

# **Why We Play the Games People Play: Cultural and Psychological Motivation in Electronic Game Players**

Major Research Topic

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I declare that this is my own work and that it has not been submitted in whole or in part for any other unit.

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Every game developer aims to create a game wherein the player feels motivated firstly to play, and then to continue playing. But what draws a player to play through a game? Is it the graphics/aesthetics? Storyline? The User-Interface? Is it something as superficial as any of those, or can all of them work to create and fulfil a set of needs that must ultimately be met in order to make the player feel they have had a positive game experience? Obviously, all players are individuals and, being individuals, have different interests and prefer different styles of gameplay. But we are all humans, and psychologists, philosophers, and cultural theorists have all played on the assumption that there must be some thread of similarity between us all; we all share a basic drive or programming that allows us all to interact and understand each other. Surely, then, there must be a set of desires, needs, or a drive that works to make some games more enjoyable than others; there must be something more than chance which causes some games to be vastly more popular than others. What are some of the possible Needs that must be met in order to motivate a player to continue playing a game? Where can we look to find these needs? There have been studies within the game developers field which begin to note what appears to be present in the most motivating and engaging of games, but what about cultural theories and psychological studies? For this essay, I have decided to review the game motivation study by Rigby and Ryan, as well as one by David Ghozland; I have also investigated Richard Bartle's player Types, Abraham Maslow's Hierarchy of Needs, and Alain de Botton's causes of Status Anxiety.

Abraham Maslow was a New-York born psychologist whose theories about a Hierarchy of Needs, first published in 1954, have had a huge impact on future theories of motivation. Maslow's theorised that people had certain core behavioural "Needs" which required attention and fulfilment in order to make a person happy. From the bottom of the hierarchy, these needs were: Biological and Physiological Needs; Safety Needs; Belongingness and Love Needs; Esteem Needs; and the need for Self-Actualisation. These Needs, according to Maslow, were each dependent on the fulfilment of the needs below them in the hierarchy. In order for a need to be considered, each need below it must be fulfilled. However, this original hierarchy was revised twice: once in the 1970's, and once in the 1990's. The 1970's version includes Cognitive needs and Aesthetic needs placed between Esteem and Self-actualisation; the 1990's revision includes these, as well as being crowned by Transcendence needs (Chapman). The Transcendence need goes against the model

proposed by Maslow because it does not necessarily require the needs below it to be met, and can, in fact, lead to the fulfilment of needs found lower on the hierarchy (Chapman). This reveals that Maslow's theory that needs must be addressed up the hierarchy is not strictly the case, and possibly the most pressing need is addressed above all else.

How does Maslow's Hierarchy of Needs relate to motivation of players within games? Some of the Needs appear to have little or no relevance to a virtual life. Indeed, the Biological and Physiological Needs cannot be fulfilled by playing a game, but instead, they come as a prerequisite to gameplay, at least for the majority of gamers. While it is documented that players have continued to play for up to eighty-six hours before dying, it is also reported that while they do not necessarily eat or sleep, they still need to stop to use the toilet, and the death itself was often due to many ours of near-cessless stress (Farrell, nzherald). This type of extreme and fatal gameplay should not be regarded as a rule, and should be attributed to addictive personalities. Or perhaps the men were so busy trying to fulfil one of the other needs (safety) that they temporarily ignored their most basic need?

The next seven needs of the 1990's model of Maslow's Needs can be more easily interpreted as relating to or involving games. Safety needs are the borderline: if a player feels totally without safety, they will not distract themselves from the current situation by playing a game. However, if it is a more latent form of insecurity, such as stress or feeling overwhelmed with life, a player may venture into a virtual world where they know they are playing. At once, this can trivialise the player's real-life stresses, as well as allowing an outlet and a sense of control of a small environment. The remaining six Needs, while still useful if regarded individually, can be grouped together as aspects which, when unfulfilled, can cause what Alain de Botton terms "*Status Anxiety*."

*"Once food and shelter have been secured, the predominant impulse behind our desire to succeed in the social hierarchy may lie not so much with the goods we can accrue or the power we can wield, as with the amount of love we stand to receive as a consequence of high status,"* (de Botton, 11).

