appears to be driven by the desire to experience the world of the game, as opposed to experience the game's trajectory. We have returned to Ryan's notion of being 'lost in fiction', the pleasure of which has been met with such hostility throughout the course of the 20th century, yet the fiction is not one of a progressive narrative, but rather a constructed world.

Whereas I agree with the contention that games are not visual spectacles akin to cinema, visual representation is nevertheless essential to the gameplay experience. The game gaze is different from the cinema gaze, yet this does not mean that what is being gazed upon, so to speak, is irrelevant. The visual aspect of cinema is one of a moving image presented to a still player. The visual aspect of games is one of interspersed still and moving images presented to a moving player, creating the appearance of movement in space on the screen. If we consider the visual from the point of view of embodied experience as opposed to cinematic representation, the focus on action in play remains, but the importance of the environment in and of

itself, as opposed to merely a prop to drive gameplay forwards is also given emphasis. Embodied experience, however, is reliant on an environmental understanding that goes beyond visual similitude. The increasing importance of physics simulation in recent years would appear to support this view.

Physics and behaviour

A series of blog posts on the Guardian newspaper's 'Gamesblog' website on the 22nd of June 2009 titled *The truth about game physics* opened with a review of the latest *Battlefield* game and the words “A few years ago it was enough for a game world to look realistic. Now, in its every action and reaction, it must *behave* realistically”.¹⁶⁸ It is a sentiment that is becoming increasingly prominent, as game engines and computer processing power grows stronger and stronger. The notion of the behaviour of objects is tied in with the interactive nature of gameplay: the better the physical properties of in-game objects, the more responsive they are to player input. By containing objects with their own internal logic dependent on circumstance, computer game environments are moving further away from the realm of the cinematic. Objects in a game become independent entities that act and react differently with every iteration of gameplay, depending on player input. Some recent experimental games, such as *Crayon Physics* make the laws of physics the basis on which gameplay is based, and in recent games of the blockbuster kind, such as *GTA IV*, physics is intrinsic to the development of ever more 'living', dynamic game worlds.

¹⁶⁸ Keith Stuart, “The Truth about Game Physics” *The Guardian Online*, 22/06/09 <http://www.guardian.co.uk/technology/gamesblog/2009/jun/22/games-physics> (accessed 02/01/10).

Contemporary computer games are built using highly advanced physics engines, meaning a computer programme that simulates a number of physical traits. Physics engines are used both in scientific and military research, as well as in computer games. They normally have two basic components: a collision detection system and a dynamics simulation part which is responsible for the various forces affecting simulated objects, such as gravity and elasticity. Physics engines exist for both 2D and 3D environments, and do not necessarily have to create simulations that adhere to the laws of physics, although this is commonly their purpose.

Physics has been important to computer games for a long time, especially in relation to the quest for photorealistic environments, yet it is only with more recent advancements in computer game technology one can begin to refer to a form of 'physical realism' in and of itself. This physical realism takes place on two levels: with regards to the behaviour of objects in the game in and of themselves, and with regards to objects in the game when interacted with. The previously mentioned examples of smoke, hair and water are examples of the former type of object. Thousands of hours have been spent attempting to simulate the movement of water in the attempt to represent a river indistinguishable from the 'real thing', in the belief that the player wants to be presented with the illusion, rather than create one in her mind. Advanced physics are certainly a great selling point for commercial computer games, and as such it would appear that players genuinely desire to be given an illusion as visually realistic as possible.

An example of in-game objects that rely upon advanced physics simulations when interacted with can be found in relation to what is known in the development industry as a 'destructible environment'. A staple of modern computer games is the

use of advanced and spectacular weaponry, ideally allowing the player to wreak havoc on her environment to her heart's content. Take the very standard act of breaking a crate, a staple act found in a number of games over the years. Crates commonly contain useful or essential items, such as a healing pack, a map or a key. The actual act of breaking the crate, however, has changed substantially over time. In early games, the player would simply move her character next to the crate, push a button, and the crate would switch from appearing closed and whole to appearing open and broken. With the development of better graphics and processing powers the player was able to see the crate smashing open. When pushing a button she would trigger a small animated crate-smashing sequence, and as such, each crate in the game opened in exactly the same manner. With even better processing power, however, in-game crates have the ability to be given their own physical properties. Thus, they can break in different ways, depending on how and where they are hit by the player. Crates have moved from being in-game symbolic objects, identical images that represent the idea of a crate, to in-game physical objects, objects that can be interacted with and behave in a variety of ways according to the actions of the player.

Although the notion of destructible environments is given a high level of importance in the game development industry, it has been largely ignored by an academic community interested in the meaning and interpretation of games and gameplay. Indeed, the amount of time and effort put into developing code which allows for the appearance of cloth to waft in the wind in a visually realistic manner may seem frivolous to a critic desperate for meaningful fictions and artistic experimentation.

If game developers have succeeded, to a large extent, in giving an inanimate object like a crate a set of physical properties that allows the player to interact with it in a believable manner, then the behaviour of in-game characters poses a bigger challenge. As veteran developer Chris Hecker claims, “We're still a long way away from having a fully procedural physically based character that looks anywhere close to as good as a hand-animated one... ..Eventually, say 20 years from now, characters will be much more like living creatures, at least from a low level motor control standpoint. They'll be self-balancing, able to look ahead and run up some stairs while jumping over some debris, etc.”¹⁶⁹

Outside of the realm of environmental objects, the behaviour of human non-player-characters also provide interesting and difficult challenges with regard to the question of game play, as the importance of meaningful human interaction in order to create certain experiences is one that should not be overlooked. One game in particular, the experimental interactive narrative *Façade*, is often referred to in relation to computer games and the problem of interacting with other human characters, and goes beyond Heckers moderate desire for characters to obtain a sense of balance.

Façade is an experiment in interactive storytelling developed over a five-year period by Michael Mateas and Andrew Stern at the Georgia Institute of Technology. It was released as a freeware product available for online download in 2005 and won the grand jury prize at the 2006 Slamdance Independent Gamemakers Festival. Since its release it has been lauded as one of the more innovative experiments in recent

¹⁶⁹ Keith Stuart, “The Truth about Game Physics, part four: provoking a reaction” *The Guardian Online* 25/06/09 <http://www.guardian.co.uk/technology/gamesblog/2009/jun/25/games-gameculture> (accessed 02/01/10).

game design. *Façade* is text based, but the text is mediated through an AI parser graphically represented on the screen as two human figures, Trip and Grace. They speak directly to the player, through the same interface made familiar by first-person-shooter style computer games. *Façade* can be played from start to finish in approximately 15 minutes. The setting is relatively simple, as are the slightly cartoonish graphics. It takes place in a middle-class Manhattan apartment, where the player has been invited to an evening get-together by her old friends.

The technology used to interact with the game is simple, the player uses her keyboard to type in sentences in order to “speak”; the arrow keys to move around in the space; and a mouse to pat, hug or even kiss the two characters. It quickly transpires that Trip and Grace are having an argument, and it is up to the player whether she wants to egg them on, try to reconcile them, take sides, flirt, or ignore the argument altogether. The story can be, and is intended to be, played several times, and each time the player's actions will determine different dialogues and outcomes. At one point, depending on choice of words and questions, Grace may reveal that she is feeling insecure about her worth as an artist, at another Trip may reveal that he has been having an affair. The story may end with either of the two characters walking out on their marriage, or with a reconciliation.

What is at first glance unique about the game is the level of freedom allowed the player in terms of what to say to Trip and Grace. Unlike the majority of games, there is not a limited set of sentences to choose from, the player can type in anything, and the characters will respond. The characters react to certain words as opposed to sentences, yet their apparent 'understanding' of language is impressive. However, if the player, like Itzkoff, should find the need to explore the boundaries of what the

game is able to do, it quickly becomes apparent that Trip and Grace are not actual human beings. Engage them in conversation about something unexpected, or out of context, and the conversation quickly breaks down. Computer games require a more active suspension of disbelief than merely allowing oneself to believe that the scenario taking place on the screen in front could be real, the player has to 'play along'.

Façade's interaction with other characters is opposite to that of *GTA IV*, in which characters are equipped with motion-detection and certain reactions to various in-game events, but not any advanced kind of language. Most meaningful interactions in *GTA IV*, in which the player is given information or sees the consequences of her actions, are left to traditional cut scenes. Whereas *Façade* places emphasis on language, and its importance in relation to spoken and emotional interaction, *GTA IV* is concerned primarily with interacting with a graphically advanced environment. The two games thus represent opposite directions that the computer game medium may take, the former still in its nascent stages, the latter having already reached a level of substantial sophistication. Both, however, emphasise the importance of the behaviour of objects when interacted with in order to sustain an illusion.

Simulating the laws of physics and equipping characters with specific behaviours in games is important for the purpose of meaningful interaction, but this does not mean the laws of physics must always be adhered to. To return to the idea of computer games as theme parks, if *GTA IV* is a game about breaking the law, and that includes those of physics. A feature of the game is hijacking, chasing and crashing cars, yet in a car crash, the level of injury sustained by the player is nowhere near

what would 'realistically' be expected. If that was the case, the game simply would not be much fun. At the same time, the player does get injured, and will get killed in accidents of the most spectacular and violent kind. To be invincible would, equally, not be much fun.

