Ethical Concerns Regarding Addiction in Video Games

Nathan Wilson
z3287546

Video game addiction is an increasingly prevalent issue in recent years. In severe cases the negative effects of video game addiction can rival other problems such as gambling addiction or substance abuse, and has even been the indirect cause of deaths. At a review in 2007, the American Psychiatric Society (APA) rejected inclusion of video game addiction as a psychological disorder, but many scholars oppose this decision and suggest that "Symptoms of time usage and social dysfunction/disruption appear in patterns similar to that of other addictive disorders."[1][2] The next publication of the *Diagnostic and Statistical Manual of Mental Disorders* by the APA will be in 2013, at which time video game addiction may be included as a formal diagnosis if supported by scientific review.[3] A recent neurobiological study in 2009 shows that when a video game addict feels the urge to play, there is increased activity in the brain in patterns similar to "the cue-induced craving in substance dependence,"[4] suggesting that substance dependencies and video game addictions share a common neurobiological mechanism.

In this report, firstly I will aim to study and describe some of the techniques that are currently used by video game software developers in order to encourage addiction to their games. I will then examine some cases of video game addiction, and provide some examples of the issues that can be caused by video game addiction. Finally I will reflect upon the severity of video game addiction as an issue in today's society, and the ethical responsibilities that should be placed upon software developers involved in making video games.

One of the fundamental reasons people play videogames is the feeling of reward that can be achieved at a relatively low effort cost. The brain releases a chemical called dopamine whenever we encounter something pleasurable, such as when we find money in the bank on payday, or when we go up a 'level' in a video game.[5] Progressing in a video game allows us to experience this pleasure with low physical effort expenditure, and by performing tasks that are often enjoyable in themselves. The items that can be acquired in a video game are essentially worthless, just bytes of code. However, it is actually quite common for people to spend time and money on abstract concepts in real life. A diamond ring is arguably worthless, consisting of a rock and some metal with no practical function. The very act of placing value on something is enough to make it valuable, and this idea is one which the developers of many video games have capitalised on.[6]

A common feature of video games that is used to encourage addiction is that of a system of 'achievements'. Achievements are like badges that are awarded to a player, and they are often publicly available for other players to view. They stimulate the part of the brain which feels reward from collecting - a phenomenon which can be seen in real life in hobbies such as stamp collecting, or even a womans wardrobe full of shoes.[7] They also provide a further motivation beyond just collecting - that of competition. The ability to feel superior to another player is a very powerful and very fundamental human motivation - everyone wants to be the best. Having a unique or difficult achievement listed against a players name is a status symbol, a sign that this player excels at some aspect of the game. Furthermore, providing a large variety of these achievements allows players to specialise - a player can choose a small handful to complete, and distinguish themselves that way.[7] This is key to getting players addicted to a game because it provides them a reason to keep playing, long after the core content of the game has been completed.

We discussed above the feelings of reward from gaining new items or ‘loot’. The timing of new loot can be manipulated to maximise the rush of dopamine, in much the same way as gambling does. Researchers have shown that unpredicted rewards fire off a much larger rush of dopamine.[8] This is because dopamine receptors are a system the brain uses to teach us behaviours that help us get good things. When we get a reward that we didn’t predict, it means there was an error in our internal prediction system, and so we get a larger amount of dopamine to help highlight and correct the errors. By making the quality and timing of the rewards given out in a game random, game developers use the above principle to get fewer, but much larger and more euphoric doses of dopamine, so that players continue to chase the high.[9]