Indeed, the next two sets of needs on Maslow's original hierarchy (unchanged in the two revisions) is the need for Belongingness and Love, followed by Esteem needs (the need for "achievement, status, responsibility, and reputation") (Chapman). De Botton states that we are highly impressionable and are hugely affected by the way

other people see us, and that “it typically falls to the attitude of society to settle the question of our significance” (de Botton, 16). However, we do not listen to everyone in order to gauge our worth: we turn to fickle “snobs” for their input. If we are liked by those who do not endow their adoration freely, then we believe that this adoration must be more valuable and therefore we have greater worth. The truth is, snobs are so fearful of being judged themselves that they turn that judgement outwards (not dissimilar to Freudian Projection), “Belittling others is no pastime for those convinced of their own standing. [...] It takes a punishing impression of our own inferiority to leave others feeling that they aren't good enough for us” (26). The inferiority-driven, conditional judgement of snobs can continue to incorporate not only behaviour, but items and aesthetics. What we actually like is not important: what is shown to be valuable according to the society and whether we own those things (and how many) is what can reflect back to give us worth. “It is the legacy of those who have felt pressured by the disdain of others to add an extraordinary amount to their bare shelves in order to signal that they too may lay a claim to love” (de Botton, 28). Maslow's original hierarchy did not include “Aesthetic needs.” The needs for “beauty, balance, form,” are more likely to be considered important in themselves as they are symptomatic of the desire to be loved based on what society informs the individual to value.

How should one be granted these symbols and symptoms of their lovability? Meritocracy, a term coined by Michael Dunlop Young in his 1958 publication *The Rise of the Meritocracy*, is used to describe a society based on basing an individual's work and worth on the judgement of the society in which they live. Long gone are the times when position and prestige were bestowed based on birth; in a Meritocratic society, each individual is considered an equal, a tabula rasa of sorts, and granted merit for their development and utilisation of skills. Once, this was a mercy bestowed on only the most virtuous original “snobs” (“s.nob” meaning sans-nobility: without nobility); while now it is expected (de Botton, 21, 54).

Expectation is another of Alain de Botton's causes of Status Anxiety. De Botton says that many people are presented with the belief that they have the potential to advance if they work hard. Their advancement will therefore win them the potential to collect money or items ascribed with societal importance with greater ease, which then allow them to gain higher status and therefore love. However, there is no real way to ascertain whether an individual is “rich” or not: it is only through

comparison that this can be found. De Botton states that people tend to only compare themselves to those whom they consider to be their equals (45). They are content if their equals are truly equal or equivalent to them; if there is an inequality, those who are not privileged, “are liable to feel sudden unease and fall into dissatisfaction and envy” (46). However, if someone knows that their peer's skill is greater than their own, they will feel no envy. Therefore, the more potential an individual believes they have to be greater than their peers, the greater the potential for motivation to remain at a similar level or greater. How does this tie in with Motivation for game players? Players need to feel that they are capable of succeeding against other players or the game: they have struggled, having always had the potential to win, but never the guarantee. Players also like to see themselves ranked towards the top on a leader board. They like to be able to play against each other and prove their superior skill and talent. All of these relate to expectation-- the capacity for success, and the imagined promise of it. De Botton cites William James, who created an equation where Self-Esteem equals Success over Pretensions (55). De Botton explains: “We are not always humiliated by failing at things; we are humiliated only if we first invest our pride and sense of worth in a given achievement, and then do not reach it” (55).

Dependence, the last of de Botton's causes of Status Anxiety, can be directly applied to game players. Dependence refers to the unease caused when an individual or group's success is dependent on anything but skill. A player does not want to feel as though they are dependent on luck, an inherent talent or advantage (which is why there is more than one game genre), or team which they are forced to play with. Players enjoy a challenge, but they enjoy a fair challenge which gives them the opportunity to succeed. How does a designer provide this in an online world, complete with millions of players at different stages, with different skill level, interests and talents?

Richard Bartle summarised a long-running debate he had with MUD2 players (players of relatively early online games) between November 1989 and May 1990, developing a system of categorising players based on their core gameplay style (Bartle, 130, 165). His original findings were published under the title, *Hearts, Clubs, Diamonds, Spades: Players who Suit MUDs*. Bartle identified four primary types of players (Achievers, Explorers, Killers and Socialisers), and over the next thirteen years, further developed his thoughts to split into eight types, rationalising them into the eight points of a cube, with three sets of axes running through the centre. These

axes each described an aspect of interest, and when combined, were able to explain the behavioural pattern of each type of player. The first set of axes is Player/World, where the player will choose to be interested more in either the game world or other players; the second is Action/Interaction, where the player will be more interested in either acting on or interacting with their focus; the third is Implicit/Explicit, which defines whether the player is aware of their actions (165-170). Bartle states that depending on the combination of the axes, the player will be interested in different activities, and thus what should be used to motivate will vary. Additionally, players may progress through these types, though Bartle tracked this also and was able to document the most common paths of development or progression (170-3). Surely there are some aspects of gameplay, some player needs, that are equally appealing to all types of players?

