YEAR 3 CONTEXTUAL PRACTISE

CRITICAL STUDY

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CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

The ideas that will be explored in this critical study are how simulations in games challenge our ideas on relationships, identity and our views on reality. How are our own perceptions of life affected by the emerging simulations of artificial life found in multimedia and games?

For my critical study I have decided to research into a particular area of interactive multimedia, which is the online game genre. As I am building an online game for my final major project I am interested in how people view these games and how they make us question the boundaries between reality and the virtual. In my final major project, the basic goal of the game is to help an artificial life form through cyberspace (my own representation of it), as you do so the creature evolves depending on the users choices. Eventually the creature can be saved in 'The Cyber Sanctuary' (a holding area for all the creatures) and played with like a pet.

In chapter one I will begin by discussing a text by Sherry Turkle, she has focused her research on psychoanalysis, culture and on the psychology of peoples relationship with technology, especially computer technology and computer addiction. In her book *Life On The Screen,* which is the source of my main text Turkle discusses from a psycologists point of view how people view their own computers, if they see them as a tool or infact an extension of the real world. She raises issues that relate closely to the ideas I wish to explore in this critical study. My aim for this chapter is to establish how we have become accustomed to playing computer games that are now quite complex. I would like to discuss how complex games such as simulation games have begun to make us think about real world issues and whether these games help educate us or are seen purely as entertainment without any thought provoking value. Finally in this chapter I will discuss how the Internet has provided a platform for online communities and multiplayer games and whether these games are beginning to make us question our views on relationships and identity.

In chapter two I will first begin by discussing simulations of artificial life and if these simulation have begun to make us question what we consider to be alive. I will discuss in particular virtual pet games that are available on the Internet and also in other forms like the Tamagotchi pets sold as a key ring. I will then begin to talk about the work of my chosen practitioner. I have chosen to look at a series of games called Creatures, which was originally created by Steve Grand and is now under the company name Gameware Development. First released in 1996, the games are based on artificial life. I have selected the Creatures series of games because they relates closely to my research for this critical study. Creatures first started out as a single player game but the more recent edition to the Creatures series is an online multiplayer game.

CHAPTER ONE

In this chapter, I will focus on the theories of simulations in games. I will explore how representations of artificial life have started to make us question the boundaries between the real and the virtual. I will also discuss how online games and communities have further blurred the boundaries between the real and the virtual.

RULES OF PLAY

Life on the Screen[a] is a book about the relationship between computers and people and how we are starting to re-evaluate our own identities, thoughts and relationships towards the Internet. For my research I've chosen a section from the book '*The Games People Play: Simulation and its Discontent*'[b] where Sherry Turkle discusses simulation in games and how we interpret simulations.

Sherry Turkle introduces the text by discussing the introduction of the early video games of the 1970's such as Space Invaders and how they brought the computer culture into everyday life[c]. Turkle highlights how these games helped us to understand that the constraints of reality need not apply in cyberspace. The rules we observe in reality such as gravity may not apply in a computer game. Unlike the real world, in a computer game you may have the ability to fly or teleport from one area to another. The early video games help young gamers to become familiar with the rules of simulation. Sherry Turkle describes this as '*Socialization into the culture of simulation*'[d].

Turkle writes about how these rules were more defined in the earlier computer games[e]. In Space Invaders the aim was to shoot all the enemies before they reached the bottom of the screen and achieve a high score (Figure 1). In these simple games the user quickly understood what the game designer's rules were, they '*deciphered its logic*'[f] as Sherry Turkle put it.

'Getting to know a game required you to decipher its logic, understand the intent of its designer, and achieve a meeting of the minds with the program behind the game'[g]

In order for you to fully become accustomed to the game play, you first have to understand the program and figure out what you can and cannot do within the game. You have to learn how the computer game will respond to your actions and the consequences to your actions. In the early games as Turkle pointed out these rules were simple and quickly understood.

For instance, *Pong*[h], which is one of the very earliest video games, has simple rules. The player must move a pad up and down to stop the ball from hitting the player's side of the screen (figure 2). The rules are a very simplified version of tennis to some extent. You play against either another player or against the computer. Each time your opponent misses the ball you gain a point. It will only take the player one or two attempts

at the game before they will fully grasp the concept, then they can focus more on the game play rather than what they have to do. Their understanding starts to become semiautomatic[i], putting the user in a trance like state whilst playing the game. They stop thinking about the games rules as they involve themselves in the game. Sherry Turkle noted that this inhabiting of game spaces was the start of the '*culture of simulation'*[j]. The early video games help players to become accustomed to thinking like a computer and seeing reality in a different perspective.

If you were to play a more current game like *'Need for Speed – Most Wanted'* [k] the rules are less obvious. This game is a racing car game; however it has a continuing narrative throughout. In order for the player to progress through the game they must challenge certain rivals. Before they can do this they must first achieve certain milestones like win four races, get caught speeding three times and make enough money to buy parts for your racing car (Figure 3).

To people who are unaccustomed to playing computer games, *'Pong'* might seem the more appealing choice between the two simply because it is game play at face value, instant entertainment without having to think or become too involved. However, computers and games consoles are now becoming a more common household item[l]. Either you have experienced and played computer games as you have grown up or your younger siblings, children, friends or family have owned a computer. We have become familiar with them and in doing so have become accustomed to the complex rules they bring along with them.