Physics simulations in computer games thus allow us to elaborate on the question regarding realism. Whereas physics simulation in scientific research is, by necessity, as accurately copying observed nature as possible, the computer game medium is not held back by such restraints. To the designer of a computer game, it is enough that simulations appear realistic on the screen to the extent that the player may interpret behaviour based on her innate and embodied understanding of physics. Beyond that, objects need not act realistically in their behaviour. Game physics remain in the realm of the visual, but not necessarily the photographic or cinematic. Representation in a computer game environment can not take on the same properties as cinematic representation. The physical aspect of games means that the game environment consists of a number of separate objects and characters with their own internal properties and logic, as opposed to being a consistent object itself, in the manner of a cinematic sequence.

The role of physical and behavioural models in computer game design makes it possible to argue that games move from the realm of representation into the realm of simulation. Whereas the idea of representation is a fundamental part of humanistic enquiry, simulation as a term has only gained prominence with the increasing importance of the computer in contemporary culture, although it already has found a place in critical theory through the writings of Jean Baudrillard. Elaborating on the notion of simulation allows us to further question the relationship between reality

and the computer game as visual signs on a screen.

Simulation and representation

Simulation is not a new concept, it has existed for centuries in various mechanical devices and forms. Briefly defined, whereas representation denotes the description or depiction of an object, a simulation also models the behaviour of an object. The problem with simulation thus far, as Frasca notes, has been the difficulty in modelling complex processes through cogwheels.¹⁷⁰ The computer has made this modelling possible. Simulation has however not traditionally been associated with entertainment or storytelling, although the emergence of the computer game medium, as well as the shift from analogue to digital in the cinema medium means it is becoming an increasingly relevant concept.

In the opening of his famous essay on simulacra, Baudrillard recalls Borges' story of the cartographers of the Empire that drew up a map so perfectly detailed it ended up covering the territory it mapped out perfectly, and with the inevitable decline of the empire rotted in symbiosis with that territory itself. To Baudrillard, the story is an allegory of simulation that has come full circle.¹⁷¹ In contemporary critical theory, the simulacrum has come to mean a copy without an original, yet this is not entirely what Baudrillard himself describes in the example above. Baudrillard's critique is of a society that has become so reliant on various technologies of representation that it has lost contact with the reality that precedes the map. The

¹⁷⁰ Gonzalo Frasca, "Simulation versus Narrative: Introduction to Ludology" in *The Video Game Theory Reader* ed. Mark J. P. Wolf and Bernard Perron (New York: Routledge, 2003), 223.

¹⁷¹ Jean Baudrillard, "Simulacra and Simulations" in *Jean Baudrillard, Selected Writings* ed. Mark Poster (California: Stanford University Press, 1988), 166.

simulacrum is an ideologically loaded concept, that is anchored in the discourse of 20th century cultural critique.

It is tempting to resort to the notion of simulacra when developing an understanding of computer game worlds. The *GTA* series, for instance, are highly advanced simulations of well known cities, complete with radio stations, coffee shops and a plethora of cars. Some of the pleasure derived from the games come from their deliberate ambiguity in representing the city. It is clear to the player of *GTA IV* for instance, that the city she is walking around in is New York, yet at the same time, it is not New York. It is a simulated representation of New York, but also a simulation of something else. Liberty City is what is known in literary theory as an intertextual pastiche of New York city. The various neighbourhoods are given similar-sounding, and similar-looking properties as their physical-world counterparts. Brooklyn, for instance, becomes Broker. Liberty City is rife with playful, 'knowing nods', to its original counterpart.

The question begs itself easily when faced with a game such as *GTA IV*; are computer games simulacra? Are they perhaps even the perfect example of 'contemporary simulacra'? It is undeniable that Baudrillard's theories appear to be particularly well suited to understand computer games, indeed, an early issue of the journal *Games and Culture* was dedicated almost entirely to Baudrillard's theories and their importance to the medium.¹⁷² Consider the fact that the most popular and successful computer game franchise today is called *The Sims*, meaning of course 'the simulations' or 'the simulated', and the close bond between computer games and computer simulations becomes clear. 'Simulation' has even become a computer game

¹⁷² See *Games and Culture* vol. 2:4 (2007).

genre in itself, usually referring to games such as *Civilization*, in which the player develops nations and manages armies in the attempt to become a world power, or *Championship Manager*, in which the player attempts to manage a football club, buying and selling players in the attempt to rise to the top of the league.

Simulation is a contentious concept, because of its closeness to, and relationship with, reality. In army training, soldiers are using computer simulations of combat situations in their training. The idea is that the simulation is close enough to reality that they will be able to handle the real thing when they finally encounter it. The likeness of this kind of training to playing computer games is one of the reasons there is still widespread unease about young boys playing violent games in their bedrooms. Sometimes, the believed affinity between computer game play and armed combat is used for specific purposes, as is the case with *America's Army*, a game developed by the US Army as a recruitment tool. It is freely available for download online and promises to “provide young Americans with a virtual web-based environment in which they can explore an Army career”.¹⁷³ In a more light-hearted example, the relationship between games and simulation was used to humorous effect by the recent cult film *Snakes on a Plane*, in which a character is able to land a pilotless plane due to his numerous hours spent playing *Flight Simulator* on his Playstation Portable console.

Nevertheless, when playing a computer game, the player always knows that it is a simulation of reality, not reality itself. Simulation as a concept has been frequently included among the many aspects of contemporary culture that are often hyped, feared and celebrated both in academic and mainstream discourse, yet its

¹⁷³ See <http://www.americasarmy.com/> (accessed 02/01/10).

interest lies not only in its relationship to reality, but in its relationship to representation.

Simulation is another mimetic tool, not its opposite. Despite the attractiveness of the simulacrum as a means for understanding the computer game environment, Baudrillard's theory is not meant for the computer game. The simulacrum is a critique of the physical world that have been subsumed by signs to the extent that we can no longer tell what is sign and what is referent; that is not the case with computer games. Despite their novelty, their reliance on the computer and their relationship to technologies of the virtual, we do well to remember that they are entertainment products, playthings and devices for telling stories. The simulacrum does not describe what we already know to be computer games, it describes a society that has become a computer game without us noticing.

The simulation of the computer game medium, then, is not the simulacrum that Baudrillard describes. If anything, few other media appear to be as acutely aware of its relationship to physical reality as the computer game. If, as according to Baudrillard, the simulacrum means “it is no longer a question of imitation, nor duplication, nor even parody. It is a question of substituting the signs of the real for the real”¹⁷⁴, then the concept can clearly not be applied to computer games. Computer games remain in the realm of the mimetic, and despite the fears of more conservative critics of the medium, there is little fear of a game becoming a substitute for reality.

With regards to this question regarding simulating reality, it is also possible to question whether computer games simulate lived experience. In our everyday lives, very few of us will have experienced the necessity of shooting our way through a

¹⁷⁴ Baudrillard, “Simulacra and Simulations”, 167.

broken down research laboratory environment, fighting for survival against a number of otherworldly monsters, as is the case with *Half-Life*, to use an example of a popular game with a not uncommon plot device. Similarly, with regards *GTA IV*, very few players will have experience of hijacking cars and crashing into innocent bystanders while attempting to escape the police. Yet on a more basic level, the simulation of lived experience in *Half Life* as well as in *GTA IV* pertains to our basic understanding of reality, and is crucial to the player's orientation in space. There is gravity pulling the player's character towards the ground when jumping or falling off a building. Weapons fire their ammunition in a straight line towards what the player points at. Movement in water is slower than movement out of water. The computer game environment is built to simulate as accurately as possible the player's embodied understanding of being and acting in a space.

The properties of water illustrates the different types of simulation that exist in the computer game environment. One is related to the representational; as described above, water is given a number of characteristics and behaviours related to its appearance on the screen. The other is related to interaction; when moving in water, the player's movement and ability to perform various actions changes.

In his book on the shift from analogue to digital in the cinema medium, D. N. Rodowick contends that “computers can and will produce ever more convincing homologons, or simulacra of physical world processes, but never analogons, or representations.”¹⁷⁵ He thus asserts the difference between the analogue, captured image, and the digital, created image, as where representation and simulation differs. Yet I would argue that this dichotomy between digital and analogue is not sufficient

¹⁷⁵ D. N. Rodowick, *The Virtual Life of Film* (Massachusetts: Harvard University Press), 129.

for understanding the computer game. The image on the screen is, arguably, both a representation and a simulation, the two need not be opposites. The screen exists in the realm of pictorial representation, it is the interface where algorithms are executed and displayed as familiar semiotic representations. The processes which create the image on the screen are however different from other technologies of representation. The computer game environment exists as a combination of representations and simulations that serve to create a coherent space in which the player can act in a number of recognisable ways. This allows us to see computer game environments as spatial as opposed to pictorial. The spatiality of games eventually provides us with a starting point for returning to the idea of embodied experience and its relationship with the screen.

Computer Game Space

The development of graphics in computer games can also be seen as a development of space. The first text-based computer game, *Adventure*, begins with the words “*You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully..* “ The opening of *Adventure* is descriptive, scene-setting in nature, more reminiscent of a play than any other text. The game, first created in 1976, became very popular, and was re-created and re-imagined numerous times over the years. As soon as the computer was able to, *Adventure*, when loaded onto the screen, contained a low quality pixel image of the road, forest and stream, still with the descriptive text intact. The image at first served as an illustration of what was described in the text,

but as graphics got better, text became redundant. Contemporary computer games do not need text to tell the player that she is standing at the end of a road in a forest. They have moved from providing the script for the play to providing the stage itself.

