VIDEO GAME 'ADDICTION': A NEW CLINICAL DISORDER?

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By

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Declaration

This thesis is principally the work of the author, Steven Farmer, and has been submitted only as part of the Doctorate in Clinical Psychology.

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Video Game 'Addiction': a New Clinical Disorder?

- Steven Farmer

Abstract

The aim of the present literature review was to critically appraise the most recent research in the field of gaming 'addiction'.

Eighteen papers were selected from a literature search of prominent databases published between 2005 and 2010 and included 'gaming' and 'addiction' as the focal point. The papers explored several themes including: *prevalence*, *time spent*, *individual traits*, *'addictive' potential of games*, *consequences of play* and the *concept of addiction*.

Current research paid scant attention to contextual factors and clinical assertions were made based on limited evidence. It was recommended that future studies synthesise the diverse subjects under investigation using different methodologies in order to create a holistic picture of gaming.

The current study sought to understand the experiences of gamers who had encountered difficulty and to learn how these participants related to the activity and the feasibility of gaming 'addiction'. The aim was to offer a new insight into a poorly understood group.

Seven adult male console gamers were recruited through online message boards and personal referral and interviewed using a loosely structured schedule. Interpretative Phenomenological Analysis (IPA) was used to develop the themes of: *love of gaming*, *illusion*, *goal-directed behaviour*, *game crazy*, *derision* and *self-help*.

A label of gaming 'addiction', particularly for adult console gamers was considered to be unsuitable. For these participants, they did not appear to fulfill the core criteria of 'addiction'. Limitations of the current study included: self-sampling, poor response rate, and the use of face to face interviews.

Research with children and adult gamers was recommended that did not emphasise the word 'problem 'and used online interview techniques. Intervention delivered via technology was suggested, as was the possibility of information sheets for clinicians to improve their understanding of gaming.

The critical appraisal contained reflections of the experience of conducting a small scale piece of research.

Acknowledgments

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To my Dad. Thanks for dismantling the TV that one time in the shed to show me that learning could be fun and for coming home one Christmas with the Spectrum 48k. All of this started then.

Finally thanks to my Xbox, without which, none of this would have been possible.

Word Count

	Main Text	Tables	References
Literature Review	6572	0	1471
Qualitative Study	14095	185	1101
Critical appraisal	2733	0	45
Total Word Count *(excluding Mandatory Appendices)*	23400	185	2617

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A review examining the current scientific evidence for the concept of gaming 'addiction'.

Abstract

Aims. There has been growing interest from both the media and scientific research communities regarding the possibility of gaming 'addiction'. Academic research has investigated this over the last 30 years and the aim of the present literature review was to critically appraise the most recent research and to consider the evidence for gaming 'addiction'.

Method. A total of Eighteen papers were selected of 1160 retrieved from a literature search of the databases: Psychinfo, Medline, Web of Knowledge and Science Direct. Papers selected were published between 2005 and 2010, quantitative in methodology and included 'gaming' and 'addiction' as the focal point. The 18 papers were collected into a narrative structure which explored the themes most applicable to current gaming, which included: *prevalence*, *time spent*, *individual traits*, *'addictive' potential of games*, *consequences of play* and the *concept of addiction.*

Results. Current research attempted to infer causality even though the majority of the data was derived from correlation methods. There was little consideration of the cultural and contextual factors that could explain gaming difficulties and clinical assertions were made inappropriately. Gaming as a pathological problem was considered possible by all the papers in the current review without considering other potential influences.

Conclusion. Recommendations for future research included, further studies that synthesise the diverse subjects under investigation to create a more holistic picture of gaming, the use of qualitative methods and reflexivity about the concept of gaming 'addiction'.

Introduction

Video games[1] began commercially in the 1970s and as technology became

increasingly sophisticated, compact and inexpensive, what once resided only in the

seaside arcades rapidly evolved to home gaming, portable gaming and most recently,

online gaming[2]. The games market is now a global phenomenon and in the US,

estimated sales were 10.5 billion dollars (theesa.com, 2010).

As a result of the global expansion of the games industry, concern has been growing

regarding the potential adverse effects of gaming. The largest body of research to date

has been concerned with online gaming, the most popular of which are massively

multiplayer online role-playing games (MMORPGs)[3]. The popularity of the MMORPG

World of Warcraft was such that, in 2010 it was estimated that the number of

subscribing players reached 12 million globally (Yin-Poole, 2010)

There has been growing media attention to gaming and particularly to the most

extreme outcomes, where gaming has resulted in death (BBCNews, 2005; china.org.cn,

2006) or serious injury (SKYNews, 2009). Newspapers and the media in general

reported these to show that gaming is a dangerous and potentially 'addictive' activity.

Theories of behavioural addiction

The concept of 'gaming addiction' has been derived by some from the criteria for

Pathological Gambling which is considered an 'impulse control disorder' in the

Diagnostic and Statistical Manual, fourth edition (DSM-IV, APA (1995)) and 'impulse

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[1] For the purposes of the present review, video gaming was defined as, "A type of game existing as and controlled by software, usually run by a video game console or a computer, and played on a video terminal or television screen. Controlled by a paddle, joystick, joypad, mouse, keyboard, or a combination of any of these input devices "- (wiktionary.org, 2010)
[2] Online gaming: Where gamers can play co-operatively or competitively with other gamers globally via an internet connection
[3] MMORPGs are unlimited online adventure games which focus on social gameplay and character development in an environment existing independently of the gamer

disorder' in the International Classification of Diseases, tenth edition (ICD-10, WHO (1993)).

There are currently many theories attempting to explain the existence of an 'addiction' to a particular behaviour. Orford (2001) considered there to be a "range of appetitive activities" which can become excessive due to: their numerous functions for the individual and a broad range of influences (such as individual characteristics, cultural differences and availability).

Of particular significance to the current review is the aspect of Orford's model that suggests gaming could be the, "*introduction of a new technology producing an activity that has the necessary features to give it potential for excess, and catching society unawares before it can anticipate the dangers*" - (Orford, 2001, p. 5). This statement is relevant to gaming due to the rapid rise in popularity and the speed with which the technology has continued to evolve.

West (2006) considered motivation to be central to any theory of addiction and asserted that, "at every moment we act in pursuit of what we most want or need at that moment" (Primetheory.com, 2010). His Prime theory posits a rational decision making process at play that is at any one time balancing: emotional states and drives; evaluations and motives; urges; and actions. West considered problems in the individual's motivational system, the behaviour itself or the social and physical environment, as the route to 'addiction'.

Both Orford's theory of 'Excessive Appetites' (Orford, 2001) and West's 'Prime Theory' (West, 2006) attempt to explain non-specific behavioural 'addictions' and are considered in the current review the closest thing to describing gaming 'addiction'. To date, there is no one gaming-specific theory regarding excess or pathology.

Gaming addiction

Early research in the field of gaming 'addiction' focused on the harmful effects of coin-operated arcade games: a case report by Keepers (1990) highlighted what was described as a "clearly pathological preoccupation" with video games. The child had been gaming in a local game arcade daily for 4-5 hours and needed $30-$50 each day to continue. Keepers argued that this level of use was symptomatic of the greater difficulty of an abusive home life rather than an independent clinical disorder, but he did consider the game's design as a contributing factor to 'habituation'.

Early scientific research had likened gaming to a form of gambling without the financial reward (Griffiths, 1991; Johansson & Gotestam, 2004) which could potentially develop into an addiction. Fisher (1994) adapted the DSM-IV's dimensions of dependency (APA, 1995) to measure gaming 'addiction' and of the 460 participants, 6% (n=28) were defined as "pathological players". This research was expanded to home console gaming by Phillips *et al.* (1995) who demonstrated that 7.5% (n=50) of his sample scored highly on a scale adapted from the DSM-III for pathological gambling. In a similar study, Griffiths (1997) showed that 37.5% (n=55) from a sample of 147, 11-year-old gamers scored four or more out of seven on this adapted scale. Despite the caution that the scale was "somewhat inadequate" (p.235) for investigating addiction, Griffiths contended that just over a third of the sample were "addicted". Other studies (Johansson & Gotestam, 2004; Salguero & Moran, 2002; Griffiths & Hunt, 1998) argued varying levels of prevalence using different methods of measurement. Prevalence rates unsurprisingly differed in studies that utilised diverse measurement criteria and methodologies for a poorly operationalised condition. Despite this variability, gaming 'addiction' has been considered by some a legitimate clinical condition which would require intervention.

Relevance to clinical practice

Treatment centres for 'gaming addiction' have been appearing around the world, from wilderness retreats in Wyoming (cottonwoodtuscon.com, 2011), team-building breaks in Amsterdam (smithandjones.nl, 2009), and imposed cessation on time spent combined with cognitive behavioural therapy (CBT) (computergamingaddiction.com, 2010). China introduced a national policy to prevent under 18s gaming for an extended periods by continuously reducing rewards until gamers stopped playing and participated in physical exercise (Lee, 2007).

There has been research investigating treatment efficacy for gaming 'addiction' under experimental conditions which included: a cognitive dissonance approach (Chiou & Wan, 2007; Chiou, 2008); CBT and family therapy (Young K. S., 2007); behavioural interventions (Kuczmierczyk, Walley, & Calhoun, 1987); and pharmacological interventions (Han, Hwang, & Renshaw, 2010; Han, *et al.*, 2009).

Block (2008) argued for the inclusion of 'internet addiction' (of which a significant part is gaming) as a condition on the compulsive-impulsive spectrum in the DSM-V. For the American Psychiatric Association (APA), additional research into the area is required but they would consider its inclusion in 2012 "if the science warrants it" (sciencedaily.com, 2007). There has been considerable emphasis on the assessment, diagnosis and treatment of a very poorly defined hypothetical construct without first examining if this should be considered a clinical condition.

With a shift from interest in the possibility of gaming 'addiction' to its treatment as a mental health issue, it seemed timely to investigate the contemporary literature regarding gaming and to what extent it has been validated as a legitimate 'disorder'. The plausibility of gaming 'addiction' has been questioned (Blaszczynski, 2008; Wood,

2007) and Griffiths (2008) suggested a distinction between 'excessive activity' and 'addictive activity', (the former adding to life whilst the latter taking away from it). He asked: what is addiction? Does videogame addiction exist? And if it does, what are people addicted to? It was thought that the current review could be useful for future research or possible clinical consideration to look for scientific evidence for gaming 'addiction' or to denounce it as a concept based less on "scientific facts and more upon media hysteria" (Wood, 2007, p. 169)

Research Question and Aims

The aim of the present literature review was to examine the current gaming 'addiction' research and to scrutinise the suitability of the label 'addiction' based on the evidence. The research for review was currently less than 40 years old and initial scoping for articles demonstrated that to date, gaming research is in its infancy. By commentating on the current body of research in this area, implications both for further research and for clinical practice could be explored.

Method

Research Strategy

Several databases were investigated to search the following terms: gaming/ video games/ computer games and MMORPGs coupled with addiction/ problem/ pathological/ dependence. These words were all truncated in order to return the maximum number of results. The main databases searched were: PsychINFO, PsychARTICLES and PsychEXTRA; Medline (1951-present), Web of Knowledge and Science Direct. It was clear from searching via PsychINFO, that the volume of articles retrieved in the preliminary search was not practical to process when the same articles were found using much narrower terms. The initial search was then narrowed to include only addiction* and gaming* and this technique was adopted for all the databases.

The initial search was conducted in September 2010 and an identical search in December 2010. The increased number of articles retrieved across the time span indicated that it was important to include the date of the search, as replication could be compromised by the increased popularity of this subject area.

Inclusion criteria

Papers that were published between 2005 and 2010 were included; this time period was not an arbitrary decision, rather it was indicative of the time when online gaming had become available both on home computers and consoles. This time period also showed a marked increase in gaming research (Carbonell, Guardiola, Beranuy, & Belles, 2009).

The search terms, addiction* and gaming* yielded 1160 articles across the four main databases. Terms that recurred were: alcohol, gambling and casino and, after narrowing the search to the years 2005-2010, 462 articles remained. A hand search

revealed the occurrence of several themes not relevant to the current literature review: gaming (without a clinical significance), the internet only, critical discussion and review papers, gaming machines, smoking and aggressiveness, and these were subsequently removed. The remaining 112 articles were further scrutinised for ones that were inaccessible, were in languages that could not be easily translated and were not duplicated in other searches. Also, any articles that appeared to be about gaming but were actually about the internet were excluded. This resulted in 22 papers for the current review.