Figure 1 – Space Invaders

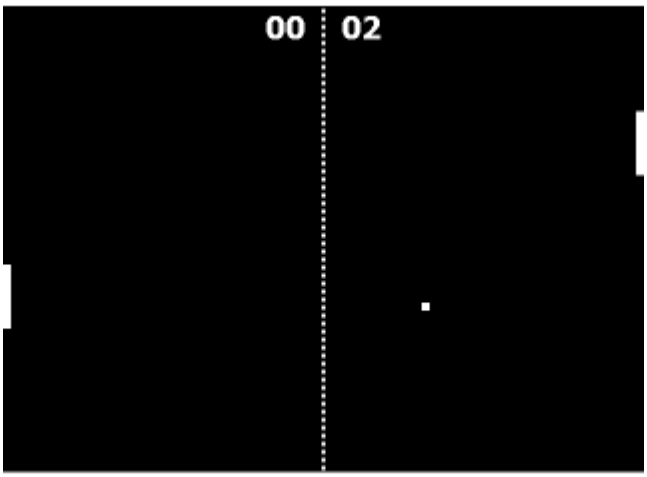

Figure 2 - Screenshot of the video game 'Pong'

Figure 3 – Screenshot from the game Need 4 Speed – Most wanted

SIMULATION GAMES

As computer technology has progressed it has allowed computer games to become more complex, with greater emphasis on creating rich, engaging, and realistic environments. Sherry Turkles discusses such a game in her text called Myst[m] that is a puzzle adventure game. The user can spend hours exploring and solving puzzles to advance around the world (Figure 4). In these types of games the route through the game is not obvious, it requires time and patience to 'decipher the logic' of the game. Sherry Turkle tries to discover the difference between games such as Myst, which are more about exploration and thought than other games, which focus more on fast action gaming and obtaining goals to win. She asks children who have played Myst and similar games such as the Sim series[n] (figure5) about what they think are the differences[o]. The children remark that games such as Myst are not about winning, and that they have no rules as such. Instead they are more about the experience, acting on intuition to help you move thorough the game. This is especially true for the Sim series games; the children do not have to fully understand the whole game and how it works in order for them to play it.

With simulation games, usually the best way to approach them is to play them in order to learn how they work; I know this from experience as I've played them myself. More often than not you cannot understand the full complexity of the simulation; instead you accept that certain things just happen. For example when you feed a creature a certain food it becomes tired or dies. You might not understand why the food affected the creature that way, but you will learn not to give it that food item again. As Sherry Turkle put it '*that to learn to play you have to play to learn*'[p].

Turkle describes how there are different ways to approach and view simulations. By accepting that the food will affect the creature in a negative way but not fully understanding why Turkle describes this as '*simulation resignation*'[q], accepting the simulation on its own terms. However, if you were to reject the simulation, either because you did not fully understand it or because you view simulations in a negative manner then Sherry Turkle describes it as '*simulation denial*'[r]. Interestingly she offers another response, to see the simulations as a means of '*consciousness-raising*'[s]. Instead of denying or accepting the simulation, why not try to understand its hidden assumptions.

In games such as SimCity[t] that depend upon the player's choices, they also help us to think about real world choices. The SimCity game, which is a social simulation, is based around the player building and managing a city, taking into consideration tax, budgeting, city services, pollution control and a lot more (figure 6). Although it is based on reality it is not an accurate simulation of how a community and city would develop. However it provides some education on how social policies work. The user is forced to make choices in the game in order for the game to progress and to help the city develop. The player has to make a decision, which could have a positive effect or equally a negative affect on how the city would grow. Much like in SimCity our own choices also has an effect on our own lives. In some respect, SimCity helps us to realise how our own choices affect real world politics, economics and social planning like voting for political party for example.

Turkle discusses how SimCity has hidden assumptions and that the games model is biased, because of the games designer's own theories on how the city should be affected by your choices[u]. So no matter how much choice and freedom the game offers the player, they are still ultimately controlled by the games hidden assumptions. Maybe if the player could change the games core model then it would offer more freedom.

Turkle also raises the issue that it could just be a case of '*art imitating life*'[v], whereby we use computer models to understand complex systems such as social policy. If these systems were used as a means to understand and change social policy then surly, the assumptions of the model would determine the policy. In this she say that '*Simulation games are not just objects for thinking about the real world but also cause us to reflect on how the real world has itself become a simulation game*'[w]

Apart from Simulation games, computer games also model life, for example war games, in particular Turkle mentions Platoon[x] a Nintendo war game, but more recently their have been better examples of this such as the Medal of Honour[y] series of games, which focus on real scenarios in the second world war (figure 7). Buy using war scenarios that are based on real events the simulation becomes '*transparent*'[z] -when the way it works is seen through its structure a term used throughout Turkle's book. The rules of the game become obvious as they follow reality and a real scenario. Our assumptions of games such as Medal Of Honour

make us question our own assumption on real life.

War games deal with death, although in the game the player can have a second chance at life, it still highlights the issue of war, death and our own mortality. War games confront us with reality making us realise how easily a life can be taken. In order for you to progress through the game you must survive by killing the enemy. I think that like the Sim games, war games such as Medal of Honour that try to recreate actual real life events educate the player on how brutal and difficult real war or life is. But even though the Medal of Honour game is trying to simulate a real event, it is by no means an accurate depiction. Scattered throughout the levels are health packs which replenish your health status, bullets can hit you but do not harm you in the same way that a real bullet would in reality and as I mention earlier when you die you can restart the level. In that respect there is still a defined difference between the real and the virtual but the virtual offers us some insight into the real. Turkle points out that we also turn games into reality and that there is circularity *in our relationship with simulations* '[aa]. We have war games that project a viewpoint that is similar to a real battlefield but also real soldiers prepare for battle using simulations of war.