In an essay intended to bridge the gap between narratology and 'ludology' as means for interpreting computer games, Henry Jenkins proposes that games constitute a form of narrative architecture. Jenkins draws upon literature which he claims is preoccupied with what he deems 'spatial stories', such as hero's quests, travel narratives and science fiction. These are narratives that take great pleasure in creating and describing new worlds and environments, sometimes to the detriment of character developments and interpersonal relationships. The distinction made above with regards to *Façade* and *GTA IV* echoes this. Perhaps the success of the *GTA* series, as well as the difficulty developers have met with when attempting to create meaningful interaction with human characters, point to a special affinity between computer games and spatiality. In Jenkins' words, computer games do not 'tell stories' in the traditional, narratological sense, instead they 'evoke an atmosphere'.¹⁷⁶ Returning to the idea of the theme park, he claims, "The most compelling amusement park attractions build upon stories or genre traditions already well known to visitors, allowing them to enter physically into spaces they have visited many times before in their fantasies."¹⁷⁷ Jenkins' argument is that spatiality is a crucial aspect of games and game design that has so far been overlooked by critics. Thus he echoes Manovich, who suggests that navigable space provides us with an important foundation for the idea of a new media aesthetics.¹⁷⁸ Whereas Jenkins focuses on narrative in his essay,

¹⁷⁶ Jenkins, "Game Design as Narrative Architecture", 676.

¹⁷⁷ Ibid, 677.

¹⁷⁸ Manovich, *The Language of New Media*, 249.

his spatial metaphors also allow us to discuss the development of the computer game environment in relation to the screen. Looking at the screen environment from the point of view of spatiality, it is possible to argue that the stage, if that is what the screen is, has moved gradually away from depicting a world of still images, to increasingly constituting a living world.

Let me turn briefly to a computer game series very different from *GTA*, yet matching it in fame. The development of the *Super Mario Brothers (SMB)* games can be used to illustrate the changes that have taken place in game environments over the years. The *SMB* franchise is one of the most successful in game culture, and has existed for almost 30 years, since the first game, *Mario Bros.*, was released in 1983.¹⁷⁹ The first game was displayed as a two-dimensional screen in which the Mario character, as well as his brother character, Luigi, are defeating creatures coming out of pipes in a sewer-like environment. The next game, *Super Mario Bros.*, released for the Nintendo Entertainment System (NES) in 1985, also featured a two-dimensional display, but in this game the player could move across the screen from left to right, making the game environment a long, two dimensional strip with a beginning and an end that the player would traverse. This type of environment became an established standard for gameplay, known as a 2D-scroller. Each strip of environment would customarily be known as a level, and conventionally, a player would have to traverse a number of levels in order to complete a game. This was the case with the *SMB* game series, which featured another two games for the NES system (*Super Mario Bros. 2 & 3*), and another 2D-scroller, *Super Mario World*, for the next generation console, the 16-bit Super Nintendo. Each game was built around

¹⁷⁹ The Mario character was first seen in the 1981 arcade game *Donkey Kong*, but *Mario Bros.* was the first game making the character its main protagonist.

the same side-scrolling level system.

With the development of the Super Mario series, although the feature that received the most attention was the increasingly advanced graphics and the diversity of level environments and enemies, each consecutive game did also progress in terms of the player's freedom to roam the environment. With *Mario Bros.*, the player was unable to move beyond the screen, whereas *Super Mario Bros.* allowed for moving lengthwise from left to right. The player was however not able to move the screen backwards from right to left. With *Super Mario Bros. 2* this changed and the player was able to backtrack, scrolling the screen from right to left. *Super Mario Bros. 3* introduced a map system, where the player was, to a certain extent, able to choose the order in which levels were completed. The map represented one of in total 8 'worlds', which the player would traverse, completing levels and beating minor enemies in order to unlock a number of gates, in order to reach the final 'boss-level' of each world, which, when completed, would let the player move on to the next world. The map area was viewed in a 'birds-eye' angle, from the top down, whereas each level remained a 2D-scroller.

Whereas *Super Mario World* was conceived in a similar vein, albeit with better graphics, the release of *Super Mario 64* in 1996, for the Nintendo 64 console radically changed the conventions of the Mario game series. The game was presented in 3D, meaning the player had the ability to move 'inwards' into the game, as opposed to merely along the screen. Although the game was not the very first to attempt at 3D graphics, the game has since been hailed as revolutionary, and has had substantial influence on game-world development since.¹⁸⁰ *Super Mario 64* placed

¹⁸⁰ See for instance reports from IGN, "IGN's Top 100 Games of All Time" (http://uk.top100.ign.com/2007/ign_top_game_5.html), and Gamespot "15 Most Influential Games of All Time"

great emphasis on the new possibilities of world-exploration inherent within 3D game environments, changing the level system and developing instead a system of worlds-within-worlds. The player (Mario) enters a 'main' world at the start of the game, which consists of a large castle and its surroundings. Upon entering the castle, the player finds it contains a number of paintings, each of which can be entered into, which again contain their own worlds. Each world contains a number of missions which the player must complete, replacing the system of individual levels from earlier games. Although there is a system of unlocking levels and missions that must be completed in a certain order, the player does enjoy a large amount of freedom to roam and choose which worlds and missions to visit next.

Super Mario 64 thus is the first game in the series to create an explorable game-world, as opposed to a linear structure in which the player moves constantly in the same direction. Since the emergence of the game, as well as numerous other, similar games in the mid-1990s, an emerging divide can be found between games that are so-called linear, and games that are based on open-ended exploration, so called 'sandbox' games. And although *Super Mario 64* is not usually considered a sandbox game, its importance for the development of the genre should not be underestimated.

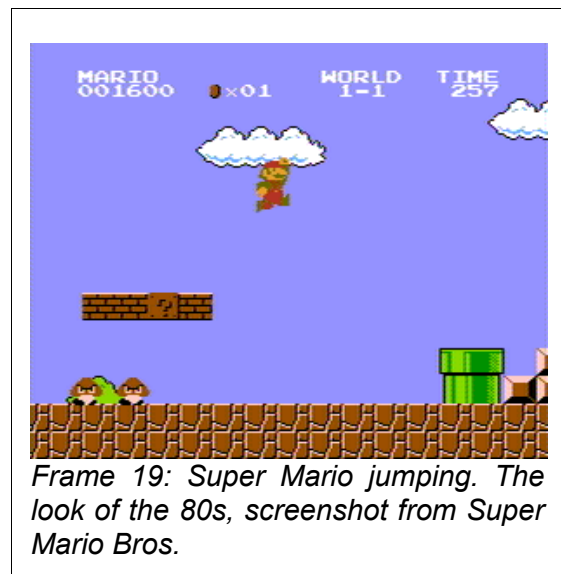
The emphasis on explorable worlds has continued in the *SMB* series since the 64-bit version, with *Super Mario Sunshine* for the Nintendo Gamecube and most recently with *Super Mario Galaxy* for the Nintendo Wii. Like *Super Mario 64* these games have an initial explorable world through which other worlds are accessed. Challenges are completed in each world in order to obtain points (usually in the form

(http://uk.gamespot.com/gamespot/features/video/15influential/p15_01.html) Both accessed 02/01/10.

of stars) which, when a certain number of points have been reached, 'unlocks' access to new worlds.

The development of the *SMB* series can be seen as an illustration of the increasing sophistication of the physical abilities of the computer game medium. Although the series of course also show the development of the graphic qualities of the medium, the importance of physics to the success of the *SMB* series is paramount. Narrative, on the other hand, has changed little since the first game appeared nearly three decades ago. The Princess is still in need of rescue in each instalment of the game, and little else happens in terms of story. Shigeru Miyamoto, the series creator, has been quoted as saying he designs his games around verbs¹⁸¹; and in the case of the *SMB series*, that verb was 'jump'.

The act of jumping is indeed crucial to the game play in all Super Mario games. In the original game, *Mario Bros*, gameplay consisted entirely of jumping up and down 'ledges', as well as jumping on top of enemies in order to kill them. The first side-scroller, *Super Mario Bros*, starts out with the player



Frame 19: Super Mario jumping. The look of the 80s, screenshot from Super Mario Bros.

encountering a box hanging in the air with a question mark. The box, if jumped into from underneath, yields a prize, a mushroom which allows the Mario character to grow in size and be able to withstand an enemy attack, essentially giving the player

¹⁸¹ Henry Jenkins, "Games, The New Lively Art" in *Handbook of Computer Game Studies* ed. Joost Raessens and Jeffery Goldstein (Massachusetts: MIT Press, 2005), 182.

an extra 'life'. The next encounter in the game is with an enemy (also a mushroom, albeit different in appearance), which can be defeated if jumped on top of.

In the initial games of the series, jumping was performed by pushing one button (the 'A' button) on the controller. With the release of *Super Mario 64*, in addition to 3 dimensional space, came the ability to perform more advanced forms of jumping. The Mario character could



now do backflips, 'long jumps', hard stomping jumps and wall-to-wall kick jumps, in addition to 'normal' jumping. The spatial development of the game world had created the need for new abilities to interact with the physical properties of that world. The demands on the technical abilities of the player to perform each different jump escalated; in order to do a back flip, it was necessary to press first the z button and then the a button, whereas in order to stomp jump on an enemy, the reverse order of pressing (first a, then z) was needed.