In their article, *Rethinking Carrots: A New Method For Measuring What Players Find Most Rewarding and Motivating About Your Game*, published in January of this year, Rigby and Ryan from Immersyve set out to prove the value of their gameplay motivation model, the “Player Experience of Need Satisfaction” model, aka “PENS.” Games are often ranked on outcomes such as graphics, controls, and the intangible concept of Fun; Rigby and Ryan point out that measuring such things ultimately fail as a long-term predictor of a game’s success. This is why they propose the “PENS” model, which looks at the following psychological needs: competence, which is the player’s sense of being able to overcome challenges presented by the game; autonomy, which is the player’s perceived in-game free will; and relatedness, which is the sense of connecting with others in an “authentic and supportive” manner. Rigby and Ryan show that when these three psychological needs are met in a game, they create several of the end-results that are required in an engaging game that has longevity. They used “PENS” to test four genres of games: Adventure/RPGs; MMOs; FPS; and Strategy (both RTS and TBS). Rigby and Ryan also compared “PENS” results to long-term playability (eight months), Game Ratings, and mixed demographics (not just “gamers”). “PENS,” Rigby and Ryan suggest, is useful not only in playtesting and Game Rating, but also could/should be used within the design process. However, The PENS model is actually highly flawed.

Rigby and Ryan talk of the player’s need to feel Competence, but an inference could be drawn that suggests that an easy game will be the most enjoyable. While this can sometimes be the case, it is often a sense of mastery of a game or, to tie it

back to Maslow, the need of Self-Actualisation that must be met. If a game is too challenging, a player will abandon it. If a game is too easy, however, a player will again express dissatisfaction with the gameplay. Self-Actualisation comes from a player developing skills and feeling as if they are both learning and successfully taking risks. This also ties in to Alain de Botton's Status Anxiety—players regard themselves as being equals to other players, and so both cooperate and desire to prove themselves against others. If the game has no challenge, there is no way that players feel they can rank themselves; if there is too much of a challenge, players will feel equally defeated and thus ultimately frustrated by the game design.

The second of Rigby and Ryan's needs is that of Autonomy. This is a point which I feel very strongly about. Autonomy is not necessarily the key to a good game, with guided linearity being the foe. If it was, Point-and-Click Adventure Games (a genre which I personally adore) would have no market. Almost everything that Rigby and Ryan list could and does occur in such games: "our avatar being taken out of our control too frequently by cut-scenes, running into invisible walls, or generally gameplay that gives the illusion of choice." Adventure games tackle this by usually only offering cut-scenes that are short and created in a similar style to the rest of the gameplay (often cartoonish), player-chosen dialogue, dialogue or physical phenomena that explains why we can't make our avatar go somewhere.

One could argue that there is Autonomy within Point-and-Click Adventures: you can try using any item you want on anything else. While, there are particular combinations that must be made in order to solve the puzzle and advance the plot, the player is not usually punished for their experimentation. There is once fairly recent Flash-Based Point-and-Click game that defies this rule, called "Kafkamesto" where each item allows you to try different things in order to achieve different paths within the game. For all it's illusion of total Autonomy, this game still has an "ideal" path which the player must follow, and the player gets punished if they offer the wrong item to a character, even when the player's action is completely logical. The character will take the item, but it will have achieved nothing, and this may block the player from completing the game the way they want to. This aligns with Rigby and Ryan's "illusion of choice" complaint, which is evidence of poor design. However, poorly designed games with an "illusion of choice" should not be confused with well designed games which offer limited choices. If the player was not punished in "Kafkamesto," they would have felt more encouraged to experiment with different

possibilities. Instead of “Kafkamesto” feeling like there were multiple possibilities, it starts to frighten the player out of the feeling of freedom or Autonomy. If this was the goal (to mimic Kafka’s mindset), then the designers succeeded; but they failed to make an informative game which allowed the player to learn as a result of having Maslow’s Need of Safety to be met.