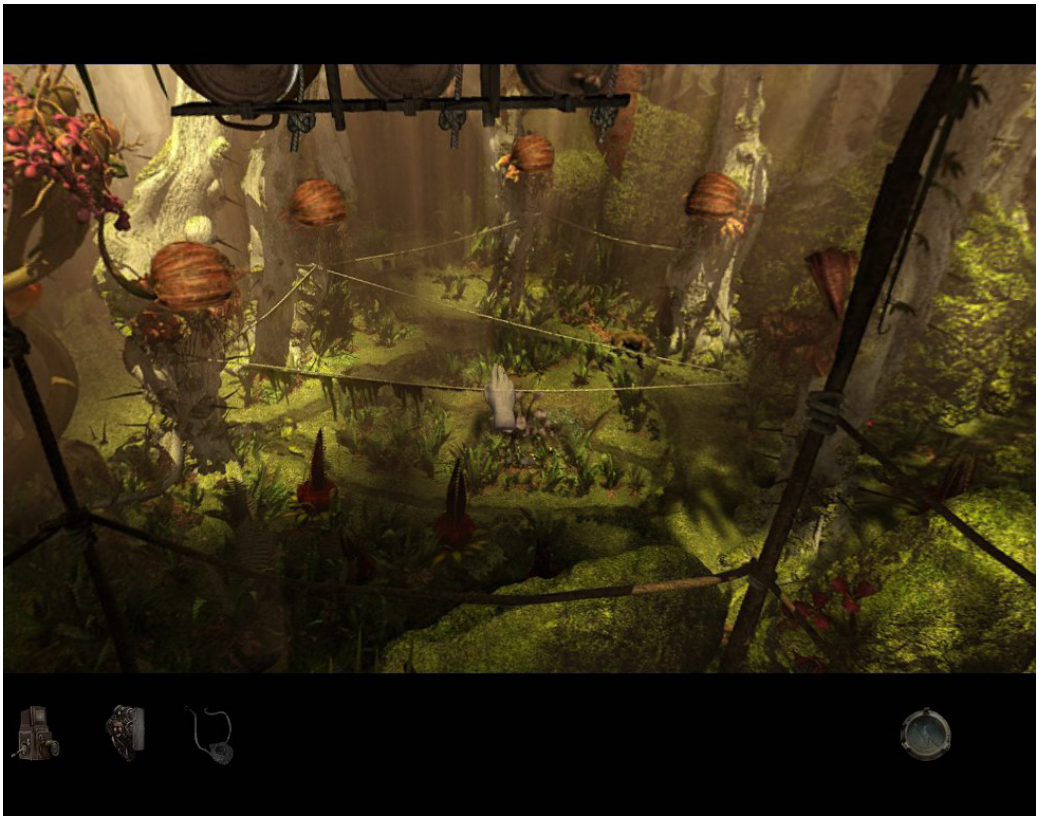

Figure 4 – Screen shot from the game Myst 4 –
Illustrating the visually rich environment the users can explore.

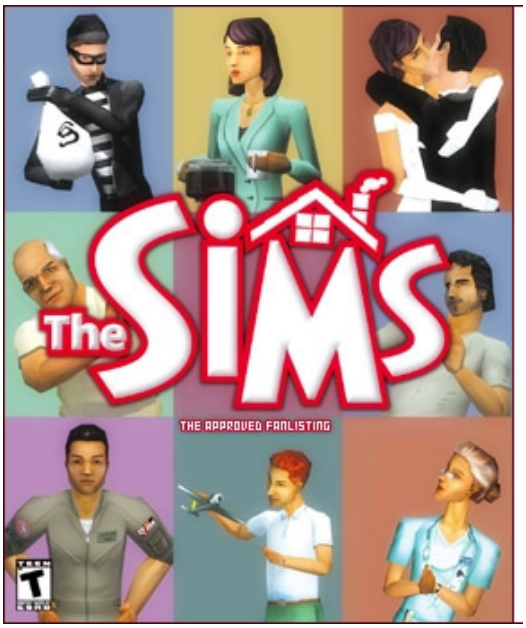

Figure 5 – The Sim Series games allows the users to simulate hospitals, parties, whole cities and more!