Exclusion

Each of the 22 papers were reviewed and of these final 22, it was decided to focus on research that was quantitative in methodology, thus removing two qualitative articles (Hussain & Griffiths, 2009; Chappell, Eatough, Davies, & Griffiths, 2006), and also to focus on research that was not specifically examining biological processes. These final two articles (Thalemann, Wolfling, & Grusser, 2007; Ko, et al., 2009) were less reflective about the concept of addiction and their removal left 18 articles in the final review (Appendix A).

Results

The most recent research of gaming 'addiction' was heterogeneous in aims, methodology and country of origin and so the current review was a narrative account of the developments in the field. The papers were grouped and broadly themed: *prevalence*, *time spent*, *individual traits*, '*addictive' potential of games*, *consequences of play* and a reflexive position about the *concept of addiction*.

Prevalence

There was a high proportion of papers that sought to accurately identify the prevalence of gaming 'addiction' but the way in which it was measured varied considerably. The studies in the current review ranged from using adaptations of the DSM-IV criteria for pathological gambling (Hussain & Griffiths, (2009); Lemmens, Valkenburg, & Peter, (2009); & Gentile, (2009)), to no measure at all (NG & Wiemer-Hastings, 2005). Prevalence rates were established with samples as specific as players of a specific MMORPG (Charlton & Danforth, 2007); MMORPG gamers (NG & Wiemer-Hastings, 2005); school children (Hsu, Wen, & Wu, 2009); through to the general population (Wenzel, Bakken, Johansson, Gotestam, & Oren, 2009).

Prevalance rates varied greatly from 1.4% (Lemmens, Valkenburg, & Peter, 2009) up to 38.17% (Charlton & Danforth, 2007), and were contingent upon the method of classification, the sample, the way the researchers conceptualised 'addiction' and how the classification tool was interpreted. Charlton and Danforth (2007) illustrated that by using a polythetic approach (fulfilling most of the required criteria), 38.17% of their sample was classed as 'addicted' but with a monothetic approach (the need to endorse all the criteria) prevalence was 1.8% in the same sample. Lemmens *et al*. (2009) used the *Game Addiction Scale* and found a difference of 8% in prevalence rates contingent upon the minimum required response for each statement. If participants answered

"often" or above then the prevalence rate for 'addiction' was 1.4%. However if the minimum requirement was reduced to a response of "sometimes" or above the rate was noted to be 9.4%.

The breadth of inconsistencies has been compounded by many of the academic authors who claimed that their new scales were all valid and reliable but finding completely different prevalence rates. It is perhaps true that all these instruments were statistically valid, but also true that they were measuring different aspects of gaming behaviour, populations and diverse groups of gamers. This has made demonstrating any unified understanding of gaming of a clinically problematic level untenable. Other articles that are discussed within the current review focus on specific aspects of gaming, the first of which is 'time spent' as a way to measure problematic gaming behaviour.

Time spent

The volume of time engaged in gaming was probably the most often discussed justification for gaming 'addiction' to exist. Papers included in the current review have correlated time spent with 'pathological' play (Gentile, 2009); dependence (Hussain & Griffiths, 2009); and MMORPG gamers (NG & Wiemer-Hastings, 2005). Despite this research, time spent is criticised as insufficient to establish any kind of clinical problem due to the need to examine other factors, (discussed later in the current review).

Hussain and Griffiths (2009) established an "operational definition" of excessive gaming as greater than 35 hours per week and Wenzel *et al.* (2009) defined excess as more than four hours per day (or 28 hours per week). These conceptualisations of what comprises 'excess' were determined by the value bases of the researchers. For Hussain and Griffiths (2009), 35 hours was the amount of time spent in a full time job, whilst Wenzel *et al.* (2009) gave no explanation. 'Excess' could be defined as a quantity or

degree, *"Exceeding a normal, usual, reasonable or proper limit…exorbitant…more than what is justifiable, tolerable or desirable"*- (TheFreeDictionary, 2011). This definition adds an additional dimension to the construction of gaming 'addiction'; who decided what is 'proper', and for whom is gaming behaviour 'tolerable'?

Hussain and Griffiths (2009) demonstrated a correlation between 'excessive' and 'dependent' gaming, arguing that "*dependent gamers may associate a higher than normal value to MMORPGs in their lives*" (p.569) without establishing what 'normal value' meant. Wenzel (2009) demonstrated that in their sample the typical excessive gamer was a single man who preferred online games and reported more mental health problems. Both studies illustrated a relationship with their subjective measure of time spent and neither Wenzel (2009) or Hussain and Griffiths (2009) attempted to infer causality. There was however no investigation of the context or the individual differences of gamers. The use of a daily or weekly time spent assumes stability within gamers' activity and further inferring a profile of a gamer. The criteria for '*excessive gamer'* was insufficient to suitably capture the level of engagement each gamer has or the manner in which they engage.

Other papers in the current review considered time spent as correlated to but insufficient for a label of gaming 'addiction' (Gentile, 2009; Liu & Peng, 2009). Thomas & Martin (2010) noted in their study of Australian students that there was potential over-reporting of 'addiction', as 19% of computer game 'addicts' played for fewer than one hour per week. This illustrates the difficulty of *time spent* being a reliable indicator of problematic play, but also of the usefulness of certain diagnostic tools in determining 'addiction' (in this case, an adaptation of Young's diagnostic

questionnaire (Young, 1998)). The next section examines how gaming 'addiction' has been linked to internal qualities of the individual.

Addiction as personal responsibility

The largest proportions of studies (six out of 18) in the current review correlated personal qualities with gaming 'addiction'. Peters & Malesky (2008) sought to find a robust factor indicating 'problematic' gaming, using questionnaires to measure demographics, personality and problematic usage with *World of Warcraft* players. 'Problematic' gaming was moderately positively correlated with neuroticism and a moderately negatively correlated with agreeableness. It was inferred that there may be a specific "personality subtype" that would be at high risk to problematic usage. Causality was inappropriately inferred from correlation data and despite the study replacing the term 'addiction' with 'problematic', the usefulness of this new concept was not addressed.

Ko *et al.* (2005) examined gender differences using an adaptation of the Chinese Internet Addiction Scale (CIAS), the Rosenberg Self-esteem scale and biographical data administered to Taiwanese children, and it was found that males were more 'addicted' to gaming than females. It was argued that male gamers played to achieve and to make friends, whereas female gamers played to pass the time. Lower age, self-esteem and daily life satisfaction were associated with greater severity of 'addiction' in males, but not among the female participants. It was concluded that resources should be made available to young men with low self esteem and life satisfaction in order to prevent online game addiction.

Ko et al.'s (2005) study lacked clarity of method and causality was inferred where it was inappropriate to do so (online gaming as a functional means of escaping an

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unsatisfying life). Whilst initial screens were done to establish which of the participants were gamers, the extent of play was not made clear or if the non-gamers were included in the final study. An over-representation of non-gamers in the female participant set would skew the results towards significant findings amongst the men. This study was reflective about the possibility of other variables such as 'family interaction' potentially explaining game 'addiction' but not forthcoming with further detail.

Liu and Peng (2009) retrieved questionnaires from 288 active gamers through online discussion boards. They found that levels of psychological dependency (assessed using only the withdrawal subscale from Caplan's (2002) measure of problematic internet use) were low, so too were ratings of negative life consequences, preference for a virtual life (PVL), loneliness and depression. It was argued however, that PVL was a significant predictor of psychological dependency as this preference could be a way to satisfy "the social needs of people with incompetent social skills" (p.1310). The inference that incompetence in the real world leads to escape into a virtual world could not be legitimized, PVL was a poorly defined concept and it was unlikely that one factor such as this could sufficiently accommodate all gamers experiencing difficulties.

Kim *et al.* (2009) demonstrated a correlation between the development of an addiction and an individual's "character inventory" by surveying school children in Seoul with questionnaires about measuring, addiction, demographics and symptoms experienced. There were significant positive correlations between scores of *novelty seeking* and role-playing games (RPGs) and scores of *reward dependence* and sports games. Kim *et al.* (2009) concluded that further research was needed in order to develop the right cure for specific 'addiction'. Whilst it was not explicitly discussed, it appeared that the researchers were suggesting that targeting treatment at people who seek novel

experiences will reduce their addiction to RPGs. Whilst this seems to be a spurious conclusion based upon limited validation of both 'novelty seeking' and 'addiction', it was the first paper in the current review that queried the idea that there was a single gamer profile.

Lemmens, Valkenburg and Peter (2009) sought to validate a new addiction scale as a second order construct using the DSM-IV based criteria for Pathological Gambling. They predicted that 'addicted' gamers would be less satisfied with their daily life, more lonely, more aggressive and have lower social competence. Significant negative correlations were found between 'addiction' and both life satisfaction and social competence, and, significant positive correlations with both loneliness and aggression. This paper however, focused on validating the new scale and the finding that 'addiction' was correlated with several measured personality factors was paid negligible attention.

Kim *et al*. (2008) also examined the relationship between addiction and personality characteristics using instruments administered to gamers online. They hypothesised a correlation between personality characteristics and gaming 'addiction' and demonstrated that narcissism and aggression were positively related to 'addiction', whereas self control and social relationships were negatively related. They contended that gaming fulfilled "latent aggressive impulses which are not acceptable in the real world" (p.215) and that gaming addiction was an issue of impaired self-control.

All six papers that examined personality characteristics were correlation studies but despite this, four of them made explicit claims regarding causality. Samples in these studies were particularly specific (World of Warcraft gamers only, adolescent gamers), rendering impractical a universal 'addictive personality'. All three Asian papers used the term addiction freely and did not query its existence as a real condition, and the

others invalidated the concept only to replace it with dependency or problematic. Whilst there was some reflection upon the term (Peters & Malesky, 2008), addiction appears to be replaced in order to pathologise certain types of gaming behaviour without acknowledging other contributing factors such as context, societal influence, etc. There has been some recent media attention regarding the inherent qualities of games which make them more 'addictive' (Rowe, 2010) which is examined next.

Games as potentially addictive

The potential of certain activities to be 'addictive' is one of the ways in which addiction research could be better understood. Games are designed to sell and in order to do so, games must be as engaging as possible. This is accomplished through many different mechanisms which are central to behavioural theories. Particular to this is the idea of the intermittent or partial reinforcement effect (PRE) (Wanner, 1982) often illustrated through the mechanics used in fruit machines (Griffiths, 2002). The player is rewarded for their efforts on occasions that cannot be predicted by and is argued as more compelling than receiving a reward on a predictable and consistent basis. Games demonstrate this not only in a predictable way (beating a major enemy or completing a particular subplot), but also by rewards that cannot be predicted (such as levelling up, unexpected achievements in games or unlocking of 'cut-scenes'[4])

It has been suggested that the games' design was integral in advancing an engaging activity to a more problematic preoccupation. research varied in terms of subject matter: Grüsser *et al*. (2007) examined the concept of addictive potential in games; Hsu, Wen and Wu (2009) sought to understand in-game mechanisms; Rooij et al. (2010) looked at separate internet applications including gaming and the relationship with 'compulsive'

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[4] Cutscenes are cinematic mini-movies that progress the storyline with through improved graphics and audio).

internet use' and Lu and Wang (2008) attempted to demonstrate how 'addiction' to games was dictated by game loyalty and satisfaction.

Each of the papers mentioned above used a series of questionnaires to measure 'addiction', 'compulsion' or 'pathological' behaviour regarding gaming and two of these studies (Grusser, Thalemann, & Griffiths, 2007; Rooij, Schoenmakers, Eijnden, & Mheen, 2010) used regression analyses to determine the predictive value of their hypotheses.

Grusser, Thalemann and Griffiths (2007) used the ICD-10 criteria for pathological gambling and adapted it to gaming (three out of the six factors would result in an attribution of a 'pathological' gamer label). They found that 12% of their sample (n=840) were considered 'pathological' gamers and argued that gaming for them had an addictive potential related to a stronger positive outcome expectancy. This conclusion appeared arbitrary and there was no discussion of what genres of game had greater potential or what they provided that reinforced gaming behaviour. The authors concluded with a recommendation of cognitive-behavioural interventions to improve self-awareness regarding gaming as an "inadequate stress coping strategy" (p.291). This conclusion was made without explanation regarding explicit methodology and how criteria were defined. Recommendations were offered but without an understanding of how they were reached.

Rooij *et al*. (2010) administered the compulsive internet use scale (CIUS) to nearly 10,000 young people as part of a national Dutch study. They found that online gaming was most strongly associated with high scores on the CIUS and argued for a new subgroup of 'compulsive' internet users to be classified as 'compulsive online gamers'. They considered all separate internet applications as discrete from one another which as

technology has changed, has become a less feasible way to understand them: *Facebook*, *MSN Messenger*, chat rooms and gaming all share a variety of functions simultaneously and cannot easily be disentangled.