Are “sandbox” games, where there are no wrong moves according to the Designers, an effective way of overcoming the breakdown of the Fourth Wall caused when the player has the feeling of Autonomy but is controlled? No. Second Life is a game (or, as Linden Labs refers to it, a “Virtual World”) where there are no set rules and no goals. The player explores the world, spends money, and builds their own part of the world, aiming to make more money. Aside from the awkward User-Interface and controls, there is ultimately nothing to sustain a player: no sense of narrative, no sense of self-importance. Other “sandbox” games lose their appeal when the player has no reward for some form of success or no punishment for failure. It is important to note that while Rigby and Ryan refer to Will Wright’s “Sim City” as being a “sandbox” game, it is in actuality what is known as a Simulation game. Simulation games have the appearance of complete freedom, but still have systems and rules which act as reward or punishment for the player’s actions. Simulation games also interfere with the player’s actions. Players do not love “freedom,” they merely hate false promises. If the player knows exactly what options they are being given and are able to extrapolate the consequences of the offered options, they will be content and not blame the game for misleading them.

The third Need presented by Ryan and Rigby is Relatedness: the need to feel in some way “connected” to other players. However, Ducheneaut, Yee, Nickell and Moore, in their article, *“Alone Together?” Exploring the Social Dynamics of Massively Multiplayer Online Games*, published in 2006, show that interaction and cooperative play are not the primary reasons that players enjoy playing in a MMO environment. After analysing the social experiences of players in MMOs, Ducheneaut et al conclude that while there is an assumption that MMOs encourage cooperative play, in reality, they foster parallel play, or what they call playing, “Alone Together.” They note that there appears to be more of a trend towards a spectacle-spectator interest in community, and that this should be capitalised upon in MMO design. Level-based MMOs may be limited in their long-term casual-social interaction because guilds, parties and raids are dependent on having numbers of

players who have similar levels (peers); this, incidentally, is their way of destroying the issue of Dependence, one of de Botton's causes of Status Anxiety which causes most grief in MMOs. Overcoming Dependence in this way, however, harms the long-term potential for social bonds to form due to the differing amount of time individuals are able to spend in-game. WoW attempts to remedy this by allowing a post "rest-state" boost in experience points gained for as long as the character is in "rest state" (ie, offline), so that players can catch up to their peers. Ducheneaut et al also note that WoW has "an addictive and carefully crafted reward structure," where the player gains new abilities every second level up, and the time taken to reach a new level, on average, increases exponentially. Solo play also ends up being more rewarding in terms of levelling speed. This could potentially further discourage group play. Of course, Ducheneaut et al show that the choice to play co-op or solo is dependent on the class the player chooses, with the strong Warlock and the Hunter (who comes with its own strong pet) spending the least time in a group, while the Priest is the most likely to be healing in a group rather than trying to level up on their own. While this paper doesn't really bring any new ideas or concepts to light, it does give statistical evidence to reinforce and validate ideas that many have had about MMOs. In terms of looking at player motivations within MMOs, this paper provides a quick reference for the evidence of higher instances of parallel play as opposed to co-operative questing play. However, Bartle found that it was true that players enjoyed cooperative play. This kind of play came more from players slowly developing a bond with other players, and making the choice to play with those same people; playing literally next to another person (in the instance of LAN parties); playing with people already known to the player and with whom they already share a bond; or to evolve their play to a level of Transcendence, the top level of the 1990's reworking of Malsow's Hierarchy of Needs, and desire to help other, less experienced players.

While Ryan and Rigby's PENS model contains valid motivational needs, none of them are strictly necessary to make an engaging and motivating game. Perhaps this model is better as an analysis tool, used to unpack and write post-mortems on why a specific game was effective- or not. Information gleaned from such a technique can influence future design or be used to analyse and test design prototypes, but in itself is lacking as a source or guide.

Another theory of Motivation within Game Design is David Ghosland's PNRC System (aka "Motivation Loop"), as discussed in his *Designing for Motivation*

article, published earlier this year. PNRC stands for Player state, Needs, Reward and Challenge. This system is less about the motivation of an individual player based on their psychological needs, but more creating in-game needs that motivate the player to continue playing, based on those four aspects. Ghozland believes that the game always sets up player expectations (based on previous games of the same genre, as well as through a tutorial level or early, easy parts of gameplay) of the relationship between the aspects of PNRC, and if a game's balance does not fulfil the player's expectations, then they will lose motivation. Where the main motivation lies depends on the genre of the game, and Motivation can be created in a multitude of areas.