Since the release of the Nintendo 64 console, along with its competitors like the Playstation and the Sega Dreamcast, hardware developers have been occasionally criticised for making overly complicated controllers, with too many buttons. This resulted in games with too many button combinations, making it increasingly difficult for non-gamers to learn how to appropriate a controller and thus access a game world. It is however possible to argue that an increase in the graphics and spatial abilities of new games meant large number of button combinations were

necessary, simply because, with the continued drive towards realism, complicated and diverse movement in space was another thing that was becoming possible. There are many ways to jump, after all. With the Mario series, Nintendo have created an environment in which a few simple ideas concerning movement in space are explored to their limit in order to create a compelling experience.

Miyamoto's jump, then, allows me to return focus to the body, in particular the relationship between the body and the computer game environment, and argue that the computer game environment is built around the notion of embodied gameplay. If, as has been argued in previous chapters, the controller functions as an extended part of the player's body, computer games may be seen as a subset of the player's experienced reality. It is not a separate entity existing on the screen. Questions regarding image, illusion, simulation and the game's correspondence to physical reality thus need to be considered in the context of the player's movement, actions and expectations within the virtual space.

Let me return to Liberty City, and note that despite the impressive graphic quality of *GTA IV*, the first thing a player does when starting the game for the first time, in order to explore and understand the space, is not to look at it, but to move around in it, attempt to pick up some items, to destroy others, in order, as they say, to get a "feel" of the game. This may seem trivial, but when compared to other environments presented on a screen or surface, such as a painting or a film, it is crucial to understand the importance of action and movement when experiencing virtual space. To again turn to Merleau-Ponty, he argues that we not only respond to objects in the outside world, but also that they respond to us. Our perception and understanding of the world depends on how the world interacts with us. In a

computer game, the experience of realism depends on whether an item yields a certain expected action according to how we treat it. A door might as well be a painting hanging on the wall if it does not open and lead somewhere else when we attempt to open it. With Merleau-Ponty, we see the importance of assertive performative activity as a central means of transmitting a feeling of reality and factuality. Objects appear to us as immediately existing in the outside world through our actions. This is as relevant with regards to virtual space as it is to physical space.

The importance of the spatiality and physical properties of a computer game environment becomes clearer when we remember what happens when an action in a computer game does not render an expected result. If graphic realism is what is usually discussed and celebrated in various gaming magazines and fan-sites, the coherence of a game space is usually taken for granted. Only when a game reveals a glaring incoherence does it become clear how a sense of reality is dependent upon our actions “making sense”. From a phenomenological point of view, incoherence in computer games could be seen as an extension of the tool use theory into virtual environments. A common example of this is found in first-person-shooter games and adventure games, where a mighty weapon like a rocket launcher (often the 'ultimate' weapon a player obtains) will blow your enemies apart in an often excessively violent manner, and yet do no damage whatsoever to a door. In order to open the door the player might need to find a key. All of a sudden the environment has become unmistakably present-at-hand. Other times, an object acquired in a game, again a weapon or a key is common, will only be available for use once. If the player attempts to use the object in a situation different from what it has been intended for by the game designer she will be given a message informing her that “you are not

allowed to use that here”. And finally, most obvious of all, is the fact that the world of the game does at some point end. The gamer will often literally meet an invisible wall, sometimes disguised as a forest or an ocean, and can go no further. What these incoherences do is break the illusion of an autonomous digital world that one may move freely in, and instead reveal the gamespace as something designed and created.

The computer game environment, then, like Zeuxis' grapes, is an illusion in the sense that it is not a 'real' object that exists in the physical world. Nevertheless, although the grapes are virtual, the painting itself is indeed a real object. If we consider the act of playing a computer game an inherently embodied experience, then the game world can not be seen as separate from the 'real' physical world. The dichotomies between real/virtual, real/fiction, real/representation or real/simulation are made ambiguous by the focus on the body. The game is not confined to what takes place on the screen, and the player is not confined to the flesh, or the person sitting on the sofa looking at that screen. Direct access to the world of the game complicates the very notion of that 'world'. It is a separate world in the sense that it is a constructed narrative with its own internal physical logic, yet it is part of the player's experienced reality and extended sense of self through its focus on embodied understanding.

Summary: The body in virtual space

C. S. Lewis, in *Out of the Silent Planet*, the first book in his science fiction trilogy for adults, describes the moment the protagonist, Dr. Ransom, first looks out upon the new planet he finds himself on as follows: “He gazed about him, and the

very intensity of his desire to take in the new world at a glance defeated itself. He saw nothing but colours – colours that refused to form themselves into things. Moreover, he knew nothing yet well enough to see it: you cannot see things till you know roughly what they are.”¹⁸²

The player who first encounters a new computer game environment is similar to Lewis' protagonist, unable to take in what she is seeing. Until she is able to move around, and can base her understanding of the new space she finds herself in on her already-there knowledge of movement in space and interaction with objects, she will not be able to make sense of her surroundings.

The interface of the computer game environment has characteristics similar to that of cinema, but due to the player's involvement, it is more useful to think of the game interface in spatial terms, as opposed to pictorial. Whereas the image, until the advent of the computer, has been related to issues of representation, whether through movement, analogue capture or digital creation, the computer game image, due to its emphasis on simulation, is first and foremost related to embodied experience. Simulation models behaviour as well as appearance, and as such, movement and action is central to it, as well as to our experience of it as a representational tool.

Lev Manovich argues that digital media change viewers into active users, thus changing our concept of what an image is. The image becomes the interface through which the user interacts with the computer. The user's experience of the interface image is thus where the question regarding the representation of reality is located. In Manovich's words, “what kinds of actions can be performed via an image, how easily they can be accomplished, their range – all these play a part in the user's

¹⁸² C. S. Lewis, *Out of the Silent Planet* (London: John Lane, 1951) 46.

assessment of the reality effect of the image.”¹⁸³ Although a common way of thinking about reality in relation to games is through their graphic verisimilitude, from a phenomenological point of view high quality graphic representation is not the basis upon which the experience of reality rests. Instead action and movement in itself is what we base our understanding of the world upon. The assertion that the computer game medium is driven by a desire for increased realism can also be described as a desire for more choice in terms of what the player is able to 'do' in the game. The emphasis on 'doing', as opposed to 'seeing', again brings us back to the body in play.

Computer game play, then, takes place within the temporal feedback loop between player, machine and interface. At the centre of each is the player's body. The player's experience is always inherently embodied, focused on her senses, her sense of self, and her knowledge and understanding of the physical world.

¹⁸³ Manovich, *The Language of New Media*, 183.

Concluding Chapter - Questioning Embodiment

That which has neither utility nor truth nor likeness, nor yet, in its effects, is harmful, can best be judged by the criterion of the charm that is in it, and by the pleasure it affords. Such pleasure, entailing as it does no appreciable good or ill, is play.

Plato

One does not have to ponder Plato's notion of play for very long before realising that he is wrong. There is a lot at stake with play. Pedagogues and psychologists have known for a long time that it is a crucial element in children's development. In most human cultures, play at times take on ritualistic properties, performing important social functions. And when turned into a game, play can be very lucrative both in terms of financial and glorious gain. Only if we can argue that play ceases to be just that as soon as it takes on meaning does it retain Plato's unthreatening definition.

Play, and games, is as old as humanity itself. Yet it is only very recently that the academic study of games has begun to appear. The advent of the computer has made playing a commercial entertainment form rivalling all other media. Yet the diversity and span of this new medium of computer games means we need to question what we mean by the word 'game' itself. Much of the early work dedicated to computer games was concerned specifically with this problem regarding definition. I believe, however, that beyond 'entertainment reliant upon a computer for

its existence¹⁸⁴ it is not possible to provide an all encompassing description incorporating everything that currently falls under the category of 'computer games'.

The exercise of this thesis has been to give a 'thinking through' of computer game play, based on the idea of embodied experience. I do not pretend to argue that my reading will apply to all computer games. I have limited myself mostly to discussing single-player, avatar based games, with a fictional or narrative element to them. My reason for excluding multi-player games, the study of which is becoming extensive, is that I believe that, from the point of view of player experience, single-player and multi-player games are very different. Multi-player games encourage co-operation and virtual social skills, and most importantly, interaction within these games is with other people as well as with technology. The inclusion of other human characters, with their own wills, agendas and unpredictability adds another element to the feedback loop that I have described as making up the computer game experience. The experience of playing a single-player game is different, and for that reason has been the sole focus of my thesis here.

The early days of academic computer game study were characterised by the debate as to whether computer games should be studied as stories, or as games. Although this debate was laid to rest rather quickly with no clear resolution (how could there be?), it is not surprising that this should be the first question asked when approaching games. The problem, I believe, is that the term 'game' applies to a too broad section of entertainment objects in this instance. As I argued in my introduction, it is possible to make an analogy with the term 'moving images', and talk of 'interactive images' as an umbrella term for a variety of computer-based

¹⁸⁴ And as Juul and Ryan have shown, even this definition has its problems. See Ryan, *Avatars of Story*, 181, and Juul, *Half-Real*, 36.

entertainment products, of which 'games' may be one. Still, this does not necessarily narrow it down enough.

Roger Caillois' categories of play and games may provide another means for classification that allows us to look more closely at the specificities of types of games, allowing for the study of genre and avoiding a racing game like *Forza Motorsport* being studied with the same theoretical tools and vocabulary as the fantasy role-playing-game *Dragon Quest*. This approach however does not lay much emphasis on the computer element of games.

I have avoided giving a clear definition of my own understanding of what a 'computer game' is, and have instead chosen to see it as two separate things: one is the 'game-object', the collection of possibilities and rules inscribed as a piece of software, ready to be installed, displayed and interacted with, and the other is the actual game-in-play, the temporal situation that only exists when someone is playing, and that is different with each instance of play. These two ways of understanding 'game' do not need to be opposites, in fact, I believe that in order to understand the game-as-object, it is necessary to first have an understanding of the game-as-experience. The object, after all, comes into being through the experience of playing.