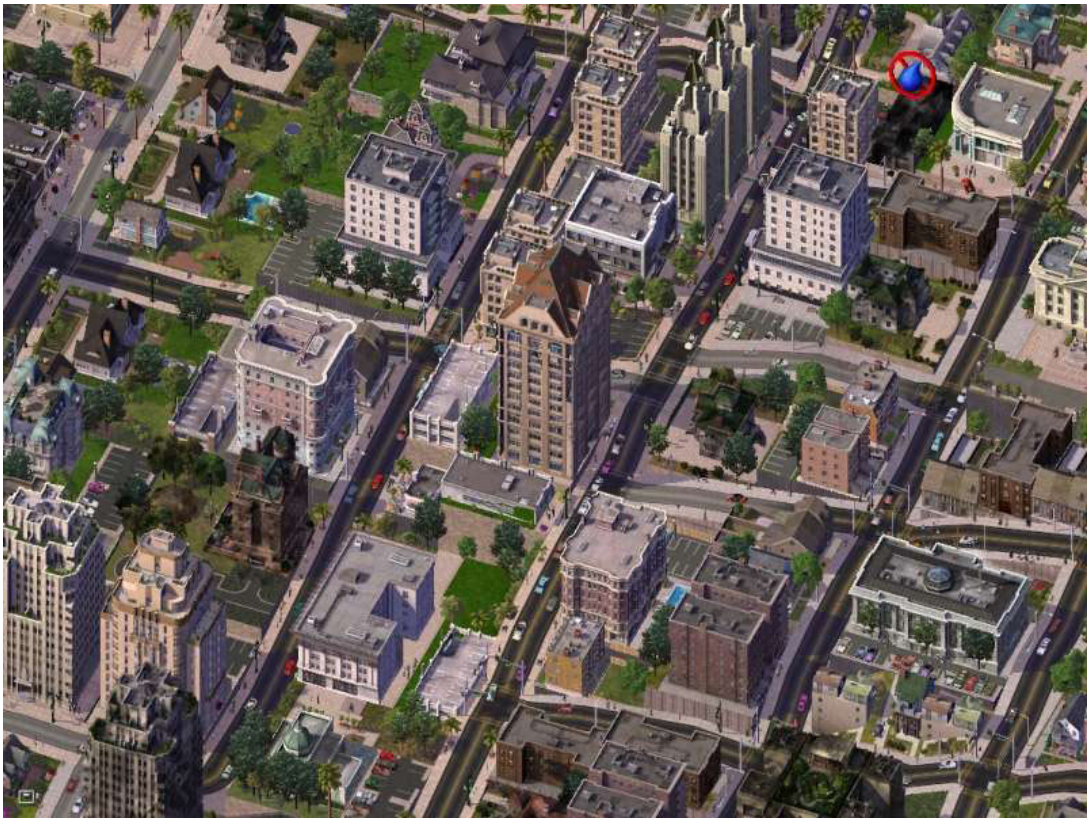

Figure 6 – Screenshot of the game SimCity

Figure 7 – Screenshot of the game Medal of Honour –Front Line.
This level tries to recreate the D-Day landing on the Omaha beach from WW2

ONLINE GAMES & COMMUNITIES

Sherry Turkle writes about how as computer games have become more complex it has lead to a production of fan magazines and online websites dedicated to supplying hints for games[ab]. This has started to create complete online communities that share a common interest in understanding the games and their rules. Sherry Turkle describes this as '*participating in a form of esoteric knowledge*'[ac]**.** The players find pleasure in the fact that they are discovering the rules of the game and can share hints and tips online with other players in a select online group. Esotericism[ad] refers to knowledge that is secret or not generally known, it is knowledge suitable only for the advanced, privileged, or initiated. When Sherry Turkle says that the players are participating in a form of esoteric knowledge, I believe she means the players enjoy knowing that they understand the secrets of the game that not everyone will know and they can discuss them with an inner circle of people on the internet.

The internet is now host to many online communities that deal specifically with computer games but as Internet connection speeds have increased and with more people now opting for Broadband it has allowed games designers to develop games specifically for the internet. New breeds of games are now starting to appear on the Internet that allows players to interact with each other in a multi user environment creating a different type of online community. This specific type of genre of games has been label 'persistent state worlds' or 'multi user dimension' (MUD) or 'massively multiplayer online role-playing games' (MMORPG)[ae]. The players have control over their own identity; they can be male or female or take on a new form such as an animal or alien, it really depends on the game and the amount of options available to the player. Some of these MUD games are based on single player games such as Medal of Honour, which has a facility to connect to the Internet and join a multiplayer version of the game[af]. In this case the player retains the identity of a soldier and the rules of the game are very similar to its single player counter part. The games that I would like to discuss in this study have been created purely for the purpose of a multi-user gaming experience. These games are accessed online and allow you to enter a virtual world in which you can explore freely whilst interacting with other online participant.

An example of one of these games is Project Entropia[ag] that is a massive online multiplayer game (MMORPG) set on a planet called Calypso (Figure 8). It is a virtual universe that has it own economy. Players assume the role of a colonist and work together to build new lives on Calypso. It is completely free to download and there are no subscription fees, instead the real cash economy of Entropia allows the makers of the game to acquire the funds to build and maintain the game. In the game the money is called Project Entropia Dollar (PED) and is link to the real world economy, 10 PED is equal to 1 US dollar. The user can exchange real money for Entropia money to buy virtual houses, clothes or even islands much like buying goods in reality. These items can be sold or traded with other participants in the game. This game is one of the new generations of MMORPG that are trying to create an actual virtual world and society rather than a multiplayer environment such as the Medal of Honour multiplayer game. These new types of MMORPG blur the boundaries even further between the real and the virtual. Are games such as Entropia considered to be an extension of reality?