Motivation on the Player State exists primarily in games where the Player State can be improved, degenerated, regenerated, improved again, et cetera. Essentially, the player wants primarily for their character to survive, and this is achieved by continuous repair and upgrade, while the game system causes damage to them. This is seen in: Fighting games, Role-Playing games, First-Person Shooters, Space Invaders clones; any game where the player takes damage and may or may not be awarded "power-ups." Motivation on the Needs is created when the core gameplay is based on the player collecting items, resources, or territory. The player wants to take over an entire map or dominate his adversaries by becoming strong through collection of resources which allow skill developments. Examples of this type of Motivation are: Capture-the-Flag, Real-Time Strategy, and Turn-Based Strategy. Motivation on the Reward is based on a kind of "carrot" approach—the player knows that they will be rewarded for doing well, which will give them an advantage in future gameplay. The stronger the player is, the harder the challenge can be, and the greater the reward offered is. Players will continue to overcome harder and harder challenges in order to get a greater reward. Examples of this type of reward structure are Platformers, Role-Playing Games, and Action-Adventure Games. The last type of Motivation is on Challenge. This type of Motivation comes from there always being a more efficient or skilled way to do something, which will yield a level of pride in the player as they become a better player. Examples of this are found in: Simulation games, Fighting games, Sports games, Puzzle games, and most Adventure games; any game where there is an intellectual challenge that can be overcome through the player learning skills which translate to being more effective at playing the game.

Three motivational game mechanics have been analysed by Ghozland in order to see how the PNR System can work: Scores, Keys, and Multi-choice. However, there are always multiple ways to interpret any evidence of effective motivational systems. Comparing them to other motivational methods is a way of finding the most efficient motivational aspects without trying to prove the validity of one system by forcing evidence.

The Score system is analysed, revealing that it is not only clearly using reward (points and/or a ranking), it rewards succeeding over the challenge (the score is dependent on the skill of the player), it supplies new items or skills to fuel needs, and finally it identifies and verifies advancements in the player state. Alternatively, de Botton would be inclined to propose that a Score or ranking is a representation of your skill, similar to money or possessions in real life, which promotes a player's skill and thus how worthy the player is of admiration and societal love. Maslow would identify that the score reassures the player of the fulfillment of their Esteem needs, as well as moving towards Self-actualisation. Bartle would say that this reward would suit an Achiever, who is interested on Acting on the World (Bartle originally used the term "Game" instead of "World," also considering "Virtual"), as it would show that they are achieving what the game defines as the goals for the player (Bartle, 130-1). In the PENS model, a Score could only be used as a measure of Competence, as a way of reassuring the player that they have successfully overcome a particular challenge.

The Key system involves retrieving a key so that the player can enter/exit another part of the game. Ghazal says that it is like a two-part "challenge/reward mechanic"; the challenge is high, and the needs to overcome this challenge are a reward to another challenge. Maslow's Esteem, Cognitive, and Self-Actualisation needs are met in the collection and use of the key; and, depending on the reason to get behind the locked door, either or both the needs for Safety and Transcendence are strived for. After the key is found, it would become a symbol for the player's ability to survive the challenge of the game, as well as promising to the player that they will be able to complete the rest of the game. De Botton's concept of Expectation thus drives the player to continue to play through the challenge, so as to feel the reward of self-esteem from succeeding over a challenge the player has been assured they can surpass. Like the player who is motivated by the Score system, the Bartle type which

would most likely enjoy this system would be the Achiever; and, again like the Score system player, a Key could only measure Competence on the PENS model.

Ghozland's description of Multi-Choice focuses on the idea that players can foresee the rewards and outcomes of their choice. However, in my personal experience, this tends to not be the case- the player can only attempt to predict what the outcomes of their choice may be. Rather than players choosing with foresight into what challenges will occur after the choice, often the choice is the challenge itself. Games are what Espen Aarseth called "Ergodic Texts": they require work on the part of the reader/player, part of which is making choices and extrapolating what might be the possible outcomes of the choices made (Wikipedia, Ergodic). Interestingly enough, Ghozland's analysis of Multi-Choice makes it sound appealing to Bartle's Achiever: he talks about being able to prepare for the challenge, and knowing what the rewards may be ahead of time. Only Achievers would be interested in this.

This infers that the management motivation examples chosen by Ghozland to demonstrate his PNRC method might only appeal to certain types of players. In "Perils of the Princess: Gender and Genre in Video Games," Sharon R. Sherman presents that she had found that the majority of boys appear to be Achiever types, while most girls tend to be more interested in the "experience" of the game: most girls would fit into the Explorer type (Sherman 253). Whether this is a flaw of the system, because Ghozland himself is mostly an Achiever, boys (and therefore Achievers) are viewed as the primary game market, or just because the games for other types of players require predominantly one type of Motivation, it is safe to conclude that there are more motivational needs required than those portrayed in the PNRC model.