A Behavioural Psychologist called B.F. Skinner developed an experiment called a ‘Skinner Box’ which he used to demonstrate a principle known as ‘Operant Conditioning’.[10] A rat is placed in a box, with a lever on one wall that can be pressed to dispense a food pellet. Skinner found that varying the frequency and timing of the conditioning will vary the behaviour of the rat. For example, by giving it a pellet every time, the rat learns that it can expect a consistent reward for pushing the lever. This is known as Continuous Reinforcement, and results in the rat pushing the lever when it gets hungry. A Fixed Ratio schedule is one where the rat is given food every X presses. This will result in the rats behaviour being modified depending on hunger. If X is 20, the rat will not bother pushing the lever until it is so hungry that it is willing to stand there and push the lever 20 times in one sitting. The optimal schedule that Skinner arrived at was a Random Ratio schedule, one in which the number of presses required changes every time. The rat knows that it will get a pellet by pressing the button, but not how many times are required. This results in the rat continually pressing the button non stop, and has been compared to the behaviour of gamblers. In game design, when the timing of the rewards is predictable, then the observed behaviour is that players will play faster and harder right before a reward, but then with lower intensity just afterward. If the gap between rewards is too large, then players might stop playing altogether.[11] Hence developers will make the reward schedule unpredictable, to result in a constant and even level of playing.

Certain games implement an idea called ‘Layered Reward Cycles’. They will include several different effort/reward systems in a single game. Take for example the popular game ‘World of Warcraft’ (WoW). In WoW, there might be a two hour gap between each ‘skill’ level your character gains. If a player does not have two hours more to play, they are likely to just stop playing for the day. This is the ‘Fixed Ratio’ schedule mentioned above. However adding several different reward systems can mitigate this. WoW also has a ‘crafting’ system, as well as a ‘reputation’ system, each with their own set of levels. While there might be two hours till the next ‘skill’ level, the next ‘crafting’ level could be only 30 minutes away. And then after that, another 30 minutes to gain a ‘reputation’ level. By making different effort/reward systems feed into each other, they can create the feeling of constant, consistent progress without the player ever feeling like they are far away from the next reward. This is more effective than just having a single system in 30 minute chunks because it makes the player feel like they are already ¾ of the way to the next reward, and so they have a heavier investment.[12]

Another technique is to give the players large rewards quickly when they first start playing the game, and gradually lengthen the effort and time required between successive rewards. This gets the player hooked on the feeling of reward very early in the game, until eventually they have to play for 3 or 4 hours just to get the ‘high’ they got hooked on when they first begun playing.[12]

Games can often be broken into ‘chunks’ in order to achieve the desired behaviour from your game players. Games like Mario or Civilisation consist of lots of small, clearly defined sections of only a few minutes which encourage a player to take ‘just one more turn’ before they stop playing for the day. Their small size often results in longer sessions than intended because it is so easy to

stop after any one section. Conversely, by breaking the content into very large chunks, and then penalising the player for stopping in the middle of one, you can influence the minimum time played. If a ‘dungeon’ in WoW takes three hours to get through, and you have to start again from the beginning if you stop playing, there is pressure on the player to play for at least 3 hours or else feel like they have not made any progress for the day.[13]

Finally, a common strategy of ‘social’ games is to incorporate an ‘avoidance’ contingency. B.F. Skinner also illustrated this principle in his Skinner Box experiment. A small electric shock is sent through the cage every now and then. However by pressing the button, the rat can delay it for at least the next 30 seconds. This results in the rat pressing the button slowly and continuously, non stop.[14] In games such as Farmville, a player’s crops can wither and die over time. This encourages players to play every single day, otherwise the crops they have put time and effort into tending may be gone by the time they come back. This is also known as the ‘Sunk Cost Fallacy’, when you place a higher value on something because you have already ‘sunk’ time, effort or money into it. Once you can ensure someone is going to play at least once a day, you can use other methods to make sure the play sessions are of the desired length.[15]

In addition to the techniques that are used by game developers, it is important to consider the negative effects that using such techniques can have, and so I present a selection of cases from the last eight years which illustrate some of the different ways in which video game addiction can manifest.