In an article on Newscientist.com[ah] it mentions a virtual island in Entropia that has been sold for the equivalent of $26,500 to an Entropia player called David Storey (Figure 9). In the article Storey mentions that he sees the purchase as an investment. A press release by MindArk[ai] the makers of Entropia on the sale of the virtual island states that:

> "*The treasure island is a true prize in the MMORPG virtual gaming community as it provides instant real cash revenue from "mining and hunting" rights to the new owner. The winning bidder of the island will obtain all taxation rights on hunting and mining on the island as hundreds of members flock to the new world in search of new game and gold. The island also provides additional revenue potential through the selling of housing lots and market places, some of which have already been sold and claimed due to the high demand*."[aj]

The revenue created by the island from renting and selling housing lots for example can be converted from Entropia money back to US dollars, which provides real potential for moneymaking opportunities. However I find myself asking how reliable and safe it is to invest into virtual goods and property. With the goods being 'virtual' and created by programming code, I wonder how easy it would be to manipulate the code to either destroy other member's property or steal it from them. Also what guarantee do you have that in ten years time the goods you have bought like an island for example will still be there? What if the game is shuts down or the games company goes bust? Identity fraud happens in the real world with credit cards for example, but surly on the Internet where everything is concealed behind a virtual mask – Do you really know to whom you are talking to on the Internet? Someone may claim to be a twenty-year-old white male, but there is no guarantee that they actually are, unless you meet up with them face to face. What if someone claiming to be you uses your Entropia account and steals your virtual but soon to be real money?

Whilst researching into this subject I came across a website called terranova.blog.com and a particular post called 'The solution to Griefing is…The FBI?' by Mike Sellers[ak], which discusses how there have been several attacks on MMORPG systems by griefers. These people deliberately set out to cause harm or destruction in the game. In the post by Mike Sellers he mentions how the code to the physics of a virtual game have been altered by malicious players, which could destroy characters, clothes or any other items in the game. It is almost as if the players are starting to ignore the rules of simulation and are starting to make their own rules on how these simulations should behave. Some of the games companies have tried to combat this by banning players that attempt to cause trouble or controversy in the virtual worlds. One of the high profile cases was Peter Ludlow's expulsion from The Sims Online.[al] Ludlow is a professor of philosophy and linguistics at the University if Michigan. In 'The Sims Online'[am] he went under the name Urizenus and spent much of his time in one the games cities called Alphaville (Figure 10). He investigated life in Alphaville, interviewing many of the scammers, prostitutes, thieves and other shady participants in the game. He then reported his finding on the Alphavilla Herald[an], a blog website that covers many aspects of The Sims Online game. During his time in the game he reported incidents of child cyber-prostitution and money laundering in alphaville. According to the article 'Raking muck in The Sims Online' by F. Manjoo[ao] Peter Ludlow believes his exposures of such activities lead to his expulsion by E.A. games and that E.A.'s reason for banning him was 'clearly censorship'[ap]. The games companies do not want to publicise the existence of such activities as it could have a negative affect on how many people use the game and consequently profits from the game may decrease.

On Aphavilla Herald there is an interview with a child cyber prostitute posted by Urizenus (Peter Ludlow) that gives an insight into the kind of activity that takes place in The Sims Online[aq]. It mentions how cyber brothels have been created that lure in under aged participants to become cyber prostitutes and talk 'dirty' to 'customers', earning virtual money for each session (Figure 11). Evangeline, the person being interviewed also describes her current policy of humiliating 'newbie' Sims and racial taunts toward dark-skinned Sim characters for example calling them 'monkeys'. But is this considered a crime? I would argue that cyber prostitution is a crime because it is exploiting young children for sexual gratification; however you could argue that these children are in no immediate danger and that they are just words on a screen. F. Manjoo comments in his article that:

> "*The laws in this area are grey; none of the academics who study these worlds could say, definitively, whether the game company or the characters were involved in anything illegal or even really dangerous. Kids on AOL are free to - and often do- chat dirty all the time*."[ar]

But what impact it has on a young child at an impressionable age is debatable. Will they be mentally scar from the experience is it therefore a form of child abuse? The racial taunting that was pointed out in Ludlow's interview makes me wonder what kinds of messages are being imposed on young children in these simulation games. When you become a simulation participant in games such as The Sims Online your identity in the real world remains anonymous. The fact that you can hide you gender, age and race mean that you can have a very different relationship with people in the Sims than in the real world. In a sense you are free to say and do things that you might not in the real world because you are anonymous, hidden behind a false representation of yourself.

I think the real concerns are for the future when games such as Entropia that deal with real money might start to share similar problems found in The Sims Online like cyber prostitution. I think the responsibility has to be passed to the makers of these games to enforce some kind of protection for the participants or some form of governing authority in the game by the Sim community.

Figure 8 – Screen shots from inside the world of Entropia
Each of the humanoid characters is a real participant.

Figure 9 – A screenshot of 'Treasure Island'
The virtual island that was sold for $26,500

Figure 10 – A screenshot of inside the game 'The Sims Online'

Figure 11 – An example of the setting for a Sim brothel in Alphaville

CHAPTER 2

In this chapter I would like to explore the emerging simulations of artificial life forms and how we view them. I will also discuss the game Creatures and how they have approached making a game based on artificial life.

SIMULATIONS OF LIFE

As living breathing human being we have often contemplated why we exist, how we exist and for how long we shall be alive. The biggest question we ask ourselves is -what is life? The definition of life is somewhat varied, but conventionally it is consider that in order for something to be alive it will have certain attributes such as organization, metabolism, growth, adaptation, response to stimuli, and reproduction[as]. So to define something as being alive it must be self-organizing and self-reproducing. The Cell theory[at], which is the foundation of biology states that all living things are made of cells and that they are the basic units of life. Cells contain hereditary information, which is passed from one cell to another by cell division. So it would seem that we have established some way to classify what is or isn't alive.