The significant lack of clarity regarding in-game mechanisms that encourage problematic play was the focus of two papers (Hsu, Wen, & Wu, 2009; Lu & Wang, 2008). Despite this, both papers failed to identify a link between the specific characteristics of a game and its potential to cause problematic play. Instead, Hsu *et al*. (2009) used regression analysis to find that there were five (of a possible 11) factors that significantly explained MMORPG 'addiction'. These were: curiosity (the motivation for continued exploration); reward (receipt of pleasurable feedback as a result of gameplay); belonging (sense of in-game community); obligation (the sense of social pressure to encourage continued play); and role-play (progression and emotional attachment to the gamer's online character). They then considered these factors as part of the mechanics of the game and attributed as contingent upon game design and not as a result of any other reason, such as personality factors.

Lu and Wang (2008) hypothesized that a low perceived sense of control, descriptive norms (the perceptions, behaviours and attitudes of significant others), perceived playfulness (how much fun the game was) and game loyalty would all be significantly correlated with 'game addiction'. They concluded that perceived playfulness, was a factor that directly contributes to online game 'addiction' and that descriptive norms are also a significant factor. These results considered very broadly the importance of game design but there was no acknowledgement of different levels of perceived playfulness inherent in each game. Indeed there was no reflection about the antecedents to 'perceived playfulness' or any appraisal of it as a useful measure (three statements that

respondents must express the extent to which they agree). This concept also addressed the 'perceived' aspect without caution. Perception attests more to the individual's assumptions rather than responses provoked by any particular game. It could be argued then that 'perceived playfulness' is simply another personal characteristic.

The previous four studies described variables that they measured ('perceived playfulness', 'obligation' or 'positive outcome expectancy') as sufficient to be scientifically rigorous but many of them appear to be poorly defined. The design of each game makes for a very compelling experience but the assumption that the design of a game leads to game 'addiction' is not sufficiently evidenced in the reviewed articles. The current review will now examine another way of understanding gaming 'addiction', the study of the subjective experiences of those playing.

Addiction as Consequences

In addiction literature, consequences are often a focus (APA, 1995; WHO, 1993) ranging from symptoms of withdrawal, neglect of duties, conflict with loved ones and the subjective experience of being unable to stop. The previous studies paid these ideas scant attention, instead focusing on the causes of 'addiction' and using these consequential aspects only as integral to the diagnostic criteria. The following studies emphasised the experience of the gamer and what effects gaming can have on them, both positive and detrimental.

Wenzel *et al.* (2009) examined computer game playing behavior and negative consequences in the general Norwegian population by administering a questionnaire as part of their national postal survey. Of the respondents, 2.2% (n=47) gamed for over 4 hours per day (their cut off for 'excessive play') and the four questions regarding negative consequences were positively correlated with time spent gaming. It was

assumed from this finding that there was a profile of the typical 'excessive gamer'. In this study, the use of the word 'consequence' inferred that there was a causal relationship between gaming time and negative experience, however there was no evidence to suggest anything other than a correlation.

Hussain and Griffiths (2009) argued that 'behaviourally dependent' participants scored significantly higher than 'non-dependent' gamers on all six statements regarding negative consequences of their gaming behaviour. Conflicts with friends and family, withdrawal symptoms and unsuccessful attempts to quit were all significantly higher in the 'dependent' group than those described as 'non-dependent'. This conclusion almost seems tautological as to be allocated to the 'dependant' group, gamers need to strongly agree with all statements relating to the core components of 'addiction' which inevitably meant that they would score significantly higher for them. Other consequences that have been studied regard the impact of gaming upon academic achievement (Skoric, Teo, & Neo, 2009), something else of concern within the popular press. It was hypothesised that the higher the addiction score, the lower the scores achieved on English tests in school. Time spent gaming, however was positively correlated with *higher* grades in English, thus questioning the usefulness of time spent as a criterion for 'addiction' and also for 'addiction' being causally responsible.

Liu & Peng (2009) argued that there was a positive correlation between 'psychological dependency' to MMOGs and physical and life problems, but the paper did not make clear what these problems comprised in their measures. As such, the assertions of the authors that this measure was useful, had to be accepted by faith rather than academic transparency. It was impossible to ascertain how applicable it could be across cultures and age groups. It is possible to consider 'conflict' as an appropriate

contributor to the measure of addiction, used in both the DSM-IV and the ICD-10, however, conflict necessitates the recognition of other parties in the relationship with different values regarding what excess would be and different means of addressing this. Thus, it would be inappropriate to consider this a useful means of understanding 'addiction', particularly when contextual issues are not first understood.

Thomas and Martin (2010) conducted a survey in Australia to investigste home computer game 'addictions'. It was illustrated that, of the 5% of those meeting the criteria of addiction, 71.4% said that participation impacted on their homework and 37.4% said gaming took precedence over their relationships. They reflected upon the limitations of the research regarding its cross-sectional design, potential over-reporting and the lack of conclusive support for the reported prevalence rates. Recommendations for future research were made which included the use of clinical interviews in order to support existing findings; the first time clinical interview had been recommended to support the legitimacy of gaming as a clinical disorder.

The majority of the papers reviewed so far paid little or no attention to the concept of 'addiction', with few commenting upon its uncertainty (Lemmens, Valkenburg, & Peter, 2009). The final section in the current review examines the concept of behavioural addiction and how it has been addressed in the literature.

Addiction as a concept

Two papers examined the concept of 'addiction' in some detail. King, Delfabbro and Zajac (2009) examined what they described as 'problem video game playing' due to a lack of an operational definition of 'addiction'. They implied that it could be a mistake to be misled into thinking that gaming was a fully-fledged addiction when it could be secondary to an underlying problem. Web surveys (including an adapted version of the

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DSM-IV and the problem video game playing test (PVGT), which was based on the internet addiction test (IAT)) were administered to a broad cross-section of people. King *et al*. (2009) asserted that by using factor analytic methods, the 20 items in the PVGT appeared to tap into a "general problem play construct" (p. 84) and that high scores on the PVGT were correlated with more significant self-reported problems. It was also suggested that the PVGT had two distinct peaks and it was concluded that levels of game play could be demarcated as a useful consideration of where problems would be expected to occur.

Charlton & Danforth (2007) also addressed the concept of 'gaming addiction', but rather than reject it, they sought to distinguish between what they called the 'core' criteria for addiction and the 'peripheral' criteria. The core components of addiction were scrutinized by administering web-based questionnaires (specifically designed for a particular demographic: MMORPG players of the game 'Asheron's Call'). They argued that peripheral criteria (i.e. euphoria, tolerance and cognitive salience) should not play a great part in classifying an addiction as these could be considered as 'engagement', whilst the core criteria (withdrawal, relapse, conflict and behavioural salience) should do. Using factor analysis, they argued that the 'addiction factor' had a higher loading upon core components of addiction and the 'engagement factor' had a higher loading upon peripheral criteria. Charlton & Danforth (2007) concluded that the three peripheral or' engagement' criteria should be discarded from future research attempting to classify gaming addiction.

Both the King *et al*. (2009) and the Charlton and Danforth (2007) papers appeared initially to question the concept of addiction, but upon further examination, they simply replaced one concrete way of thinking with another. Both articles still saw a potentially

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pathological condition without first establishing normalcy and both used methodologies that focused on explanation and not understanding (Smith, 2003).

The articles examined in the current review all attempted to understand gaming behaviour in different ways but all with relevance to clinical implications. It was found that the studies used limited methodologies and were mostly unreflective about the concept of 'addiction' and the contribution of context and other factors. The implications of these findings are discussed below.

Discussion

The current literature review examined contemporary scientific literature pertaining to gaming 'addiction'. The main areas of inquiry that the articles focused on were loosely grouped together in order to create a narrative pathway through the material. The broad themes of these papers were: prevalence, time spent, individual traits, 'addictive' potential of games, consequences of play and a reflexive position about the concept of addiction.

All the articles in the current review were focused on describing and explaining gaming behaviour with statistical methods and the validation of new instruments. All were correlation studies and consequently could not lead to any inferences of causality. Despite this, many of these articles argued that their findings indicated vulnerabilities or risk factors either in the individual or the game itself.

Many of the studies discussed implied that their findings could be generalised to larger populations in order to be clinically applicable, however many of the ideas were culturally specific and may not be appropriate elsewhere. Ko *et al*. (2005), suggested the importance of considering gender differences when implementing strategies to prevent gaming addiction. It was asserted that females may receive more family supervision than males, however their sample was made up only of Taiwanese adolescents. This suggestion may not be as applicable in Western cultures and calls into question the validity of such a claim outside of the specific location that the study was conducted.

Articles retrieved for the current review were from different countries and comprised diverse cultural viewpoints of gaming and psychological research methods. The developments of new instruments were constructed outside of the medical arena

and whilst inclusion in the DSM-IV or ICD-10 may not be appropriate for gaming 'addiction', diagnostic manuals do provide a shared language from which healthcare professionals (and scientific researchers) can communicate. At the time of writing, there was no cohesive understanding of gaming 'addiction' therefore no agreement regarding intervention or future research. Collaboration in order to establish a more unified understanding of gaming could synthesise the existing findings and support progress in this subject area by producing a more holistic model of gaming.

Despite a lack of cohesiveness among the researchers, they all sought to explain gamers and their activity. Conclusions were drawn about the subject group such as "Offline gamers had sought out video games to alleviate depression" (NG & Wiemer-Hastings, 2005); and "online social interaction may become…a way to satisfy the social needs of people with incompetent social skills" (Liu & Peng, 2009). These statements were spurious, poorly validated through empirical evidence and employed a methodology which did not allow for such conclusions.

The absence of qualitative methods was noticeable in the literature search, but it was an oversight to exclude the two qualitative studies that were available at the time of the current review. As a corpus of research grows, it should be possible for future reviews to focus more specifically on methodologies (i.e. interviews) or single areas of interest (i.e. game design and 'addiction').

The articles that were included were already dated when the current review was written. Like any subject of enquiry where technology is the main focus, the landscape is constantly changing. Articles produced in the 1980s focused on arcade machines in seaside resorts, in the 1990s, the home console market become lucrative and in the beginning of the 21st century MMORPGs became globally popular. Even the articles

that had been selected for the current review spanned a time period of significant change for the gaming industry and so drawing direct comparison between them was impractical.

The idea of gaming 'addiction' needs much further investigation and particularly the validity of the concept. Wood (2007) considered four 'misunderstandings' regarding gaming addiction. Firstly that it is a label attributed by others; that gaming to excess is a means of escape from other problems; that gamers label themselves as addicts and this kind of behavior is simply a case of poor time management. Future research needs to be cognisant of the feasibility of the concept and not just the labeling of it.

Future study needs to account for the philosophical standpoint of the individual researcher. However, two broad thoughts for future study have been extrapolated from this review. Firstly, to investigate gaming 'addiction' in a more holistic fashion, a synthesis of existing areas of interest should be undertaken to more comprehensively address the classification. An in-depth look at consequences, individual characteristics, game design, and addiction classification is needed to encompass the different subject areas addressed individually by contemporary research. Gaming research needs to address ideas that have not yet been considered such as: context, societal concerns and how they fuel current thinking, meaning and sense-making from the perspective of the gamer. The use of qualitative methodology would be integral in any future research privileging understanding over description in order to challenge some of the existing preconceptions about gaming and gamers.

It is important to consider that whilst several of the articles currently reviewed address the issue of clinical diagnosis, the majority of the research was not carried out by clinicians. It seems prudent then, that future research is conducted within the clinical

as well as the academic arena in order to add another dimension to the current debate about the appropriateness of gaming 'addiction'.

Conclusion

Whilst there is some consensus that the concept of videogame 'addiction 'has not been operationalised sufficiently, the majority of existing research has adopted the term and used it as assessment criteria from current diagnostic manuals . Studies in the current review used the term, even though it has not been used in clinical models of pathological gambling, substance and alcohol dependence.

At the time of writing there was insufficient research to validate gaming 'addiction' as a well-evidenced clinical condition. There is a need for more reflective work regarding this concept and to build upon the clinical applicability of an appropriate term before measuring co morbidity, prevalence rates, predictors and treatment. All these are potential areas for further study, but not before there is a better consensus in the research community of a more useful definition of problematic gaming behaviour.