In this concluding chapter I give a summary of my argument, and suggest further directions in which a notion of embodied game play could be taken. First, however, I would like to return to the question regarding the computer game and its relationship to art that began this thesis, and explore what consequences my reading of games might have for our understanding of games in this context.

The recurrent question: But Is It Art?

In my introductory chapter, I described how my own interest in computer game play developed from an interest in the emerging field of digital and net-based art. The aesthetic potential of interactivity and the computer medium, I believe, is currently best and most radically realised in computer games. Other theorists with an interest in games are also looking at them from the point of view of the possibility of games one day becoming 'art', and the development of a dedicated academic field has to a certain extent been about understanding games drawing upon theories, tools and techniques already in use in fields that deal with other objects of art and culture such as cinema and literature.

What, then, would a notion of embodied play, and the idea that the body is at the centre of the game play experience entail in terms of understanding games as art, or at least as objects worthy of being discussed using the vocabulary of art? If computer games are inherently temporal, personal and embodied, how do they function as objects of expression and meaning-making? This is a highly complex question with no easy or obvious answer, but one that I would like to dwell a little further on, as it is a question never far from the surface when the issue regarding the serious study of computer games comes up.

A recent example that illustrates the problem relating to art, expression and computer games is the incident that took place at the 2007 Slamdance Independent Game awards. The awards are part of a bigger independent film festival that also recognises the creative potential of the computer game medium. One of the games shortlisted for winning was the already highly controversial *Super Columbine Massacre Role Playing Game* (SCMRPG). The game was made by an individual

developer who first attempted to remain anonymous, but was eventually 'outed' by angry players as a young film maker named Danny Ledonne. Ledonne, with his background in film rather than computer programming, created the game using a software tool called RPG maker. Combining photographs and cctv footage from the day with rather simple 2-dimensional graphics, the game lets players experience the Columbine school shooting from the point of view of the killers. The two avatars available are the two perpetrators of the shootings.

The inclusion of the game in the Slamdance festival awards caused a lot of outrage among people who claimed it was disrespectful to the victims of that day to make an entertainment product out of the tragedy. Eventually the game was pulled from the competition by the festival organisers. This led to a number of other



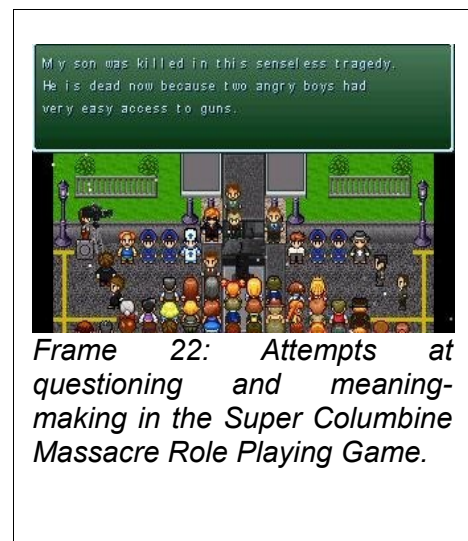
finalists voluntarily pulling out in protest at what they saw as organisers giving in to popular pressure. In the end, there was no award given for best independent game that year.

The incident received some attention at the time from the academic community interested in furthering the cause for computer games to be taken seriously. The computer game, it was argued, should be seen as an artistic medium able to deal with 'serious' issues as well as light entertainment.¹⁸⁵ A number of

¹⁸⁵ Ian Bogost, "Columbine, Video Games as Expression, and Ineffability", *Water Cooler Games* 21/05/06, http://www.bogost.com/watercoolergames/archives/columbine_video.shtml (accessed 03/01/10)

writers claimed that the only reason the game had been pulled was because of a cultural mainstream that does not understand games. Four years earlier, film maker Gus van Sant had won the Palme d'Or at the 2003 Cannes Film Festival for his film *Elephant*, a film which deals with the same topic as *SCMRPG*. Why, some wondered, was it that film makers were 'allowed' to make art about this topic, and were celebrated for it, whereas game designers were not?

The claim that games need to be able to deal with serious issues and that game designers should be seen as artists alongside the makers of other forms of creative entertainment is central to the academic study of computer games. The shape that these new, 'serious' and artistic games should take, however, is a contested point among theorists. Galloway, in calling



Frame 22: Attempts at questioning and meaning-making in the Super Columbine Massacre Role Playing Game.

for an avant-garde of games, argues that “Visual imagery is not what makes video games special... ..Artists should create new grammars of action, not simply new grammars of visuality. They should create alternative algorithms.”¹⁸⁶ Atkins, on the other hand, interested in the fictional and readerly aspect of games, looks forward to the day when “the progress of processor technology, if combined with the creative flair we are used to seeing applied in our other forms of popular entertainment, could lead to the development of a generation of games that transcend the pejorative classification of children's entertainment and are taken as seriously as mass-appeal

¹⁸⁶ Galloway, *Gaming*, 125.

novels and films occasionally are... ..One day, perhaps, the computer game will even produce its *A la Recherche du Temps Perdu* or its *Ulysses*, its *Casablanca* or its *Citizen Kane*.”¹⁸⁷

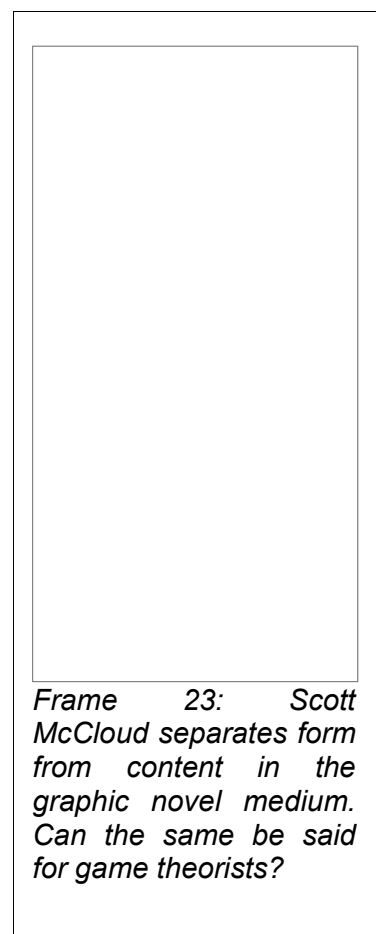
The example of the *SCMRPG* controversy is interesting from the point of view of our understanding of art and its purpose. Although in this case, both the game medium and the film medium dealt with the same content, a school massacre, their means of treatment, and their self-awareness were rather different. Film has been around for approximately a century, and has for the latter half of that seen a vast amount of interest in how it functions to convey meaning. Van Sant's *Elephant* is very much aware of these conventions, and uses them for specific purposes. For instance, the film features a number of unusually long and slow tracking shots, which are effective in terms of presenting a specific atmosphere and experience.

Computer games, on the other hand, are only beginning to see a body of literature dedicated to understanding how they operate technically. Ledonne's game did not use any established techniques in a 'subversive' or contemplative manner, instead Ledonne simply used a tool for fashioning a standard role playing game in which he could choose images and storyline. Had Van Sant's film featured a standard 'Hollywood realism' style of presentation, it is unlikely that it would have garnered the same plaudits that it did, and it is even possible that it too would have been met with hostility similar to *SCMRPG*. The problem then, concerns the relationship between form and content.

¹⁸⁷ Atkins, *More than a Game*, 23-24.

Whether or not one agrees that it should be so, the current art and media landscape is one which gives value and artistic merit to products which appear self-reflective and transgressive from the point of view of form. Scott McCloud, in *Understanding Comics*, his attempt to develop an appreciation and understanding of another medium that, like games, is often placed in the lower echelons of cultural value, begins by severing form from content.¹⁸⁸ Although the content of comics has often been banal and juvenile, he argues, their form is complex and sophisticated, deserving of dedicated study.

There are many parallels that may be drawn between the comics medium and the computer game medium. In a critique of *Understanding Comics*, Dylan Horrocks argues that McCloud's tactic of severing form from content in order to argue for the expressive potential of the medium problematically overlooks a substantial part of what makes comics what they are. In his words: “[McCloud] demonstrates perfectly what makes this dichotomy (and metaphor) so useful. Even if most comics make you want to puke, he suggests, you can still admire the ‘*form*’ of comics. In one fell swoop he has removed all other considerations - genre, style, publishing formats; in short, the whole embarrassing *history* of comics - and focused our attention on their pure, shiny *form*.”¹⁸⁹



¹⁸⁸ Scott McCloud, *Understanding Comics* (New York: HarperCollins, 1994).

¹⁸⁹ Dylan Horrocks, “Inventing Comics” first published in *The Comics Journal* #234, June 2001,

Much of the emerging literature on computer games could stand accused of the same problem. Scholars eager to argue for the seriousness of computer games find it necessary to ignore the content of most games, and instead focus on how they function. The more mainstream and popular computer games tend to heavily feature content found in the science fiction and fantasy genres. These are traditionally genres that are not taken particularly seriously by the academy, yet they do have a meaningful cultural history that academics interested in computer games could draw upon. Science fiction is a long established literary genre with a rich and varied history. It is characterised by the imaginative exploration of possibilities developed by innovations in knowledge and science throughout the 20th century, and can often be seen as intrinsically engaged with the ideological concerns of its culture and time. Science fiction content is often found to be rich with meaning, yet the established modernist frame of reference within literary and cultural theory does not place much value on this.