However, as technology has developed and simulation has become more prominent in our lives we have began to question what we consider to be alive. If I refer back to the Medal of Honour war game I discussed earlier in the chapter, you take on the role of a solder in a virtual battlefield. You become an *avatar,* a term derived from the Sanskrit word *avatāra,* which means to take on a different form. In Medal of Honour the soldier is a representation of you, that allows you to transcend from the real world into the virtual world. In this case you are in a simulated World War 2 battle fighting virtual Nazi enemies. The enemies will die when you shoot them, and they also appear to get injured. They talking amongst each other and activly seeking you out when you are hiding. They even have the intelligence to throw back the granade you just threw at them. It is as if they are alive. I know it is a series of inter-linking preprogrammed responses made by the games designer, but I still find myself thinking they could be alive. I think the reason why I began to see them as alive is because the enemy soliders in Medal of Honor posses some of the attributes I descibed earlier to define life. The main two attributes being their ability to adapt and respond to stimuli, for example them throwing back your granade. By adding life-like attributes to the enemy soldiers it makes the player believe that the simuation is real or at least close to the real thing because the player is associating real life like behavour to the enemy soilders. By doing this I think it helps make the game more believable and playable whilst helping to draw you into the gameplay to enter the 'semiautomatic state[au]' that Sherry Turkle describes in her text.

Other digital simulations such as virtual pets further challenge our views of what we consider to be alive. Virtual pets try to mimmic life, they play on our assumptions of what we consider to be alive. Tamagotchi[av] is one of the most well known virtual pet games that comes in the form of a keyring (Figure 12). They require feeding and playing with to keep the Tamagotchi happy. Depending on how much you play and

feed your Tamagotchi will determine how it will develop as it goes through its stages of life. If it is left for too long it will eventually die. The newer versions of the Tamagotchi pets can even mate with each other by linking your keyring to another Tamagotchi key ring. On the internet there are now websites dedicated to showing off your Tamagotchi or mourning them, in a strange virtual Tamagotchi grave yard[aw]. But why do people find virtual pets so addictive? Why do they treat them like real pets? I think the main difference between virtual pet games and other games that are based more on winning or obtaining a goal is that people form an attachment to their virtual pet. Virtual pet game such as Tamagotchi depend on the user attending to the pets needs, like real life pets there is a level of responsibility over the pets life. If the owner doesn't maintain their pet properly then it will die. The satifiaction of raising a happy and more visually appealing Tamagotchi character helps to add to the feeling that you have helped nurture a real pet.

Virtual pets may offer children a good substitution to real life pets as they are at some level teaching children the responsibity of caring for a pet. But I do not think they really teach children the importance of life. Even though artificial life such as the Tamagotchi pets act in a similar manner to a real pet, as in they need feeding and emotion support (playing with the Tamagotchi) or they will become sad and die if neglected. They are still just artificial, if the battery runs out then Tamagotchi will not die, instead the program will stop working. I think the main flaw with virtual pets is that no matter how much we believe them to be real or alive, we still see them as computer programs so therefore a death of a virtual pet is not the same as the death of a real life pet. When I owned a Tamagotchi if it developed into a subborn ugly pet that constantly demanded attention unlike its happy easy going alternative I didn't have to live with it I could just pull the tab on the back of the keyring and reset the tamagotchi to it's egg state so I could start again. In a sense this would be like killing your real life pet because you didn't like it. In reality killing your pet would be unacceptable but in the virtual these rules seem not to apply.

Apart from the Tamagotchi pets, there are other online incarnation such as NeoPet[ax] which is similar to Tamagotchi pets except NeoPets offers the user an increased level of interaction. The pets can be entered into games and the user can buy food and other items for their pets (Figure 13). In an article on News.com called 'Who let the NeoPets out?'[ay] it mentions that the game is targeted at the under 20's and has attracted over 26 million pet owns with the figures still rising. This show the true potential for the virtual pet market. Interestingly the article also mentions a Neopet owner called Colliedragon who say that Neopet provides her with an escape, however "*she would choose her own live collie over her neopet any day of the week*"[az]. "*Neopets can talk and are more, humanlike than real pets, but NeoPets can't love you*"[ba] she said. I think Colliedragon has a point, that in order for a virtual pet to be considered alive it needs to display the one human emotion that is hard to reproduce - love.

Virtual pets offer some form of simulation of life, however virtual pets like Neopets or Tamagotchi still have their contraints, they do not evolve into unique individual creatures with their own unique genetic make up. They do not reproduce on their own an they have a limited display of emotions. If I refer back to what defines something as being alive - organization, metabolism, growth, adaptation, response to stimuli, and reproduction, then we can see that these types of virtual pets do not fulfil all the criteria. But there is one particular virtual pet that does try to fulfil all these attributes called Creatures. In the next section I will discuss how Creature has tried to create life, not simulate life.

Figure 12 – An example of a Tamagotchi key ring.