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How is problematic electronic game play understood? An Interpretative

Phenomenological Analysis of self-defined problem console gamers.

Abstract

Recent scientific research regarding electronic gaming has mostly used quantitative methods with young personal computer (PC) gamers in order to demonstrate the activity as a potential 'addiction'. Many of the findings had assumed there to be a 'personality profile' of gamers, or considered gaming 'addiction' as a problem that needs treatment.

The current research sought to understand the experiences of gamers who had encountered difficulty with their gaming, to learn how these participants related to the activity, and their perspective regarding the feasibility of gaming 'addiction'. The intention was to offer a new insight into a poorly understood group, rather than create an all-encompassing theory to explain gaming behaviour.

Seven adult male console gamers were recruited through online message boards and personal referral and were interviewed using a loosely structured schedule. Interpretative Phenomenological Analysis (IPA) was used to develop themes from each interview transcript and super-ordinate themes were generated, which were: *love of gaming*, *illusion*, *goal-directed behaviour*, *game crazy*, *derision* and *self-help* (which were discussed).

A label of gaming 'addiction', particularly for adult console gamers was considered to be unsuitable. For these participants, gaming was seen as pleasurable: goals were a focus of the activity; high engagement (i.e. high number of hours playing, neglect of responsibilities) was finite and tied to a specific game or goal; and they were able to manage their own difficulties without external intervention.

Limitations of the current study included: self-sampling, poor response rate, and the use of face-to-face interviews. Further research with children and adult gamers was recommended that didn't place emphasis on the word 'problem' and used online interview techniques. Intervention delivered via technology which emphasised self help was suggested as was the possibility of information sheets for clinicians to improve their understanding of gaming.

Introduction

Electronic gaming has increased in popularity in the years after the first commercial video game, *Computer Space,* was released in 1971 (wikipedia.org, 2011). It is now so popular that in 2010, 67% of American households were reported to play computer or video games (theesa.com, 2010). This rise in popularity could have been attributed to reduction in cost, increase in availability and marketing to every demographic of the population. Gaming is a form of entertainment that uses electronic equipment and software to emulate real life activities (such a sports, puzzles, board games) or fantastic adventures in artificial environments (from alien invasion to sword and sorcery). As the sophistication of the technology and availability of the hardware increased, so too did the concern expressed by the media and the scientific community regarding gaming as a potentially harmful activity.

Early research in gaming considered the possibility that certain types of gaming could be considered as an 'addiction' and in the US, concern was raised by the Surgeon General, that children were becoming addicted to games "body and soul" (nytimes.com, 1982). This matter has been addressed differently by numerous researchers. For some (Fisher, 1994; Griffiths & & Hunt, 1998), gaming 'addiction' was simply a matter of adapting the ICD-10 (WHO, 1993) or DSM-IV (APA, 1995) criteria for 'pathological gambling', an impulse control disorder that comprises: preoccupation, tolerance, withdrawal, euphoria, conflict, and relapse. For others (Ko, *et al*., 2009), it has been likened to a substance dependency or linked to large amounts of time spent engaged with the activity (Wenzel, Bakken, Johansson, Gotestam, & Oren, 2009).

In one of the early research studies, Fisher (1994) sought to clarify the concept of 'addiction' amongst arcade gamers. She surveyed 460 adolescents and suggested that 6% of the sample (n=28) would be classed as 'pathological players'. She concluded that

"in some adolescents, arcade video game playing is a behaviour which resembles pathological gambling" (p. 551). In a more clinically focussed study, Keepers (1990) discussed a case study where a 12-year-old boy was stealing money and avoiding school in order to play arcade games, resulting in conflict with his family. Keepers concluded that video games are created to "deliberately produce habituation" (p.50) without fully acknowledging the physical abuse the boy experienced in the home and how this could have been more the cause of his gaming problems rather than the game's design per se.

As a body of research on the subject has developed, gaming 'addiction' has been linked with such things as aggression (Lemmens & Bushman, 2006); school difficulties (Skoric, Teo, & Neo, 2009); personality characteristics (Peters & Malesky, 2008; Kim, Namkoong, Ku, & Kim, 2008) and mental illness (Chan & Rabinowitz, 2006; Wenzel, Bakken, Johansson, Gotestam, & Oren, 2009). Whether described as 'addiction' or 'problematic', 'excessive' or 'pathological', research seeking to validate gaming 'addiction' as a legitimate mental illness has continued to grow since 'Space Invader obsession' was studied in 1982 (Ross, Finestone, & Lavin, 1982).

From some of these studies, a 'gamer profile' was suggested arguing a certain type of person who could be susceptible to gaming 'addiction'. This hypothetical person exhibited such problems as: "incompetent social skills" (Liu & Peng, 2009, p. 1310); high loneliness (Lemmens, Valkenburg, & Peter, 2009); and high neuroticism (Peters & Malesky, 2008). The gaming 'addict' was also said to experience similar processes in the brain whilst gaming to those diagnosed with a substance dependence (Ko *et al.*, 2009) and subsequently it was argued that "excessive computer game playing…meets the criteria of addiction" (Thalemann, Wolfling, & Grusser, 2007, p. 617). Despite little evidence, gaming 'addiction' has been considered legitimate by many scientific authors.

This has led to research papers examining the effectiveness of treatments for gaming 'addicts': cognitive approaches (Chiou & Wan, 2007; Chiou, 2008); behavioural techniques (Kuczmierczyk, Walley, & Calhoun, 1987); cognitive behaviour therapy and family therapy (Young, 2007); motivational interviewing (Griffiths & Meredith, 2009); and even medication (Han, Hwang, & Renshaw, 2010; Han, *et al*., 2009) have all been argued to be effective interventions.

The progress from conceptualisation to treatment in gaming 'addiction' research has been conducted without authors questioning the appropriateness of the term, or looking to other models to draw useful comparisons and parallels. As a result, there are significant gaps in the existing research literature. Research to date has tended to focus on children (possibly because they are vulnerable and have been the focus of media attention), even though the average age of the gamer has been estimated at 33 years old (bbc.co.uk, 2009).

Research has sought to explain gaming as a phenomenon using quantitative methods, typically through correlation and validation of new instruments to measure gaming 'addiction'. This research to date has been cross-sectional in nature and despite attempts to do so (Kim *et al*., 2009; Kim, *et al*., 2008), no causality can be inferred from any of the findings. At the time of writing, existing research was dominated by personal computer (PC) games, in particular massively multiplayer online role-playing games (MMORPGs)[5] such as *World of Warcraft.* MMORPGs have received the majority of the academic focus even though the home console market was reportedly bigger in 2010 than that of the PC (digitalbattle.com, 2010).

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[5] MMORPGs are non-linear, never-ending games focusing on combat, character progression and strategy where team work through other online players is the key to success.

The research that has been generated so far has been predominantly contributed by academic researchers, who may not be best suited to offering diagnoses, assessment and treatment of clinical cases. Some papers, like those written by Keepers (1990), offered a clinical insight by means of a single case study, but these findings were presented without challenging the notion of gaming 'addiction' constructed within the academic community. Whilst there are some papers that have acknowledged gaming 'addiction' as a debatable concept (Charlton & Danforth, 2007; Peters & Malesky, 2008), they still created a model which attributed certain types of gaming behaviour as pathological, therefore emphasising a disease or illness model. There has been an absence of research that attempted to understand the gamers' viewpoint and the influences of language and culture on diagnostic labels.

There have been a few exceptions however, to the type of study currently in prominence when studying gaming, but they have lacked methodological rigor or reflexivity regarding the concept of gaming 'addiction'. Chappell *et al.* (2006) used a qualitative methodology when they examined the discussions of adult *World of Warcraft* gamers on an online forum. The researchers found that those observed used the language and displayed the core components of addiction however the gamers were unaware that their conversations were being recorded and analysed (adding many ethical issues to this study). There was no interaction between gamer and researcher and thus no sense of co-construction, rather this appeared to be an observation of unknowing subjects. Hussain & Griffiths (2009) interviewed 71 adult gamers via email or 'online chat' and Thematic Analysis was used to create relevant themes. Whilst this latter study included some interesting ideas (e.g. gaming as instrumental in alleviating negative mood states and MMORPGs as integrated into people's lives), there was little investigation into understanding difficulties for those participants. Some said their

gaming was 'excessive' and they experienced problems, but there was no indication of what that may have comprised. The clinical implications of gaming to excess or to a problematic level were left mostly unconsidered in both studies.

Wood *et al*. (2004) attempted to understand the aspects of gaming that were appealing and attractive to gamers. They found that the most important features to a video game player were: realism (sound, graphics, etc.); multiplayer facilities; rate of play (the faster the better); winning and losing features; and variety of control options. These findings were used to illustrate that there are significant differences between video games and slot machines, yet this data was not used to challenge existing notions of 'addiction', rather it was presented as a separate area of academic enquiry. A review by King, Delfabbro & Griffiths (2010) elaborated on Wood's previous research by connecting five features of video games and how they may influence 'problem video game playing': social features; manipulation and control features; narrative and identity features; reward and punishment feature; and presentation features. Supported mostly with theory and previous research, these features offered a new insight into what makes gaming so appealing to such a wide demographic of the population. Unfortunately, they did not attempt to scrutinise the validity of 'problem video game play' as a concept in its own right.

At the time of writing, work in other fields of 'addiction' was considerably more diverse than in the gaming field. Research in the area of 'behavioural addictions' considered many other factors that could explain difficulties experienced. Blaszynski's Pathways Model of pathological gambling (Blaszczynski & Nower, 2002) proposed that contextual, ecological, personality factors as well as the 'addictive potential' of the activity (i.e. reinforcement schedules) were all potentially responsible for problematic

patterns of play. Orford's theory of Excessive Appetites (Orford, 2001) asserted the importance of preparedness when a new substance or activity is introduced to a culture. It was suggested that 'addiction' could be the reaction of an unsuspecting society rather than a stable entity that was consistent through time and context. West's Prime Theory of addiction (West, 2006) incorporates a rational choice into the equation: the individual chooses based upon costs and benefits to continue or end the activity in question. Whether these decisions could be considered rational is a value judgement but this attributes self-determinism to what was once seen purely as a mental illness. These theories question the usefulness of comprehending gaming 'addiction' in simplistic terms as an impulse-control disorder residing mainly within the individual.

The paucity of research in the field of gaming 'addiction' and the recent interest in its inclusion as a legitimate disorder in the DSM-IV (Block, 2008) were the catalysts for the current study. The principal researcher hoped to answer several questions regarding gaming:

1. What were the experiences of adult console gamers for whom their gaming behaviour had become problematic?
2. What was the appeal of gaming for this sample?
3. What were their thoughts of the concept of 'gaming addiction'?
4. What could their experiences tell us about future intervention for gamers experiencing difficulties?

The aim of the current study was to focus on an overlooked portion of the gaming community (i.e. adult problem gamers), using qualitative methods that prioritised understanding over explanation and could be clinically relevant in the construction of future services.

Method

Design

The current research aimed to *understand* the experiences of gamers for whom their 'hobby' had become problematic and therefore utilized a qualitative design. Interpretative Phenomenological Analysis (IPA) was the chosen method of analysis because it could address the paucity of qualitative literature that existed at the time of writing. IPA is an approach that is, *"able to capture the experiential and qualitative, and which [can]still dialogue with mainstream psychology"*- (Smith, Flowers, & Larkin, 2009, p.4).

An IPA method of analysis was preferable because it examined "*personal meaning and sense-making in a particular context*" (ibid, p.45). Other approaches were less favoured because they concentrated on: how things were said (Discourse Analysis); story structures (Narrative Analysis); or the development of explanatory accounts (Grounded Theory), none of which were pertinent to the current study.

The principal researcher's epistemological standpoint throughout the research process was that of a current gamer and a Social Constructionist. As a gamer, the principal researcher could consider ideas and access a pool of shared language which was thought to expedite the process of rapport building and allow participants to be less defensive during the interviews. A focus on Social Constructionism meant that the principal researcher examined taken-for-granted assumptions about concepts like 'addiction'; the cultural specificity of knowledge and how social process serve to construct knowledge (Burr, 1995). Many of these considerations were not obvious in recent scientific research into gaming, where 'addiction' has been accepted as 'real' or 'true'and operating independently from the social context of gaming.

Participants

The participants for the current study were recruited with the aim of being as homogenous as possible, as suggested by Smith, Flowers & Larkin (2009). The seven participants who met the inclusion criteria were each:

- Male

- Aged over 20 years old

- Gamed for over 30 hours per week

- Were predominately a console gamer and

- Had experienced some difficulty as a result of their gaming within the past 12 months.