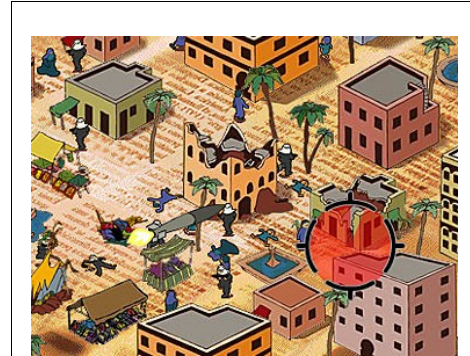
In the case of *SCMRPG* the use of serious content was met with hostility because the computer game medium is not yet recognised or understood in terms of form. Ian Bogost, a fervent defender of the *SCMRPG* game at the time, wrote on his personal homepage: “[T]he notion that an artifact in a medium about a subject is a priori hurtful, damaging, immoral, corrupt, or otherwise objectionable should send up a huge red flag for those of us interested in videogame expression. Despite the widespread press coverage, the news stories are not about the game's representation of Columbine. They are about the fact that a game that represents Columbine in some way exists.”¹⁹⁰ As the scholarly study of games continue, this is likely to change, and

available online: <http://www.hicksville.co.nz/Inventing%20Comics.htm> (accessed 03/01/10).

¹⁹⁰ Ian Bogost, “Columbine, Video Games as Expression, and Ineffability”, online.

already it is possible to find examples of games that appear increasingly self-aware in terms of the formal characteristics of games and game play.

For instance, Gonzalo Frasca's political minigame *September 12th*, is a rather simple flash game with cartoonish graphics available freely online. The player is asked to bomb a Baghdad market, attempting to hit a number of terrorists roaming among civilians. The controls, however, are slightly skewed, making it impossible to ever hit the target properly. No matter how vigorously one tries, it is impossible not to hit civilians alongside terrorists. There is no learning curve where the player eventually masters the game. It is simply impossible not to kill innocent bystanders. And much grief ensues. Through very simple manipulation of the player's actions, *September 12th* is an example of simple symbolism created by means of subverting established expectations.



Frame 24: *September 12th*. A small and simple flash game with a big message.

Frasca argues that what he labels *advergames* will drive forward the idea that computer games are not free of ideological and political content.¹⁹¹ Computer games used for the purpose of advertising is a new field that appears to be gaining in popularity, as a means for spreading awareness of a product to demographics that might be difficult to reach through traditional media. Advergaming can take the form of simple product placement as well as gameplay that actually revolves around the product being advertised. Politicians have also been seen using games as a means for

¹⁹¹ Gonzalo Frasca, "Simulation versus Narrative", 225.

reaching out to demographics thought difficult to relate to through conventional means. These examples illustrate the fact that games are increasingly being thought of as a valid communication medium, able to transmit ideas and opinions.

The question regarding computer games and art, then, is complex, and caught up in a wider discourse surrounding our understanding of value and aesthetics, as well as the function of art and what constitutes 'valuable' content as opposed to mindless entertainment. A theory of the embodied nature of gameplay places emphasis on the notion of immediate experience, and as such would at first appear to fall outside of the echelons of modern art, often characterised by the playful subversion of form, yet as the case of *September 12th* illustrates, there are emerging examples of games that contain 'serious' content whilst also utilising the specificities of the game medium, the importance of the player's actions, for meaningful effect.

The importance of the body and the notion of experience with regards to computer games is likely to become increasingly clear as, for instance, motion sensitive gaming gains in popularity. Let me now turn to a few potential problems and critical directions we can take a theory of embodiment in computer game play.

What is a game?

Throughout the process of writing this thesis I have at times come across a dilemma in terms of determining how to present my research. How does one present something that one argues is inherently temporal, interactive and personal? It is common in game studies to illustrate arguments with screenshots taken from the game in question, as has been the case throughout this thesis. But these are still

images, captured in-game by one specific player. It should be emphasised that a screenshot cannot give an adequate representation of the material. This is a problem that can also be found in film studies -when presenting an argument related to the moving image, it can be difficult sometimes to illustrate this with only the aid of still images. Some texts try to overcome the problem by showing a series of screenshots in succession. Others elaborately describe what takes place in the actual scene relevant to the discussion at hand. Modern computer technology has allowed for the display of moving images when giving a spoken presentation to an audience, although time usually does not allow for a whole film to be shown, and as such, certain contextual information will still be missing.

For computer games, this problem is intensified. My actions within a game will render a specific visual display on the screen, but it is not necessarily one that another player would ever see. Similarly, the screenshot captured to illustrate a point in a written text cannot convey the embodied experience of acting within the game. In a spoken presentation I could potentially show some live footage captured when playing, but it would be me playing and as such would not illustrate my point about the embodied nature of play and the notion of extending the self. In order to illustrate that, in a conference presentation I would have to hand out a games console and game to each individual in the audience, and allow them to create their own scenarios, whereas papers would have to be accompanied by links to a space where the game could be experienced online.

I could look to disciplines outside of film theory and cultural studies to discover how those fields present their ideas. Architecture might be a useful starting point if, as has been argued, game environments are inherently spatial. Yet

presentations and essays in the discipline of architecture also tend to remain wedded to the visual and textual. The same is true for most other disciplines. Text remains the main medium of representation, with images often in place to provide illustrations. For a thesis that questions the experience of computer game play, and their relationship to other representational arts, it is inevitable that the mode of representation of ideas itself should become subject to questioning.

Despite the rapid development of audiovisual and computational media over the past century, the recent emerging awareness of the role of the senses and the body when it comes to experience, and the interactive nature of much contemporary entertainment, when it comes to the art of presentation and explanation, little has changed in centuries of scholarship. My own thesis illustrates this. It consists of text on pages. Footnotes at the bottom of each page allow for a certain break in the linearity of reading, and references at the end of the text suggest possible links both in terms of where the thoughts and information found in this text come from, as well as where a potential reader could turn next. Images interspersed in the text serve to illustrate certain points in which having a visual aid proves useful. Although this pertains to a form of hypertextuality, my thesis remains an autonomous object to be read, consisting of symbols on pages. The object of my study, according to my own argument with regards to its nature, then remains inherently different from my means for representing it.

There are of course examples of alternative methods of undertaking and presenting research. Universities occasionally allow for projects to be done 'by practice', in fields such as film, fine art, architecture and computing, where the end result is an object other than a text. Yet these examples are rare. Similarly, in the

wider fields of academic theory, published monographs and edited collections of text remain the norm in terms of how to present an idea. There are again a few exceptions to this, such as McCloud's *Understanding Comics*, in which the form of the graphic novel is used to present a theory of the form of the graphic novel, but this is a rare example.

Do the means of presentation say anything at all about the work itself? What my problem has conjured up to me is the question that keeps recurring when attempting to theorise games: what exactly is the computer game? Is it a piece of software? To an extent, yes, but at the same time, no. I could display code to my audience to illustrate a computer game, but that would be inherently meaningless in terms of illustrating the experience of acting within a game world. The 'game', as I have argued throughout this text, is an experience that is individual, temporal and embodied. It exist in the feedback loop between player, machine and software, and illustrating an experience is a complicated matter. The interactive, personal aspect of computer game play means it is impossible to represent exactly what other players might be seeing on the screen in front of them when they themselves are playing.

My question could be rephrased as asking what exactly is the 'object' that constitutes the computer game? As I have found, taking into account the interactive nature of the object itself means the 'object itself' is a problematic definition to begin with.

In addition to the question regarding the temporal nature of game play that is a direct consequence of interactivity comes the question of mastery and control. I have argued that the experience of game play, the notion of *flow* as it is occasionally referred to, comes through a process of making an external device, a game controller,

an extended part of one's own body. This too makes the question regarding representing my argument tricky. How does one illustrate an argument to someone who has not experienced this mastery, or even to someone who has, only not with regards to the particular game I might be talking about at the time? Whereas reading and seeing are universal skills that the majority of people possess, game playing is not.

The British humour writer Charlie Brooker wrote in December 2009 a Guardian article giving an account of the difficulties game players experience when they attempt to get non-gaming friends to join in with their play. Describing the process of explaining how to use a controller to someone unaccustomed to it, Brooker gives an amusing account of the frustrations of both new game players and their mentors: “They run into walls or hit pause by mistake. They swing the camera around until they can see nothing but their own feet, then forward-roll under a lorry. They try to put the controller down, complaining that they're "no good at this". You force them to have another go, but within minutes you're behaving like a bad backseat driver. "You're in crouch mode," you sigh, as their character waddles comically up the street. "Take it out of crouch mode." Instead they throw a grenade at their own feet, killing themselves and several bystanders. They moan that it's too hard. You force them to try again.”¹⁹²

Brooker's account illustrates the process of learning that is at the core of each gaming experience. In chapter 2 I argued that the process of appropriating the controller allows the player to extend herself into the game. Like Merleau-Ponty's

¹⁹² Charlie Brooker, “Why I love Video Games”, *The Guardian Online*, 11/12/09, <http://www.guardian.co.uk/technology/2009/dec/11/charlie-brooker-i-love-videogames> (accessed 06/01/10).

blind man with the white cane, the controller eventually becomes part of the player's extended body. I would like here, however, to dwell a little further on this process itself.