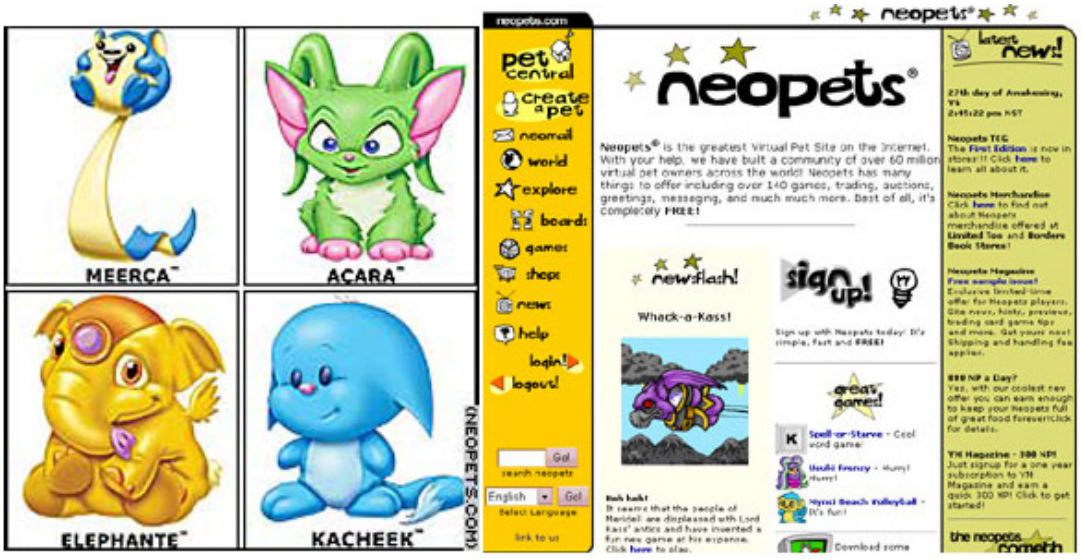

Figure 13 – Screenshot of the Neopets website and a selection pets from the large collection of virtual pets available

CREATURES

I have chosen to look at a series of games called Creatures, which was originally created by Steve Grand and is now under the company name Gameware Development[bb].

The Creature's series[bc] models real biological systems on the computer, each creature comes complete with their own biochemistry, brains, digital DNA, and an immersing environment in which to live. The things they do whilst in the world have not been specifically programmed. The user guides them through the world helping them to learn from their mistakes. When the creatures reach adulthood they can mate and produce offspring, which have their own unique genetic makeup. Creatures is one of the first games to implement A-life coding, which means the characters can evolve differently each time. They live in a world called Albia, the users breed creatures called Norns that are generally friendly and sociable. They appear to react like living things. There are no real goals for the game, only that the user raises them and bonds with them as if they were real pets (Figure 14).

I began research into what made these A-life creatures seem so real. In order to create a simulated environment that is rich and believable there are a few elements that are crucial. The first being emotions, which helps define the difference between robotic behaviour and life like behaviour. Emotions are an important part of our decision making process, often decisions are shaped from our personality and our environment. By incorporating human or animal like emotions into the Norns they make the characters seem more believable because we can relate our own emotions to the creatures. But the Norns also seem to develop different personalities based on their experiences and their environment, which further adds to their believability. But how is this possible?

In order to simulate life on computers that ultimately have to make there own decisions, program designers have to look to nature to understand how to build a system that will mimic biological life like features. Creatures are a good example how this has been implemented. Steve Grand discusses the decision-making system used by the Creatures series in his online article '*what is Creature Labs' cyberLife?'*[bd] *'If we want a system that behaves like small creatures, then we build a small creature'*[be] what Steve Grand mean by this is that they study biology for answers. At the beginning of this chapter I referred to the Cell Theory, which is what Steve Grand has tried to base the Creatures A-life code around. Creature's games use a 'bottom up' system[bf], which basically works in a principle to the Cell Theory. Small programs work together in order to simulate life. For example in the Creatures game, there might be a behaviour that determines how hungry the creature is based on another behaviour that works out how much energy the creature has. By using the bottom up system it makes the process of programming complex interactions or problems manageable. It would be very difficult to program every decision that the creature might have, imagine the amount of decisions you make on a daily basis and then try to think about the many other alternative decisions you may of had. Steve grand explains this by giving an example of a decision making tree[bg], for every decision, there could be two other alternative decisions; eventually it would expand into billions of decisions. The solution to this problem is not to try to design a new system to create artificial life but instead look at an

existing system – nature. All living thing are made of cells, each one of these cells has a purpose, although separately they do not function or have minimum functionality, on a whole they work together to make life. If you replace the cells with individual programs then it gives you a basic idea on how the Creatures program works.

Steve Grand points out in his article that "*through CyberLife we are putting the soul back into lifeless machines – not the souls of slaves, but willing spirits, who actually enjoy the tasks they are set and reward themselves for being successful*"[bh]. Gameware Development is striving to make machines that do not relay on human supervision. Instead they are trying to embed living things into machines that can think and function by themselves. Although Creatures has been developed primarily as a game the technology is intriguing and offer scope for developing artificially intelligent life forms. Their most recent Creatures release has further pushed the boundaries of A-life. Creature Docking Station (CDS)[bi] is an online version of the Creatures game where the users can nurture a creature in their own world, then teleport them to another users world where they can continue to grow and reproduce with other users creatures (Figure 15). Unlike the previous Creature games, the CDS is free to download and use, leaving it open to a wider audience of users. CDS allows users to experiment with different breeds of Norns and to create their own breeds. The CDS website can be used to not only to find out information on the game but also to post to other CDS users to see if they have a particular breed of Norns that could potentially breed with your own Norns to create a new species. They even carry diseases and genetic personality traits. In this respect Gameware Development have come some steps closer to creating cyber life on the net that can breed and travel. However the creatures are still confined to the CDS program, when or if Gameware creates an artificial life form that can exist on the Internet that doesn't need a specific program to 'contain' them, maybe they will have achieved their goal of creating machines with souls?