Participants who fulfilled these criteria were sought because they were more in keeping with the average gamer (i.e. adults), were a more accessible population (i.e. male), and also because they were from a group that had not been examined in previous literature (i.e. console gamers). Homogeneity was attempted but proved a difficult concept to satisfy; most of the participants engaged with multiple forms of gaming, not restricted to console games and all the participants had gamed for over 30 hours per week, but not consistently.

As recruitment progressed, it was apparent that the experiences of the participants fulfilled sufficient criteria for a label of 'gaming addiction' based upon two separate measures (Lemmens, Valkenburg, & Peter, 2009; Gentile, 2009) at the point in time when they experienced difficulties with their gaming. This meant that those gamers who took part could have been considered by some researchers as 'pathological players'. Other features of the participants are tabulated below in Table 1, including the most hours played per week and the current hours played. The fields in Table 1 were not

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always easy to establish and some were estimated based upon a typical day in order to
provide a guide and add an additional layer to the description of each participant gamer.
Three of the seven participants were in employment (only one full time) and four were
full time students. Four of the seven were in intimate relationships and all were
introduced to gaming at an early age through their parents.

Table 1; Participant Information

Participant	Age	Most hours per week gaming	Current hours (per week)	Preferred genre
1	Late20s	88-105	10-20	Action/ Adventure/ RPG[6]
2	40s	Wouldn't say	Wouldn't say	First Person Shooters (FPS)[7]
3	20s	30 ('or more')	10-20	Action/ Adventure RPG
4	20s	35-56	16	Strategy/ FPS
5	Late 20s	98-112	Didn't say	FPS
6	20s	42	14	Action/Adventure RPG
7	20s	46 approx	46 approx	RPG/ Puzzle

Measures

Semi-structured interviews were carried out, with the participant as the 'experiential
expert' (Smith, Flowers, & Larkin, 2009, p.64) and less as a passive respondent,
therefore acting as the guide through their own experiences. The interview was
structured using a loose framework of questions (Appendix B) which included prompts
to encourage the participant to elaborate on each answer. Questions were not restricted
to only those on the schedule and each interview focussed on allowing each participant
to guide the principal researcher through their own experiences. Each interview was

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[6] An RPG or Role Playing Game is a game where the player controls one or more characters and
engages in 'quests' to progress the story and improve characters attributes.
[7] An FPS or First Person Shooter is a weapon-based combat game played through the first person
perspective

conducted as an independent process from the others and the questions were focussed mainly around participants' experience of gaming, difficulties encountered and their perspectives about wider issues.

Procedure

Initially, the intention was to recruit participants by three methods: online posting to game-related websites; emailing university campuses; and 'word of mouth'. The latter was conducted through messages on social networking sites and speaking with managers in local gaming shops and asking for any interested parties to volunteer or refer others. These approaches did not proceed as initially planned: a link requesting interested parties to volunteer was posted on an online message board, but unfortunately the operators of two such websites deemed this activity as 'advertising', removed the post and invalidated the principal researcher's membership. This meant that recruitment in this way was not possible. The principal researcher also received no response from direct contact with online gaming magazines and staff writers for gaming websites.

A recruitment notice (Appendix C) was sent out through the University of Leicester's Bulletin Board (a weekly email sent to all student enrolled at the University containing links to online news articles and studies created by research students) which was refreshed two more times between August and late November 2010 to gain maximum exposure; and a web log (or blog) written by one of the students containing the same recruitment message. This offered a very high potential readership as both could be accessed by a student population of over 22,000 (Guardian.co.uk, 2010). Also, an email contacting over 600 students was sent by DeMontfort University and a further 60 to their 'gaming society'. This method of recruitment at both local Universities resulted in email contact from 18 people, of whom five participated. Of the 13, who did

not participate, six failed to attend arranged interviews, two did not meet the inclusion criteria and the remaining five did not make further contact to arrange a meeting. Speaking with colleagues and staff who worked in a gaming shop led to the other two participants, who heard about the study through friends and contacted me via email or telephone.

When contact was made with the principal researcher, each participant was emailed an information sheet in order to ensure they had been given all the information pertinent to the study. Each interview was conducted in a relatively private space either in the Clinical Psychology Unit or in the home of the participant (as for interviews 1, 2 & 7). For the latter, the principal researcher provided a colleague details of location and expected duration of stay in order for that colleague to make contact (via mobile) should the duration be exceeded by more than one hour.

When participants were first met, they were asked to once again read the Participant Information Sheet, keep one copy, then sign a declaration to acknowledge that they had read and understood the information (Appendix D). This was a change to the original procedure following the pilot study, where it proved less practical to post it prior to the interview. Each participant's right to withdraw was made clear verbally and on the Information Sheet before proceeding, as were plans for the storage of the data (digital recorder and transcripts).

Each interview was between 40 and 60 minutes in duration and the principal researcher attempted to promote a casual and relaxed atmosphere (through a relaxed demeanour and a more conversational style) in order for the participants to feel at ease. When each interview was completed, the participant had the opportunity to ask any questions regarding the study. Every participant was thoroughly debriefed about the

principal researcher's plans for the data and they were told that they would be sent information about the main findings of the research if they requested it. A £10 online shop voucher was emailed to each participant with a note of thanks (offered as an incentive in the recruitment email).

Four of the studies were transcribed verbatim by the principal researcher and due to time constraints, the other three by a paid administrator who signed a confidentiality agreement. For those interviews that were not transcribed by the principal researcher, each audio recording was played back in conjunction with reading the transcript not only to edit each interview, but also to become more familiar with the content (a transcript extract can be viewed in Appendix E).

The method of analysis was rigorous and following the transcriptions: the interviews were listened to and re-read before early impressions and notes regarding each one were taken. Following this, each interview was scrutinised line-by-line for relevant material which was descriptive, linguistic and conceptual in nature (Smith, Flowers, & Larkin, 2009, pp. 83-90) This process was not only iterative, it also involved a period of acclimatisation. This meant that ideas on the transcripts were recorded in different ways until a procedure that felt most appropriate was discovered. Once the conceptual ideas were noted, these initial themes were placed on sticky post-it notes physically manipulated, an approach preferred by the principal researcher to a computer program. The emerging themes were read and re-read until they began to collect together, sometimes almost naturally, and others through discussion or after several re-visits. They were again scrutinised for fit and appropriateness in order to suggest a broad hierarchy of subordinate and super-ordinate themes. Each process was punctuated by a

break from the analysis (of between a few days to a week) in order to return with a new perspective on the material.

Throughout the process, all the findings were discussed at length with the principal researcher's supervisor. Transcripts with initial thoughts and developing themes were collaboratively scrutinised in order to conduct an "independent audit" (Smith, Flowers, & Larkin, 2009, p. 184) thus strengthening the validity of the evolving interpretations. The process was conducted several times and by discussing findings with a non-gamer, it was possible for the principal researcher to challenge the analytic process and continue to be curious about any suggested themes. Regular supervision continued throughout the research project, encouraging both reflexivity and galvanising the analysis as an iterative process. The final themes that were established and the implications of them will now be considered.

Results

The results section considers a process model that describes problematic gaming and a detailed presentation of the super-ordinate and subordinate themes generated from the analysis of the transcripts. Six main super-ordinate themes and over 30 subordinate ones were generated (Figure 1) which were not independent of or separate to other themes as there was considerable overlap between them. Labelling themes in this way allowed the main findings to be discussed with the brevity necessary for a piece of scientific research. These final themes were interpretative and considered implications for clinical practice and were: *love of gaming*, *illusion*, *goal-directed behaviour*, "*game crazy*", *derision* and *self-help*. Each theme is examined in turn in the analysis.

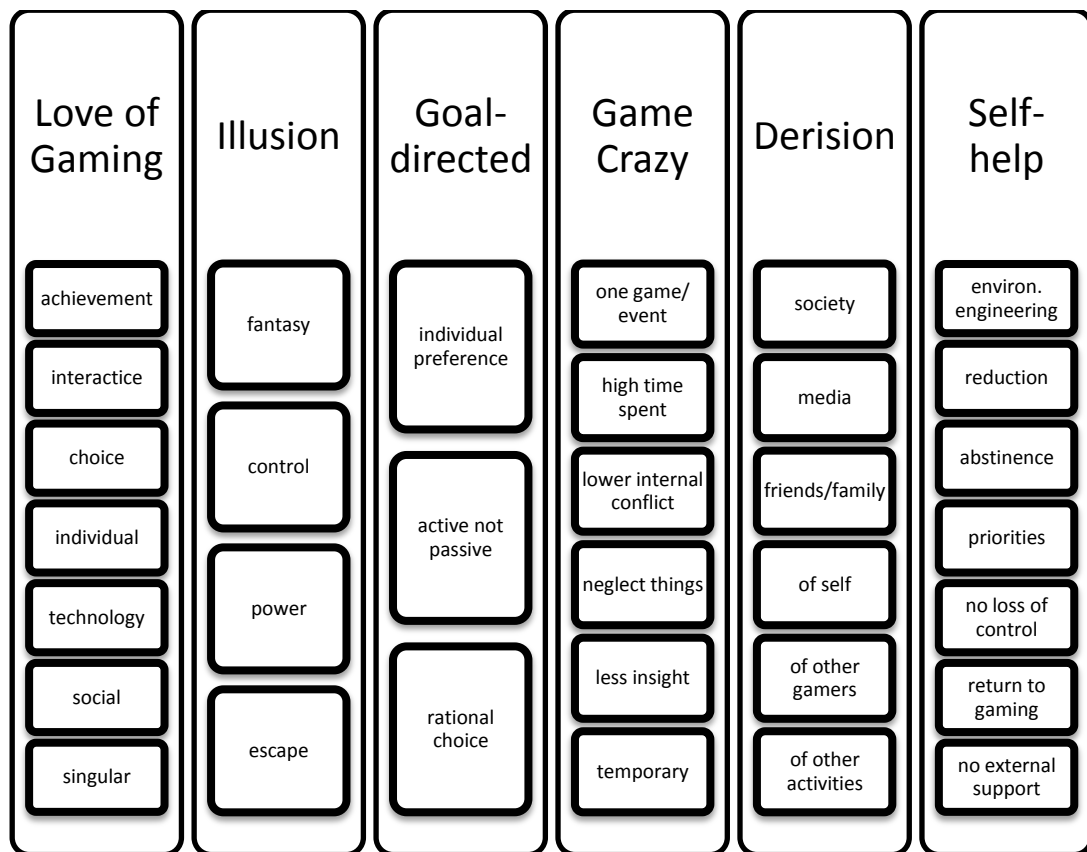| Love of Gaming	Illusion	Goal-directed	Game Crazy	Derision	Self-help
achievement	fantasy	individual preference	one game/ event	society	environ. engineering
interactice	control	active not passive	high time spent	media	reduction
choice	power	rational choice	lower internal conflict	friends/family	abstinence
individual	escape		neglect things	of self	priorities
technology			less insight	of other gamers	no loss of control
social			temporary	of other activities	return to gaming
singular					no external support

Figure 1: Subordinate and Super-ordinate Themes

The initial themes were used to construct a process model of how individuals may experience their own gaming problems (Figure 2) but this process was a purely descriptive one. The model followed a fairly straightforward path and suggested one way of understanding the difficulties experienced by adult console gamers. Initially, each gamer demonstrated a preference for a specific genre of game (shooters, RPGs,etc.) or gaming platform (Xbox, Playstation, Nintendo) then a specific event, game or goal came to the attention of the gamer. This could include an expansion for an existing title or a self-generated goal such a beating one's own completion time. This combination of preference and product availability led to an increase in gameplay, a neglect of other duties and greater immersion in the game itself culminating in a state described as 'game crazy'. External conflict such as relationship difficulties or employment problems combined with internal conflict causing a sense of dissonance led to each gamer addressing their own gaming through reduction or management of their play. These resources are described in more detail below.
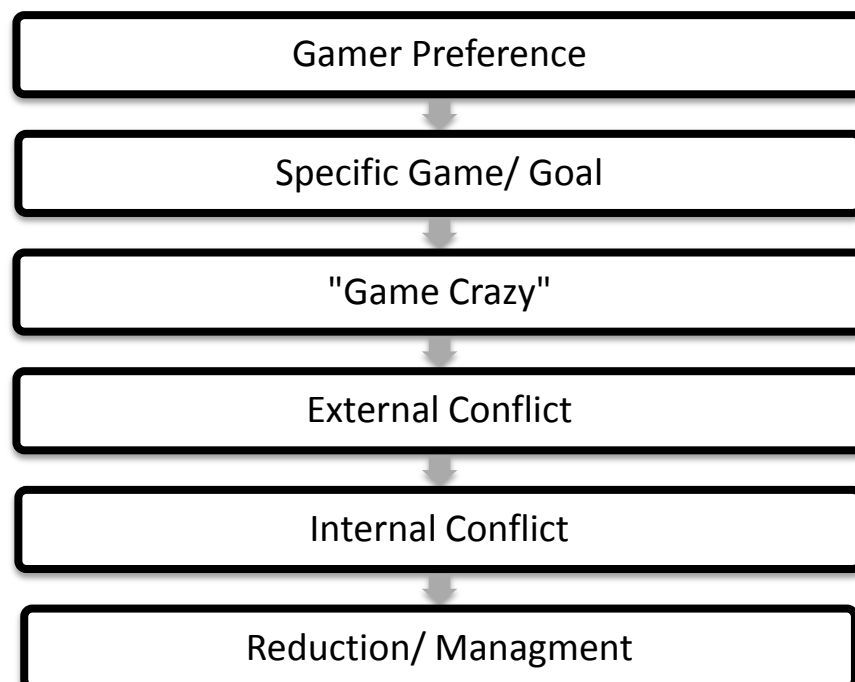
Gamer Preference
↓
Specific Game/ Goal
↓
"Game Crazy"
↓
External Conflict
↓
Internal Conflict
↓
Reduction/ Managment

Figure 2: Process of Problematic Gaming

Love of gaming not 'salience'

Gaming was introduced to the participants when they were children, typically through their parents and they described their initial experiences of gaming as "mind blowing" (interview #5, p. 2) and "entertainment of course!" (interview #6, p. 4). This initial attraction was slightly different for each participant but throughout the interviews, it became clear that gaming was an activity they still enjoyed but that it was now "probably a bit more...grown up" (Interview #2, p.2).