Arguably, this process of appropriating the game controller is twofold. Drawing upon the well-known phenomenological notion of being-in-the-world, if we can speak of an eventual state of 'being-in-the-game', then this is one that takes place not without a certain amount of training and gradually developing understanding. On the one hand, each new game represents a new process of learning the specificities of how to control that game. The various moves an avatar can perform, and the way non-diegetic information is accessed and organised will vary from game to game, and a player will usually find herself spending several hours 'becoming one' with her controller.

On the other hand, games and game controllers themselves have over the years developed their own internal conventions that experienced players are likely to be aware of. For instance, it is an unwritten 'rule' that an avatar's ability to walk, and the direction taken while walking, in most current-generation games is controlled by the left-hand analogue stick. Similarly, the act of firing a gun is usually done by a button using the player's right hand. These are abstract bodily actions made meaningful and concrete when seen in the context of the controller as an extended part of the body. But they are also familiar acts to a seasoned game player. By focusing on the frustrations of the 'newbie', as the inexperienced player is often labelled, we see the complex process of learning and appropriation that takes place both with each new game, as well as gradually over time, that is fundamental to the computer game play experience.

The recent success and rapid development of motion sensitive game play has been frequently discussed in terms of its relative ease of access for players not accustomed to conventional computer games. These games remove the abstract action and allow the player to engage directly in the meaningful and concrete act that the game simulates. Whereas the Nintendo Wii has already proven to be one of the most successful computer game consoles ever released, as this is being written, other hardware producers such as Sony and Microsoft appear also to be moving into motion sensitive gaming territory. Microsoft announced its latest software, 'Project Natal', at the E3 trade convention in the summer of 2009, a camera-controlled motion-tracking technology that allows the player to engage with the game on screen without any technological peripherals attached to her body at all.¹⁹³

These new technologies will perhaps eventually remove the current situation in which learning how to play and control a computer game requires a large amount of effort. What they emphasise is the extent to which the body is at the centre of the game play experience. To an extent, we can compare this to the process of learning to read, in that it is a skill that is acquired over time and eventually allows for meaningful interaction with and interpretation of an object. However, whereas learning to read means learning to interpret an abstract system of symbols based on phonetic sounds, learning to play a game draws upon the player's already-there understanding of acting and moving within the world.

Both my difficulty in adequately finding means for representing my thoughts on interactivity, and the importance of learning and appropriating an object, point to the importance of the personalised, embodied nature of game play. The notion of a

¹⁹³ BBC News, "Microsoft Unveil New Controller", *BBC News Online*, 02/06/09, <http://news.bbc.co.uk/1/hi/8077369.stm> (accessed 06/01/10).

computer game being an object related to one's experience of being-in-the world is what has led me to phenomenology when trying to understand game play.

The problem regarding 'the body'

I have chosen throughout my thesis to make Merleau-Ponty's phenomenological theories the basis of my own argument. Drawing upon a philosophy of experience in order to explore the embodied nature of game play this thesis constitutes a 'thinking through' of the experience of interacting with computer games. The ambiguity of mastery and control, and the relationship between the various actors in the feedback loop of play I have found lends itself very well to the descriptions of experience that Merleau-Ponty offers. In lectures given on French radio in 1948, he sums up the experience of being as such: "So it is fairly widely recognised that the relationship between human beings and things is no longer one of distance and mastery such as that which obtained between the sovereign mind and the piece of wax in Descartes' famous description. Rather, the relationship is less clear-cut: vertiginous proximity prevents us both from apprehending ourselves as a pure intellect separate from things and from defining things as pure objects lacking in all human attributes."¹⁹⁴

This inability to separate mind, body, self and object is one I believe is at the core of game play. I have shown, in my previous three chapters, how the player, the machine as hardware object and the game as software come together and combine to make the actual 'game object' itself.

I am aware, however, that by making Merleau-Ponty's theory of

¹⁹⁴ Maurice Merleau-Ponty, *The World of Perception* (Abingdon: Routledge, 2004), 66.

phenomenology my basis for thinking, I am in danger of ignoring an extensive and highly influential body of critique that has taken place within the humanistic disciplines in the time since *The Phenomenology of Perception* was published. The question regarding 'the body' is not necessarily straight forward, and the decades since Merleau-Ponty wrote his theories have seen a substantial amount of thinking dedicated to questioning what the body really is.

While writing this thesis, I was asked on a number of occasions why I had chosen to use the female pronoun to describe the player. This was usually asked by persons not versed in humanistic critical theory, where using the female pronoun has to some extent become the norm, in a reversal of the long-established use of the male pronoun to signify not just 'man', but 'human'. Feminist critique of language has led to a situation in which certain expressions that naturalise the male as encompassing all people are now questioned and used less in official language and discourse, but it is a slow process which is met with a lot of resistance. At first, my choice to use the female pronoun was simply out of learned habit and a desire not to perpetuate the use of 'he' as the default 'anyone', and of course, I myself am a female gamer. Throughout the process of writing, however, I have occasionally come to question this.

In the field of computer games particularly, the stereotypical gamer is resoundingly male. As such, the use of the female pronoun stands out particularly in this context. Although statistics surveyed for the Entertainment Software Association in 2008 indicate that females make up 40% of computer game players, this is not necessarily reflected in mainstream representations of gamers, and also not necessarily reflected in games themselves.

To use one example, in chapter 3 I mentioned the game *Mass Effect* which

allows the player to choose the gender of her avatar with little detriment to the story. Her character is simply referred to as 'Captain Shepard' whether she is female or male. Throughout the course of game play, however, it becomes vaguely apparent that the player is nevertheless expected to be male. As a female player, certain of the conversations and interactions I would have with female members of my team did not appear natural, as female non player characters' scripted attitude displayed a subtle sexual and flirtatious behaviour that simply did not 'feel right'. It became clear to me rather early on that the game had been created with a male player in mind, and that it is not necessarily possible to simply swap genders of two characters in a main storyline, in this case the player's avatar-protagonist, and the chosen love interest, and have the remaining result 'feel natural'.

There are a number of issues at stake in this example. The notion of something 'feeling' right or wrong brings us back to the concern regarding embodied experience in game play, but in this instance that embodied experience has taken a specifically gendered turn. The player's body in the instance of my example is not simply a generic body. Throughout this thesis I have referred to the body in the phenomenological way, as an abstract locus of experience concentrated around sensation and cognition in the flesh. Here, however, the body in question is a specifically female body. This notion of a gendered body moves the question regarding embodied experience into the realm of analysis of representation, ideology and discourse.

A great legacy of critical cultural theory has been the understanding that the body is not generic and abstract, and that elements such as gender, race and disability profoundly influence the embodied experience. To a certain extent we can talk of two

different bodies: the body-subject, which is what Merleau-Ponty argues is the ontological state of all humans, and the body-object, which in critical discourse can be seen as reading the body as an object, or 'text', that can be interpreted by the tools of theory and philosophy. What my example of the experience of playing *Mass Effect* however illustrates is the extent to which the body-object constitutes an intrinsic part of the body-subject. We perceive the world through our bodies as body-subjects, yet we also act and react to other body-objects, meaning that in all encounters we will be both subject and object. If I am acted upon as an object different from that which I experience myself as a subject, then the resulting exchange will not 'feel right'.

A critique of my own reading throughout this thesis then would be that I have not taken into consideration the specific and varied nature of embodiment. Although I have used a female pronoun, with an ideological meaning imbued in it from feminist critical theory, the body of the player I have referred to has remained the abstract body-subject of a phenomenological philosophy of experience. I have done this as I believe it is necessary to profoundly anchor the experience of play in the body before moving on to (de)constructing a discourse of the player's body, both physical and virtual. The notion of the body-object, or the body-as-text is widespread in cultural studies, and by, to a certain extent, ignoring this issue I have been able to focus exclusively on the role of the body as locus of experience in the context of computer game play.

There already exist different examples in journalistic and academic writing on computer games that take into consideration the various embodied positions a player may take. In chapter 3 I mentioned research done on gender-bending in online

games, and there are also examples of work done on single-player games and avatars, especially Lara Croft.¹⁹⁵ The idea of gender as a form of performance, well known in cultural studies¹⁹⁶, is one that a the computer game is particularly suited to explore, in that it allows players to hide their physical selves behind a virtual self, and act out ideas and fantasies in a 'safe' environment. Similarly, disabled players, who often experience themselves as different on an everyday basis, in online play are able to move beyond their disability in computer game play and interact with other people without being marked out as unusual. The ability to experiment with a different 'self' is, as I described in chapter 3, a frequent attraction of virtual communities and online games.

The development of computer game hardware however also emphasises the embodied nature of game play when seen in the context of disability. It is undeniable that certain disabilities make picking up a controller and moving one's body in order to play difficult, if not impossible. As the case is with other entertainment media, such as literature and cinema, there exist special interest groups that are attempting to create hardware peripherals that disabled game players can use¹⁹⁷, yet the cost of game development means that these kind of initiatives remain on the fringes. In the context of my thesis it does however illustrate that the body is not simply an abstract locus of sensation and understanding: its specificities radically alter the experience of game play.

With regards to race, the release of the game *Resident Evil 5* in March 2009 came with numerous accusations of being problematically racist. Trailers for the

¹⁹⁵ Helen W. Kennedy, "Lara Croft: Feminist Icon or Cyberbimbo? On the Limits of Textual Analysis" in *Game Studies* vol. 2:2. <http://www.gamestudies.org/0202/kennedy/> (accessed 06/01/10).

¹⁹⁶ See Judith Butler, *Gender Trouble* (London: Routledge: 2006).