A young chinese boy committed suicide in 2005 after suffering from severe video game addiction. Thirteen year old Xiao Yi threw himself from a 24 storey apartment building after leaving a note - written through the eyes of his virtual character - stating that he hoped to meet his cyber friends in the afterlife. He had displayed signs of a growing addiction over the past few years, and at one point was found by his parents in an internet cafe, starving after two days and nights playing online role-playing games.[16]

A 28 year old mother in Las Cruces, New Mexico was sentenced to 25 years in prison for murder last year for the death of her daughter. The three year old girl died of malnutrition and dehydration in 2006 after being given no food or water and surviving on only cat food until her death. The home computer showed ‘continuous activity’ during the last days of the girls life as the mother played World of Warcraft and chatted with friends online.[17]

Alexandra Tobias from Jacksonville, Florida, has pleaded guilty earlier this year to killing her 3 month old son. The incident, which occurred in late 2010, came about when the baby’s crying interrupted her game of Farmville on Facebook.[18]

In 2011, a young mother in Uniontown, Pennsylvania had all 6 of her children taken into custody by youth services after they were found living in filth and animal waste. Her addiction to online games caused her to neglect her children, all under the age of 11, and leave them with no food and dirty mattresses for beds. Police have filed felony child endangerment charges.[19]

Just over two months ago, in July 2012, a teenager in Taiwan died after playing the newly released Diablo 3 for over 40 hours. He booked a private room at an internet cafe in mid July and played continuously for almost 2 days without eating. He was discovered by a cafe attendant and the death was attributed to a blood clot caused by sitting for a prolonged period of time.[20][21]

While the above cases are all extreme examples of the adverse effects of video game addiction, and are quite rare, video game addiction is extremely widespread in milder forms. It is very common

for people to skip a meal or go without sleep to play video games, which can lower the bodies immune system. It can also disrupt important aspects of life such as social interaction and areas such as work or school.[22]

As illustrated by all the above information, video game addiction is a serious issue, and games are not addictive by accident. The primary ethical issue we have to consider is: how much responsibility do the developers of video games have when developing a game with addictive aspects? There are two common viewpoints.

The first viewpoint is one held primarily by the entities responsible for making these games. They posit that if someone gets addicted to a video game, it is their own fault. There is nothing forcing them to play except their own lack of willpower. As an adult, they have their own responsibility to play games in moderation, so the entity or developer that creates the game is not at fault. They also argue that it is possible that video game addiction in itself is not a problem, but merely a symptom of other problems in an individuals life. In addition, given the millions of people that play games, only a small minority appear to experience any associated problems.[23]

The second viewpoint is that these companies are exploiting their players. Players do not generally want to perform a boring or repetitive task. However as Jonathan Blow states, game developers “override that by plugging into their pleasure centres”, convincing them to waste their time. Blow is a prominent ‘indie’ game developer and believes that developers should design innovative, ethical and personal art rather than exploiting their players for money.[24] In counterpoint to the above opinion, they also note that only a small percentage of alcohol drinkers and gamblers suffer from addiction, yet they have been judged severe enough to be classified as a disorder. It is difficult to judge what is and isn’t a case of addiction, and although there are relatively few ‘severe’ cases, it is possible that mild video game addiction is one of the causes of many cases of tenosynovitis and obesity.[23]

It is clear that the effects of video game addiction are important to consider when developing a game. There is a clear distinction between games that people play because they are fun, and games that are developed with addictive techniques in mind - the first section of this essay almost reads as a checklist of features in WoW. Unfortunately, the ethics of this issue are in direct conflict to the potential profits that can be made from a video game. When a large corporation is developing a video game, they will often try to milk as much money from a game as possible, and for a subscription based game, this essentially boils down to ‘make them play as long as possible’. We can only hope that as video game design progresses and cases of video game addiction become more widespread and more severe, more responsibility will be placed upon game developers to do the right thing by their players, and make games that are fun without relying on addictive techniques.

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There was no referencing guideline for this assignment, so I have used 'wikipedia style' annotations in the text, a simplistic 'Author, Title, Date, URL' format for online references and 'Author, Publication, Title, Date' for journal articles that are not available online. I have provided a link to an abstract for these journal articles wherever possible.

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