This was in contradiction to the concept of gaming 'addiction', where often the criteria include a need to play despite adverse consequences or to alleviate a withdrawal state. These 'adverse consequences' varied according to the values and perception of each participant and it became clear that what may appear negative to others (spending summer days indoors gaming for long periods) was looked upon with fondness by the participants:

> *"Modern Warfare pretty much ruined summer for me (laughs)"* -
> Interview #5, p.9

It was also clear that, despite the difficulties each participant experienced, six of the seven still planned to game in the future:

> *"I think it's just a good retirement to look forward to...as long as I can still move my thumbs I'll be alright…I think I'll be doing it forever."*
>   -interview #5, p.53

For some, the competition proved enjoyable, *"Winning's a good feeling"* (-interview #5, p.1)*,* and like TV and movies, the storyline and narrative were gratifying for others, *"I just really like games with a good storyline"* (-interview #3, p.9). Pleasure was

derived from completing games either entirely or in a record time, not unlike physical exercise for some or renovating classic cars for others. For one of the participants, gaming was an enjoyable, cerebral and social activity:

> *"If they're good players and it all comes together, the strategy between you and your friend…you're like "oh right, that was, that was pretty good" and sometimes you have these brilliant moments..."* -interview #4, p.23

Another appeal of gaming was its connection to technology. The participants in the current study were all enthusiastic about technology and saw that as setting gaming apart from other activities:

> *"get into the technologies... instead of books are always the same, y'know ... read the same kind of book and same type of pages, games change (sic)"* -interview #6, p.41

But also evolving alongside them:

> *"It's quite exciting how visually technology is also going forward with gaming. Now we've got HD. Visually gaming is stunning now"* -interview #5, p.11

One of the appeals of gaming for most of the participants was the integration of the gaming activity with the individual's social life. This was the case for most of the participants. The manner in which participants engaged socially with gaming varied significantly, but is broken down below in Table 2.

Table 2 Social Aspects of Gaming

	Online Multiplayer	Online Chat	Online leaderboards	Offline Multiplayer	Other modes of play	None
Interview #1	x		x			
Interview #2	x	x				
Interview #3				x		
Interview #4	x	x	x		x	
Interview #5	x	x	x		x	
Interview #6						x
Interview #7						x

Different gamers integrated their lives to varying degrees with their gaming activity, which was influenced by their gaming preference. The use of online social features was a marker of First Person Shooters (FPSs) and strategy games whereas action/adventure and role-playing games (RPGs) incorporated fewer social functions. This socialising was seen as sometimes totally separate from gaming:

> *"We're just chatting about random stuff really. Erm, I also talk to him about my private life and my girlfriend ... I can have private conversations with him because he's someone remote."* -interview #4, p.11

Or a way of meeting up with friends:

> *"we all-we all know each other from...real life...we're all proper friends...but we all meet and play on the Xbox together...maybe in the same way erm my dad always use-always used to go to the pub in the*

> *evenings to go and see friends... the game's also there as an added sort*
>
> *of experience."*   -interview #5, p.13

Or to brag to other gamers:

> *"it's like a prestige thing isn't it...if I know that someone's seen what*
>
> *I've done something on the console game and y'know they can look and*
>
> *think "oh, he's done that, wow" sort of thing"*   -interview #1, p.31

For the remaining three participants who were not keen on this integration, it was made clear that that in itself was part of the appeal:

> *"When I can play it by myself and I can experience the story and do*
>
> *things in that for myself, I...get really engaged,"*   -interview #7, p.27

From the interviews, it became clear that there were aspects of gaming that participants were drawn to that were not unlike other 'hobbies' (e.g. sports, TV, reading, puzzles, etc) and yet other 'hobbies' fell short of fully describing what gaming represented. It appeared from the interviews that gaming offered enjoyment not only though social and technological aspects but also from two other areas, broadly defined as: *illusion* and *goals*.

Illusion not 'escape'

There was something about gaming that seemed to fulfil a desire for these participants to be something else, go somewhere else and do things that were impossible in reality. The fantasy of a rich narrative in a story was described as more than in other mediums (such as film) because there was the promise of interaction and control which made it, *"like a movie but I'm controlling it and playing it."* (interview #7, p.7) Despite the technology behind a games' design becoming increasingly sophisticated, the game

itself still only allows a certain number of possible eventualities. Games without a strong narrative still offered the same sense of control, challenge and then achievement, all through the technical expertise of the designers. Whilst these things may appear somewhat 'real', control, participation and interaction were all very sophisticated illusions.

As described by one participant, gaming offered a fantasy which was more desirable than life outside the game environment:

> *"It's just that I want to be in the game sometimes ...I want to play this, I want to be there, I want to be the character [mmm] so I just play that game and just gets more and more interesting to you [mmm] so you get more addicted to that character than your own self."* –interview #6

The prospect of being 'in' a game is impossible, but the way the participant offered his perspective, it seemed that there was something more than just enjoyment that was derived from his gaming experience. The sense of contribution in these games, the sense of control and choice could well be connected to the almost God-like omnipotence that gaming promises, *"you get to do things in them that you wouldn't do in real life"* (interview #3, p.4) The illusion that was available through gaming seemed to offer the power, respect, excitement and control that perhaps was not available in the participants lives or through any other activity. It was important to distinguish this sense of illusion from the word 'escape' so often used in 'addiction' research. The latter is a positive move towards a pleasurable activity and the former infers a desire to avoid unpleasant real life circumstances. None of the participants in the current study, described gaming as a way of escaping, more as a engagement with something pleasurable

There are seemingly no other activities that offer simultaneously all of the rewards of gaming, which could explain why so many millions of people are so engaged with the activity. It could also explain why it was such an immersive experience, why time passing could be misjudged by the participants and why external events became less meaningful:

> *"Time does tend to speed up... there's nothing else to an extent, there's almost nothing else, maybe anything else is a distraction ...almost like any outside input would be an annoyance s-something to sort of y'know tolerate and like I'd focus on the game again"*　　interview #1, p. 14

The promise of power and the sense of competency and achievement mediated through fantasy all added to the appeal of gaming and this was applicable to all of the current participants in one form or another. It is the integration of goals which added further evidence that gaming amongst these adult console gamers was an incredibly rewarding and individual experience.

Goal-directed behaviour

Within gaming among the participants, there was a sense of goal-directed play. These goals were all different and specific for each individual and are illustrated below in Table 3 and suggested a sense of play for a purpose..

Table 3: Goals for Each Participant

Interview #	Goals
1	Accumulation of in-game abilities/ recognition/respect
2	Competitive play/ socialising
3	Storyline
4	Intellectual

5	Competitive play/ socialising/ achievements
6	Storyline
7	Story completion within time limit/ intellectual

Goals could be self-generated (such as completing a game or beating a personal high score) or they could be generated through the games' design. Rewards are delivered externally or internally through the skill and competence of the player which is unlike gambling, where success is comprised almost entirely of random chance. On one console, these goals are called 'achievements' and provide a numerical reward for each specific task completed. This score can be publicly viewed but as described by one participant, these achievements provided much more than just a number;

> *"I suppose it adds hours on to the game [mmm mmm] and it hooks you*
>
> *in a bit more…you find yourself playing games that you don't really*
>
> *wanna be playing anymore just to get another ten points"* –interview
>
> #1, p.30-31

There was a sense throughout each interview, that a large part of the appeal of gaming was derived from external recognition or internal acknowledgement at achieving self-generated goals. Those gamers who utilised multiplayer services would hail the benefits of accumulating power in the game world through new weapons, 'levelling up'[8] or beating others in a match or tournament. Those who played mainly offline referred less to this and more to a sense of achievement through beating a game within a certain period of time, completing the story or earning 'achievements' through skill, story progression and defeating particular challenges. For some, the value was in

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[8] Levelling up where a character achieves a new stage of development through winning battles, discovering treasure, etc. This results in better attributes in order to move on to increasingly challenging objectives.

the difficulty associated with any one goal, not in the value of the reward provided by the game:

> *"I'm not bothered how much the achievement is, it's more about what the achievement is itself. Cos for me it's to show off to other people you've done it and that's what the achievement is more than anything. That's what drives me"* -Interview #5p.36

This goal-driven behaviour also emphasised the sense of participation that was connected to the activity of gaming. Smoking tobacco or drinking alcohol may be an activity where individuals feel they are in control, but the sense of goal-setting per se is not as common. In this sense, gaming could be likened to physical exercise regimes with the important difference that, whilst goal-setting is self-generated, unlike exercise, it is also the design of the game that provides the rewards.

All the participants made clear their position about gaming as a goal-driven interactive activity by describing it as such and by polarising it against watching television:

> *"A lot of people just sit and stare at the TV for a lot of the time and... there's no interaction with that,"* -interview #2, p.10

> *"I'd rather be playing on the Xbox than watching Hollyoaks and Coronation Street or something and then your brain really is rotting away"* -interview #5, p.22

These extracts demonstrate how strongly the participants simultaneously defended their own activity and derided possibly the most popular pastime in the UK. Each participant attacked watching television as a hobby as it seemed to represent the activity

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espoused by the very people who derided them for gaming (namely, their parents, friends or loved ones). Television watching also was an activity where the only goal is to be a passive recipient of stimuli, something these participants did not engage with.

Despite the enjoyment, the fantasy and the active nature of gaming, there has been considerable media attention regarding it as an 'addictive' activity. The question of what happens when these goals come in to conflict with external responsibilities, relationships or the participants' internal sense of appropriateness is the next area of consideration.

Game crazy not 'addiction'

Whether it is in the form of a midnight launch, additional content of an existing game or simply the release of a new title, what seemed clear among the current participants was that the game was the catalyst for an increase in play time. 'Game crazy' was defined by a participant:

> *"play especially this one game a lot more...neglect other things erm but*
>
> *then it loses interest and I do other things again"* -interview #4, p.31

This idea seemed to fit with the other participants in the current interviews. All of them experienced times when they were heavily engaged with one specific game, goal or event to the detriment (in varying degrees) of other things in their lives. The most salient points were: that it was provoked by one thing; it had negative consequences in their lives; and it was temporary.

The significance of the specific game appeared so great that the anticipation of its arrival was sufficient to disrupt the life of one of the participants:

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"I can remember being so excited the night before that I was having

trouble sleeping ... so you wake up after about three or four hours sleep

and be awake for the postman [right] and I'd just be sitting there

waiting... I'd have other stuff ... I should be doing but I'd be sitting there

... wasting time until it arrived" -interview #1, p.13

During the period of time described as 'game crazy', each participant described a specific experience tied to one particular game. One in particular described a sense not unlike nostalgia when describing a particularly challenging time:

"Like you know I've finished Halo 3 completely...It's like a curse lifted. I

don't need this game anymore. It's over; you know what I mean but

probably in a fond sort of way. It's like, I've done. Finally it's done."