Neither the PENS nor the PNRC models are watertight, and are probably better as tools for reviewing games than they are as methods of guaranteeing player motivation. Richard Bartle's types describe player interest and progression of mentality and interests, but not necessarily motivational needs. However, when combined with aspects of both the 1990's model of Maslow's Hierarchy of Needs, as well as much of the theory behind Alain de Botton's causes of Status Anxiety, a good model of Motivation for players can be developed. Understanding that beyond the biological and physiological needs, players are essentially competing in order to gain a feeling of worth, which translates to a sense of Lovability. Seeking "Love" from a game is not dissimilar to seeking love from a snobbish person- the player must persist and overcome many challenges and setbacks, collecting items and developing skills

that are viewed as being valuable within the game environment. Allowing the game to challenge needs on Maslow's Hierarchy above and including Safety needs, eventually allowing the player to restore and reclaim balance creates a sense of conditional, not easily-earned love or contentment. As de Botton says, "Our 'ego' or self-conception could be pictured as a leaking balloon, forever requiring the helium of external love to remain inflated and vulnerable to the smallest pinprick of neglect" (16). However, in playing a game, a person can choose to feel simulated or displaced neglect (dependent on whether the Player-Character is designed to represent the Player themselves, or a character onto whom they can project themselves) without the real-world feeling of stress. Then, when the player is able to achieve their objective, the reward is either the game's (or a non-player-character's) approval, a sense of overcoming a difficult challenge, or a more obvious reward of an item or points. Each of these are equally valid, as the game design validates whichever reward it chooses to bestow- so long as the rewards are consistent and fulfil the player's expectation of a reasonable reward as defined by the game system.

Works Cited

Bartle, Richard A. Designing Virtual Worlds. California: New Riders, 2003.

Chapman, Alan. "maslow's hierarchy of needs." 2006. businessballs.com. 28 October, 2007.

<<http://www.businessballs.com/maslow.htm>>

De Botton, Alain. Status Anxiety. London: Penguin, 2004.

Ducheneaut, Nicolas, Nicholas Yee, Eric Nickell and Robert J. Moore, "“Alone Together?” Exploring the Social Dynamics of Massively Multiplayer Online Games." 2006. The ACM Digital Library Portal. 21 September, 2007.

<<http://portal.acm.org/citation.cfm?id=1124834>>

"Ergodic literature." Wikipedia: The Free Encyclopedia. 5 October 2007. 8 November 2007. < [http://en.wikipedia.org/wiki/Ergodic\\_literature](http://en.wikipedia.org/wiki/Ergodic_literature)>

Farrell, Nick. "Second gamer dies after massive binge." 22 October 2002.

vnunet.com. 3 November 2007.

<<http://www.vnunet.com/vnunet/news/2120472/second-gamer-dies-massive-binge>>

Ghozland, David. "Designing for Motivation." 6 June, 2007. Gamasutra.

29 September 2007.

<[http://www.gamasutra.com/view/feature/1419/designing\\_for\\_motivation.php](http://www.gamasutra.com/view/feature/1419/designing_for_motivation.php)>

Reuters. "Gamer dies after 50 hours of non-stop playing." 10 August, 2005.

nzherald.co.nz. 3 November 2007.

<[http://www.nzherald.co.nz/section/story.cfm?c\\_id=5&objectid=10340032](http://www.nzherald.co.nz/section/story.cfm?c_id=5&objectid=10340032)>

Rigby, Scott, and Richard Ryan. "Rethinking Carrots: A New Method For Measuring What Players Find Most Rewarding and Motivating About Your Game" 16 January 2007. GamaSutra. 27 September 2007.

<[http://www.gamasutra.com/view/feature/1738/rethinking\\_carrots\\_a\\_new\\_method\\_.php](http://www.gamasutra.com/view/feature/1738/rethinking_carrots_a_new_method_.php)>

Sherman, Sharon R. "Perils of the Princess: Gender and Genre in Video Games"

Western Folklore. 56. 3/4 (Summer – Autumn 1997): 243-258

Further Reading:

Bartle, Richard. "A Sense of Self" 20<sup>th</sup> June 2003. Mud.co.uk. 6 November 2007.

<<http://www.mud.co.uk/richard/selfware.htm>>