¹⁹⁷ See for instance the Able Gamers foundation: <http://www.ablegamersfoundation.org/> (accessed 06/01/10).

game which had been released in 2007 showed a white male protagonist (the player's avatar) walking into a crowd of black men, shooting and killing them all. This rather explicit trailer was accused of pertaining to traditional racist and colonial imagery, despite the developer, Capcom, protesting that the narrative of this particular game simply happened to be set in Africa and that the game contained a diverse array of characters. The release of the game saw the protagonist character have a black female companion character, which it was speculated was added to the game late, after the controversy surrounding the trailer footage. What was not questioned, however, was the issue of the eventual relationship between the physical player and her virtual (white male) avatar. Although it is reasonable to assume that the majority of players of *Resident Evil 5* may indeed have been white males, this would certainly not be the case exclusively. The relationship between player and avatar, which I have argued can be seen as both 'cyborgian' as well as one of acting, takes on a further complication when the player and avatar are not identified as similar body-objects. Does the notion of a white man taking on the role of a white man killing black men differ from the notion of a black man taking on the role of a white man killing black men? Is there an added layer of meaning in such an act that theorists of game play must take into consideration?

These are a few illustrations emphasising the fact that the body is also an object, and when it comes to computer game play, the body-object is an intrinsic part of the experience. As computer games have become more pluralised, featuring an increasingly wide array of genres, styles, stories and mechanisms, so have gamers become a more extensive and diverse group, featuring a wide number of embodied experiences. The multiple positionings that critical cultural theory has opened up

over the latter half of the 20th century must also be applied to games and gamers. There is not 'the body' of the player, there are a multitude of bodies, each bringing their own unique experience of being-in-the-world to the experience of being-in-the-game. Research on the various positionings of the player, then, is necessary, and is already taking shape. Nevertheless, I contend that arguing for the specific importance of Merleau-Ponty's body-subject in relation to game play has been a necessary step, to a certain extent one of going 'back to basics'. We must anchor the experience of play in the body before we can begin to understand and critique the body.

Summary: Being Virtual: Embodiment and Experience in Interactive Computer Game Play

This thesis has argued that the notion of player experience in computer game play should be understood as intrinsically located in the body of the player. Games have in the past few decades carved out an important space in contemporary culture, and understanding their specific attributes and meaning is a necessary endeavour for critical cultural theory. In chapter 1 I presented a framework of research that currently exists in order to position my own argument. I described the emerging field of game studies, and noted some of the seminal literature that this field draws upon. I accounted for the phenomenological theories of Merleau-Ponty, which underpins my own thinking throughout the course of this thesis, and I gave a summary of the wider field of 'cybertheory', which the study of computer games often finds itself implicated in.

In chapter 2 I used the game *Rez* to illustrate the argument that computer game hardware acts directly upon the body to garner an experience. Using the idea of VR as an illustration, I argued that the body is the means through which our understanding of the environment surrounding us is experienced. I also argued that, drawing upon phenomenological theory, the computer game controller can be seen as an extension of the player, rendering the player into what we may label a type of cyborg. The body of the player, then, becomes part of the hardware that constitutes the underlying platform on which the computer game experience plays out.

In chapter 3 I discussed the relationship between the player and her avatar, between the physical body and the virtual body. I argued that the idea of action in computer game play should be seen as a form of active and embodied control as opposed to creative control, which has so far often been the case in discussions of interactive entertainment. To this end, I discussed the idea of acting as a metaphor for understanding game play, drawing upon the game *Pathologic*. The notion of acting led me on to a consideration of identity and the virtual body, returning to the idea of the cyborg and questioning whose identity, the player or the avatar, at various times may take precedence in computer game play. I finished with the argument that the avatar allows the player to become part of the software of the game, having control over certain directions that may be taken, while also being required to submit to the rules laid down in code.

In chapter 4 I questioned the interface of the computer game, the environment in which the player moves. Looking at the history of art and visual culture, I discussed whether computer games may be seen as representations in the conventional sense. Drawing upon two of the most successful computer game

franchises of all time, *Grand Theft Auto* and *Super Mario Brothers* I argued that the environment of computer games are created around the players embodied understanding of movement and space, and that the behaviour of objects and characters, and their independent autonomy means we need to look beyond traditional notions of representation when understanding games. The relationship between virtual environments and reality is complex for instance in the sense that laws of physics may be subverted, but if they are subverted too much everything loses its meaning. Our basic understanding of being-in-the-world thus underlies all attempts at constructing computer rendered environments, whether they pertain to visual realism or not.

To a certain extent, my argument thus began in the physical body and ended up in the physical world. A phenomenological reading of the computer game experience then demonstrates the problem with simplistic notions of computer games as separate, virtual, or 'not-real', objects. The computer game experience is one that is temporal and individual, and any analysis of games should begin with this realisation. As Merleau-Ponty argues: "Bodily experience forces us to acknowledge an imposition of meaning which is not the work of a universal constituting consciousness, a meaning which clings to certain contents. My body is that meaningful core which behaves like a general function."¹⁹⁸ As computer games and the technology they rely upon mature further and as our understanding of them deepens, the body as locus of experience should remain in our awareness, despite the directions the medium might take. There is always a danger in writing a thesis on a topic so contemporary, so fast changing and so ubiquitous as games. I can only hope

¹⁹⁸ Merleau-Ponty, *The Phenomenology of Perception*, 170.

that the arguments made here may be seen as a 'snapshot' of the state of computer games towards the end of the first decade of the 21st century, and that future developments will prove them to be either part of an emerging understanding that is eventually regarded as obvious, or merely an interesting aside as technology takes a different track. I look forward to finding out.

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List of Games

Title, Year, Developer, Publisher (if applicable).

Adventure (1976) William Crowther and Don Woods, CRL

America's Army (2002) U.S. Army

Battlefield (2002) EA Digital Illusions CE, Electronic Arts

Championship Manager (1992) Intelek, Domark

Civilization (1991) MicroProse

Close Combat (1996) Atomic Games, Microsoft

Computer Space (1971) Nutting Associates

Counter Strike (1999) Valve Software, Vivendi Universal and Microsoft Game Studios

Crayon Physics (2009) Petri Purho

Crysis (2007) Crytek Frankfurt, Electronic Arts

Doom (1993) id Software, id Software and others

Dr. Kawashima's Brain Training: How Old is Your Brain? (2005) Nintendo

Dragon Quest (1980) Simulation Publications, TSR

Duck Hunt (1984) Nintendo

Electroplankton (2005) Indies Zero, Nintendo

Enter the Matrix (2003) Shiny Entertainment, Atari and Warner Bros. Interactive

Façade (2005) Procedural Arts

Final Fantasy VII (1997) Square, Square/Sony/Eidos Interactive

Flight Simulator (1982) subLOGIC, Microsoft

fIOW (2006) Jenova Chen and Nicholas Clark

Forza Motorsport (2005) Turn 10, Microsoft Game Studios

Grand Theft Auto (1997) Rockstar North, Rockstar Games

Grand Theft Auto IV (2008) Rockstar North, Rockstar Games

Half-Life (1998) Valve Corporation, Sierra Studios and Electronic Arts

Halo (2001) Bungie, Microsoft Game Studios

Little Big Planet (2008) Media Molecule. Sony Computer Entertainment Europe

Lumines (2005) Q Entertainment, Ubisoft

Manhunt 2 (2007) Rockstar North, Rockstar Games

Mario Bros. (1983) Nintendo

Mass Effect (2007) BioWare, Microsoft Game Studios

Max Payne 2 (2003) Remedy Entertainment, Rockstar Games

Ouendan (2005) iNiS, Nintendo

Pac Man (1980) Namco, Midway

Pathologic (2005) Ice-Pick Lodge, Buka Entertainment and G2 Games

Pong (1972) Atari Inc.

Portal (2007) Valve Corporation

Rez (2001) United Game Artists, Sega

Rez HD, Q Entertainment, Microsoft Game Studios

Second Life (2003) Linden Research Inc.

SimCity (1989) Maxis

Siren (2004) Japan Studio, Sony Computer Entertainment

Siren Blood Curse (2008) Japan Studio, Sony Computer Entertainment

Solitaire (1990) Microsoft

Solomon's Key (1987) Tecmo

Space Invaders (1978) Taito Corporation, Midway

Spacewar (1962) Steve Russell

Super Columbine Massacre RPG (2005) Danny Ledonne

Super Mario 64 (1996) Nintendo

Super Mario Bros. 2. (1988) Nintendo

Super Mario Bros. (1985) Nintendo

Super Mario Bros. 3 (1988), Nintendo

Super Mario Galaxy (2007) Nintendo

Super Mario Sunshine (2002) Nintendo

Super Mario World (1990) Nintendo

Tennis for Two (1958) William Higinbotham

Tetris (1984) Alexey Pagitnov and Vadim Gerasimov, various

The Adventures of Lolo 2 (1990) HAL Laboratory

The Elder Scrolls: Oblivion (2006) Bethesda Softworks

The Legend of Zelda (1986) Nintendo

The Sims (2000) Maxis, Electronic Arts

Tomb Raider (1996) Core Design and Crystal Dynamics, Eidos Interactive

Wii Fit (2007) Nintendo

Wii Music (2008) Nintendo

Wii Play (2006) Nintendo

Wii Sports (2006) Nintendo

World of Warcraft (2004) Blizzard Entertainment

Zelda: Majora's Mask (2000) Nintendo EAD, Nintendo