                   -interview #, p.37

For this participant, it may appear to other people in his life as though his pursuit of this reward was disproportionate and to the detriment of other things. He was later very specific about his own sense of rules:

"I may try and push the boundaries but I'll never do myself over to the

point where oh I'm just going to stay up all night and do this despite

having work" -interview #5, p.40

This preference for a specific game emerged from the individual preferences of each gamer. One of the key findings of the current study was that the participants did not play indiscriminately; they were very selective about the genre, platform and means of engagement (multiplayer or single player). This meant that these gamers rationally chose their preferred activity:

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"when a, when a game first comes out, I play it, like, most nights [ok]

and then as it...sort of, after you hammered it for so long and kind

of..You don't sort of play it so much" -interview #2, p.7

Participants were also quite selective about what they did not play. This finding certainly called into question the idea that games and games design is the main catalyst for problematic gaming behaviour and it demonstrates that these adult console gamers were able to make rational choices about their own gaming behaviour, despite being problem gamers. Whether these 'rational' choices were wise was not important for the current thesis, for that would be a value judgement, but at that time, for that person, their choice of gaming was rational and informed.

It is also important to note that when the participants were deeply engaged with this particular game or goal, that there was a fundamental separation from their own responsibilities: either the consequences were minimised, ignored completely or rationalised, or there was a sense that these things were insignificant. During this 'game crazy' period there was no sense of internal conflict and for as long as external conflict was not present, this was how each individual continued to play. Game after game, achievement after achievement, for as long as there were no consequences, these gamers enjoyed the experiences of feeling immersed in the gaming world:

"I've...sat in front of a computer for twenty-four hours, erm, for my

chance to get this specific item and, y'know, when you finally get it,

y'know, you feel, I suppose you feel elated for a while and that wears off

and you're thinking about what you're gonna do next.."   -interview

#1, p.29

One of the differences between console games and MMORPGs on a PC is that many console games have an end point and the online multiplayer aspects involve the repetition of matches, tournaments or challenges. It is important to make this distinction here because whilst console gamers may go through a 'game crazy' period until their goal has been achieved, games like *World of Warcraft* continue indefinitely and goals are more focussed on character improvement and item acquisition. For most of the current participants MMORPGs did not appeal, even though they could all have been classed as 'gaming addicts' during certain periods in their lives, providing further evidence to contradict the concept of a profile of a gaming 'addict'.

The idea of gaming 'addiction' was also rejected by all of the participants. When the language of addiction was used, the principal researcher was quickly corrected:

> *"I don't look at it at all like a buzz [ok]...it's good when you're on a roll*
>
> *[ok] but...I don't really get a buzz out of it."* -interview #2, p. 20

This one participant's comment was a reflection of the attitudes (if not the words) of all the participants, perhaps in order to minimise the seriousness of problems they had experienced. This may have been connected to the theme of *derision* which will now be discussed.

Derision

Despite all the celebration of gaming as an engaging activity, there seemed to be an ongoing conflict that resided internally to the person. All of the current participants were very keen to mock their own activity as "*rather pointless"* (interview #4, p.10) and when asked about potentially helpful treatments for other gamers who may have experienced 'problems', some suggestions were intentionally disparaging:

"A ball of wool and some knitting sticks"   -interview #2, p.24 or;

"I'd advise him to get a girl first"   -interview #6, p.32.

Describing treatment in this way did two things: in the first extract above, that gaming 'addiction' is a ridiculous prospect, almost as though the 'ball of wool' was the most casual throw away suggestion that could be made. The second extract above gave a sense of poor prioritising, that gamers need to leave the gaming world and engage with 'real' (in the sense of physical) relationships in order to be 'better'. This sentiment was echoed on several occasions throughout the interviews:

" I never would have thought about going to a doctor erm, cos I think it
all comes down to, you'd just be laughed out"   -interview #1, p. 34

This gave the principal researcher pause: What was it that made this so laughable and why would such an activity expect to receive such derision? It seemed as though gaming was driven underground somehow in the same way as a sub-culture would have a very exclusive membership and onlookers would be confused, excluded and resentful. This need to mock something in which each participant engaged for up to 80 hours per week appeared incongruent, but when explored, the responsibility was attributed (both directly and indirectly) to wider society. For some, the media were responsible:

"It's not an acceptable pastime for a grown man I suppose, y'know
[mmm mmm] you're called a 'man child' or whatever"   -interview
#1, p.20

"It seems like people go out of their way to put the blame on games. Like
it'll just be mentioned if someone owned a games console [Yeah, yeah]

> *It's like well I guess they owned books as well…[Yeah] But they don't*
>
> *point this out"*   -interview #7, p.37

For others it was those in power:

> *"The people who make the laws nowadays erm they're still a generation*
>
> *that didn't grow up with computers.[Right] …they think oh "that's weird,*
>
> *that's confusing, that's boring""*   -interview #4, p. 39

Significant others in their life made gaming a taboo subject and for one of the participants, an embarrassment, and "*a geeky sort of habit*" (interview #1, p.17). For this participant, a lot of the conflict was caused by comments from a loved one and there was a sense that when gaming was a problem, this significant other was a part of his gaming life. It seemed that in no small part, the lack of acceptance or understanding of gaming in society has forced gaming to be driven underground, adding to external perceptions of it as hidden or subversive activity.

> *"You don't want to bring it up … they're gonna think "he plays computer*
>
> *games, what a sad bastard" …they'll be talking about some great thing*
>
> *that happened on the tv…and you wanna tell them something great you*
>
> *did on a computer game … they're just gonna think "oh er, my son plays*
>
> *computer games and he's six, what are you doing at twenty-nine doing*
>
> *it?""*   -interview #1, p. 25-6

Comments such as these illustrate how secretive gaming had become for some participants, despite its popularity and how a lack of acceptance has resulted in non-gamers being unaware about how to support others to game responsibly.

This highly rewarding activity resulted in play considered as 'game crazy' and neglected responsibilities and negative appraisal from others encouraged the current participants to address their problem gaming behaviour. How that was accomplished will now be considered.

Self-help not intervention

Despite being problem gamers by their own and others' definitions, the current participants addressed their difficulties in ways that provide a counter-argument to the assertion that gaming 'addiction' could be an impulse control problem. Each gamer was able to regulate his own behaviour following a conflict. This conflict invariably appeared in sequence: the external conflict first (relationship, work or sleep difficulties) followed by an internal conflict (guilt, fear, and desire to change). Without the sense of internal conflict, no action was taken; it was only when each gamer became aware of the impact of their behaviour that they addressed their difficulties. This self-help took on several forms, but all 'interventions' were self-generated and behavioural, typically about reducing time spent and engineering the environment to prevent gaming:

> *"When my exams was getting very near I got scared so I just had to*
> *make a routine, had to quit that so… but it took me time, it took me*
> *around three months.."*   -interview #6, p.6

> *"When we split up...it knocked me for six at the time and I was like*
> *"right, that's it...scrap the Xbox...stop smoking [yeah] and I-I stopped*
> *for probably three months...I wouldn't say I was wanting to play on*
> *either er have either of them [hmmm mmm] erm...because of what else I*
> *was going through at the time..erm...it's sort of all just took a back*
> *burner"*   -interview #2, p.21-2

> *"My work did suffer so I had to do a couple of re-sits [oh, ok] yeah, which-which is one of the big factors in doing it because I thought...I can't deal with both, one of them's gonna have to go, I haven't paid three thousand pounds for my er (laughs) for my Xbox"* -interview #3, p.16

What all of these statements illustrate is the conflict which was the catalyst for the participant to reduce their gaming activity, the thinking which pushed forward the action but most importantly, the lack of difficulty reported in implementing change. For each participant, there was no reported loss of control one would expect to see in a diagnosable 'impulse-control' disorder and there was no withdrawal syndrome that would be expected in an 'addiction'. These 'problem' gamers were able to successfully change their gaming behaviour and resolve their internal and external conflicts. To a large extent, these adult participants were able to prioritise the activities in their lives according to the demands placed upon them and yet maintained a relationship with gaming throughout. For some of the participants the aim was to continue gaming in roughly the same way and for 'significant others' to adapt, thereby addressing the conflict. Balance was achieved by one participant in creative means (regardless of how inappropriate this may appear to others) and when asked what would happen if his girlfriend refused to allow him to game, he commented,

> *"She's got ear plugs so it doesn't wake her up, so that's alright."* -interview #5, p.40

Salience of gaming ebbed and flowed throughout their lives, depending on what else was important to them, be it examinations, relationships or work and there were no reported period of ongoing increased play (or tolerance), difficulties when away from

gaming ('withdrawal') or loss of control leading to gaming at similar or higher levels ('relapse and reinstatement').

Summary

From the interviews conducted and the themes derived, gaming could be said to be a singular activity that provides ongoing appeal and enjoyment by catering to numerous goals simultaneously in a convenient and accessible fashion. Despite each participant having idiosyncratic motives for play, the sense of achievement and pleasure seemed key. It was therefore clear that there was no one 'gamer profile 'and using the term 'addiction' or 'dependency' in its traditional form, was not appropriate.

The current participant gamers were not passive recipients of stimuli; rather their interactive engagement was what set gaming apart from many other possible activities they discussed. Through this individual engagement, each participant sought out games which would best satisfy their own personal sense of appeal. Thus gaming was also a discriminating activity. This ability to select preferable games or events amongst the current sample was also connected to their ability to discern when and how problems with their gaming may have occurred, a self-awareness which may run contrary to the idea that 'gaming addiction' could be classed as an 'impulse-control' disorder or one of a simple 'loss of control'.

Finally, each participant problem gamer was able to 'self-help'. Through means of their own design, each adult gamer was able to stop, much in line with Orford's (2001) theory of 'Excessive Appetites'. This resolution was conducted with no external intervention and without any professional techniques. Time management, temporarily suspending play, re-prioritisation and environmental engineering were all effective for these gamers. It was clear too that if pervasive problems did exist and a service was

available, that none of these participants would have engaged with them and this is in

no small part due to the stigma surrounding gaming. Implications of these finding are

examined in the Discussion section below.

Discussion

The aims of the current study were to investigate the experiences of adult console gamers who had encountered some difficulties as a result of their gaming behaviour. This was to add to the scarcity of qualitative research, focus on a sample more representative of the average gamer (i.e. adult, male, console gamer), and also to examine the clinical implications of understanding the perspectives of the gamers themselves. IPA was used to examine the participants' accounts of the concept of their experiences, 'gaming addiction' and the usefulness of clinical interventions. Seven male participants were involved in this study, all of whom were console gamers, over 20 years old and had experienced some kind of difficulty with their gaming behaviour. According to two instruments that purported to measure 'gaming addiction' (Gentile, 2009; Lemmens, Valkenburg, & Peter, 2009) each one of the participants fulfilled sufficient criteria to have been classed as a 'pathological player'.

For each participant, their understanding of 'problem' was very different, but the course it took was very similar, which was illustrated for mostly descriptive purposes (figure 1) Interviews were transcribed and analysed for super-ordinate and subordinate themes that aided the understanding of their collective experiences. Six themes were suggested regarding what gaming and gaming difficulties meant to the participants which included: *love of gaming*, *illusion*, *goal-directed behaviour*, *'game crazy'*, *derision* and *self-help*.

The current findings were contrary in many ways to that of previous literature, where a specific *type* of person has been identified as being vulnerable to 'problems' with their gaming behaviour. All of the current participants met at least half of the criteria for gaming necessary for a label of 'pathological video game use' suggested by

Gentile (2009)[9], but this is quite a reductionist way of understanding gaming behaviour. Problems for the participants occurred in relation to one game or one event, which had a finite duration and resulted in higher game time and neglect of responsibilities. Gaming difficulties for this group were not indiscriminate but specific and the means by which they dealt with their problems were addressed independently of the support of others.

The single game or experience has been mostly overlooked in current literature and the implications of this finding are considerable. Firstly, this would explain false positive findings for a diagnosis of 'gaming addiction' if low frequency of reported difficulties is ever used in the criteria (as it was illustrated in the studies by Lemmens, Valkenburg, & Peter (2009) and Gentile (2009)). Secondly, it would also suggest that time spent gaming is a truly *in*sufficient means of understanding gaming problems: time playing would have to be dictated to a degree by the specific title or goal, thus contradicting the assumption that gaming behaviour was simply static and consistent week on week. Thirdly, it emphasises how personal choice is not lost: gamers still discriminate and choose their activity, therefore not evidencing impulse control problems in the categorisation of any difficulties. What is called into question is the usefulness of understanding certain types of gaming behaviour as an 'addiction'. This was evidenced by the participants in the current study.