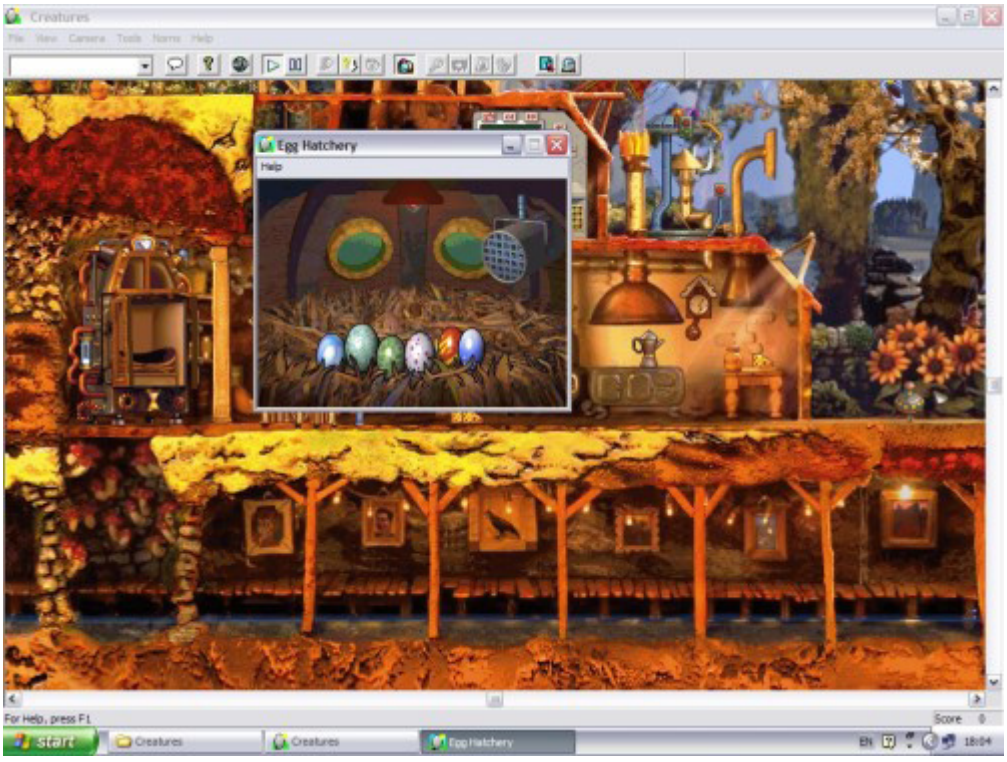

Figure 14 – Screenshot of the game Creatures

Figure 15 – The Creature Docking Station
The creature is just about to warp to another users docking station

CONCLUSION

Over the past 10 years the Internet has changed from an information research tool to a more sophisticated platform for human interaction. As we have become accustomed to simulations our perceptions on reality have somewhat changed. The Internet has opened up a new world that has allowed us to reassess our relationships with people, our own identities and moral standing. Virtual worlds have offered us a chance to study social interactions that might not have been possible in the real world. Psychologists such as Sherry Turkle can study communities in games such as The Sims Online to discover how a community is formed, if racial divide will occur, sexism or even whether an attractive avatar will integrate better into society. Peter Ludlow has already highlighted some of the darker sides to the virtual existence such as cyber brothels.
But will the new generation of MMORPG such as Entropia that have a real economy allow for darker and more sinister interactions? Will prostitution be common practise? Will these games be a new platform for gambling? The future of these games seems a troubled one. Even if the games companies can find a way to control under age cyber prostitution or indeed just under aged participants. Will they be faced with a much larger problem of gaming addiction? From my research it seems that these online games require the participant to spend long periods of time in front of their computer, away from real human contact. They can even forgo a real pet and investing in a virtual pet that doesn't require a walk around the park, or at least not a real park. In fact with online shopping and home delivery for groceries, is there really any reason at all to leave the virtual?
I find it strange that in one sense these games are helping us to connect with people around the world that we might never have known, but they are also cutting us off from the real world. It seems the closer we get to the virtual being real, the more distant the real becomes.

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c ibid, p66
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f ibid, p66
g ibid, p66
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i TURKLE, S. op. cit p66
j ibid, p66
k ELECTRONIC ARTS, Need For Speed –Most Wanted, 2005
l See NATIONAL STATISTICS, (No Date), 'A summary of changes over time –Consumer durables', [on-line]. Available from: http://www.statistics.gov.uk/CCI/nugget.asp?ID=823&Pos=3&ColRank=2&Rank=320 [accessed on 15th January 2006] for information on statistics of computers and Internet use in the home.

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n See ELECTRONIC ARTS (2005), 'Maxis' Available from: http://www.maxis.com [access 10th February 2006] for information on all the Sim series games.
o TURKLE, S. op. cit pp 67-70
p ibid, p70
q ibid, pp 66-73
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s ibid, pp 66-73
t See ELECTRONIC ARTS (2006), 'SimCity 4'[on-line] Available from: http://simcity.ea.com/ [accessed 10th February 2006] for a more in depth description on how the game works, screen shots and features.
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