The implications of the 'illusion' of gaming may not be as applicable to the adult population, for despite the appeal, all of the sample group used their own 'internal monitor' to judge their own level of engagement contingent upon the demands of their everyday life (such as work, relationships, etc). The internal conflict they experienced was sufficient for them to put in steps to change their gaming behaviour. Children are unlikely to have the same internal controls in place as adults and the appeal of gaming

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[9] Based upon frequency of adverse symptoms as rated 'sometimes' or above.

may be more powerful for children who have fewer responsibilities in life to attend to. This could highlight the need for external support during times where gaming could become more problematic e.g. time limits, enforced alternative activities, etc.

The conflict experienced within the current participants was often attributed by them to the society that determines the acceptability of gaming as a leisure activity. There are implications here about how pathology is constructed around gaming, based upon the degree of its acceptability. Each participant gamer spoke about gaming in a very positive light, but would also deride it as an activity, suggesting that there existed an internal dissonance, that they held two conflicting ideas simultaneously. To resolve this, it could be hypothesised that the participants may have derided gaming rather than admit that it was meaningful, in order to feel more socially acceptable and thus reduce their internal conflict. Six of the participants suggested external forces such as society, the media, and family members criticised gaming as an activity. This could, in part have caused the dissonance that drove gaming underground and resulted in gamers hiding or minimising the meaning behind it. Only one of the current participants was proud of being a gamer and coincidentally, he was the only participant who had fully integrated gaming into his life and did not perceive his past gaming experiences as problematic.

It is possible that as the current generation ages, gaming will become a more accepted activity because they will have grown up with the technology and therefore, with gaming. With acceptance and a more public and positive discourse about video games, the activity should become more normalised. This would help individuals and healthcare clinicians to distinguish between gaming problems as a value judgment imposed by others and cases where the individual subjectively perceives a problem.

As illustrated by Griffiths (2010), the life of the individual gamer could greatly affect the way that their own gaming behaviour could be appraised: either as a 'healthy enthusiasm' where gaming is a pleasurable activity with no adverse side effects (as for interviewee 5); or where gaming could be problematic and has been a poor fit with other responsibilities (for interviewees 1 and 4). Problematic gaming could then be seen as the interrelationship of individual preference, specific game or activity and contextual demands (Fig 3).
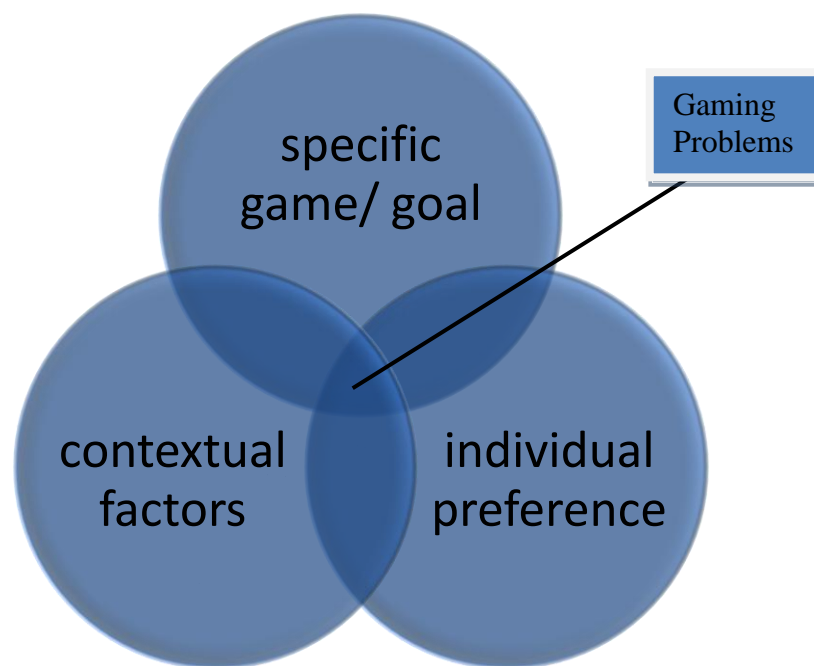

Figure 1: Model of Gaming Problems

Another finding of the current research was the singular nature of gaming as an activity. Whilst comparisons were drawn with other activities, there was no one other pastime that truly encapsulated all the appeal, challenge and excitement that gaming could offer. Gaming was clearly a most rewarding activity and was described as such by all participants even as they spoke retrospectively about the problems they had experienced. This does not fit with the concept of 'addiction' where withdrawal, cravings, 'relapse and reinstatement' are common screening criteria.

The idea that there is a personality subtype which could be used to identify people at-risk of 'gaming addiction' (Peters & Malesky, 2008) is also at odds with the current findings. To use the term 'gamer' so broadly in the literature is now deemed inappropriate, for the game-playing population goes beyond one 'type' of person. From the current evidence, it can be said with confidence that people who engage in gaming are drawn to it for a multitude of different reasons each appealing to their own sense of enjoyment. The diversity within this small sample alone suggests that an at-risk personality type is a less useful way of understanding gamers who may experience difficulties.

Clinical implications

The first clinical implication of this study was the inappropriateness of the term 'gaming addiction'. The current sample, despite sufficiently fulfilling Lemmens, Valkenburg, & Peter's (2009) and Gentile's (2009) criteria for 'addicts', did not display key elements such as 'relapse' or 'loss of control'. The current sample of 'problem' gamers returned to gaming when a certain title or goal piqued their interest, not because they were unable to resist. Pathology regarding gaming needs to be evidenced much more thoroughly; using other means of conceptualisation than quantitative polythetic instruments adapted from 'pathological gambling' or substance dependency criteria.

Previous studies suggested that Family Therapy (Young, 2009), Cognitive Behaviour Therapy and Motivational Interviewing (Griffiths & Meredith, 2009) were effective interventions for problematic gaming behaviour, but the current findings question the suitability of such suggestions of psychotherapeutic approaches. Abstinence, the typical method employed to 'treat' other addictions is not appropriate or achievable in current society, as anyone who owns a modern mobile phone or PC can

engage with gaming. As the current adult participant gamers pointed out, reduction in time through time management, environmental engineering and redressing their priorities were all appropriate and effective methods of game play reduction. These methods were also triggered by a combination of external and internal conflicts. For the current sample, the language, the treatments and the diagnosis of 'addiction' make little sense for their own experiences of problem gaming. For children however, who have fewer demands (thus less internal conflict from guilt, fear, etc.), it would be the responsibility of the significant adult to introduce measures to curb their level of engagement for example, time limitations and types of games allowed.

Knowledge of the gaming culture among most senior healthcare professionals and academics is assumed to be limited, as their sources of information will necessarily be the media or the scientific literature, both of which are unquestioning in their acceptance of gaming as an addiction and have limited understanding of mental health issues. In order to support future clinical work for those being referred to services with gaming behaviour difficulties, a much wider knowledge about gaming needs to be established about adults, children, PC and console gamers and also the circumstances under which gaming has become problematic. In order to improve the 'cultural competency' of each clinician, a brief guide should be constructed in order to provide an accessible means for clinicians to broaden their familiarity with the activity, understand the appeal a little more and perhaps gain an insight into where or how problems may occur. It could also inform clinicians about the defensive position adult gamers may take on (in relation to the theme of 'derision') when asked about their gaming behaviour which could be a barrier to building rapport in a therapeutic setting.

The current study has also demonstrated the wealth of data that can be generated from interviews and a qualitative methodology, which would not be uncovered through a survey or questionnaire that employs a set nosology of terms that may or may not reflect an individual's experiences. Like the clinical interview, a qualitative methodology allows a deeper understanding of the individual's circumstances without simply allocating a diagnostic label that implies a static trait.

One of the key implications of the current study was that it would be inappropriate to consider gaming 'addiction' a mental health disorder. It is not the contention of the current study that gaming may not be problematic at times, but it may be more appropriate to conceptualise it as a temporary effect of poor prioritising, time management and conflict in response to a specific game or goal. It is possible that someone who is socially anxious may take solace in the video game environment, or those who have anger management problems find that gaming is an appropriate means of releasing their tension, but implying gaming as the cause of these challenges would mean attributing gaming difficulties with a reliable and consistent course. This is not to ignore or rule out the impact of gaming as a hobby, but to consider its contribution when understanding someone's mental health difficulties rather than use it to explain them.

The current study showed that gaming was impermanent and shifted according to the specific gaming activity and as such, incompatible with the criteria of 'behavioural addiction'. For adult console gamers that do experience difficulties with their gaming behaviour and seek help, strategies including effective time management, environmental engineering, managing internal conflict and game play reduction could all prove effective. This is without the necessity for more specialist therapeutic or

pharmacological interventions and could be implemented as a self-help program available online. Websites like this already exist (llttf.com, 2011) and could easily be accessed by adult gamers who are considered more technologically competent (Wood, Griffiths, & Eatough, 2004).

Limitations

There were several limitations with the current study worth discussing. The most significant of them was regarding the sample: it was self-selecting through online recruitment and referral and anyone agreeing to participate would have been comfortable in doing so. As such, the findings about self-help when problems occur could have been only relevant to this group of people. There was a larger question regarding the nature of gaming behaviour for all those who did not come forward for the study, which included the 13 people who expressed an interest but did not make further contact or failed to show up for an arranged appointment. This could be attributable to the use of the word 'problem' in the recruitment email. Asking people to volunteer for an interview to speak about difficulties that they experienced with a 'hobby' was undoubtedly off putting.

The size of the sample (n = 7) was appropriate for an IPA study (Smith, Flowers, & Larkin, 2009), but despite this, the transferability of these findings to broader groups (such as children or MMORPG gamers) could not reasonably be attempted. The purpose of the current study was to gain a greater understanding of adult male console gamers perhaps in order to question dogmatic knowledge rather than to replace it.

The process of analysis was iterative and collaborative, however, it remains the predominate analysis of one researcher with a specific set of values regarding gaming and gaming 'addiction'. The principal researcher was a gamer and the research was in

part a reaction to the limited representation of gamers as a culture and the attribution of 'addiction' as an appropriate way of understanding gaming 'excess'. This not only affected the analysis but also the conceptualisation of the entire research project; all these aspects need to be considered when appraising this piece of work.

It is also important to be mindful of the themes and how they were generated. One of the key themes was *derision*, which at first glance appeared quite straightforward. It was important to note that it was not possible to infer that this derision took place for only one reason (that gaming is an unacceptable activity), but that there may be many. One possible explanation was that the participants may not have been used to talking about gaming in such a thorough manner with another person ,and that self-deprecation was a way to not appear foolish or feel exposed when speaking about an activity typically associated with children.

Issues that require further clarification & future work

Children might be an appropriate target for any future research on clinical interventions and service provision, on the grounds that adults can either address their own difficulties without external support, or because they would have capacity to consent and therefore, to refuse any such intervention. It would be important to establish a more in-depth understanding about children and young people as gamers; what they are attracted to, what happens when gaming becomes a problem, for whom it is a problem, what would help under those circumstances, etc. It was the contention of the principal researcher that the use of the existing quantitative instruments of assessment were unsuitable to learn more about gamers and in order to clarify the suitability of any intervention, it is the experiences of people and the language that they use that are most pertinent.

Future work also needs to address the methodological issues present in this study by recruiting a sample that is currently experiencing difficulties. Whilst these findings point to a self-help model without the need for clinical intervention, the principal researcher was curious as to whether or not this would be the contention of all adult gamers at each stage of difficulty. Would adult gamers see 'problem' in a similar manner to those clinicians for whom diagnosis is the best means of establishing it? The perspective of the gamer was paramount for this study and would also be the case for any future work.

It was clear that the use of the word 'problem' in the recruitment emails and Participant Information Sheet may have deterred many potential participants and that the use of face-to-face interviews could also be off-putting. Future studies could use alternative facilities to interview participants, such as online chat services, which Wood *et al*. (2004) argued could be more accessible, aid recruitment and have a disinhibiting effect on participants. This method of data generation would be instrumental in testing the validity of some of the themes presented in the current study.

In order to address this problem further, it would be perhaps useful to use IPA as Smith (2009) has before suggested; as a case study. To recruit an individual who felt that their gaming behaviour was problematic and causing them personal distress would further broaden our understanding of what the label of 'problem gaming' or even, 'gaming addiction' means.

The themes generated from the interviews in the current study question the utility of the concept of 'gaming addiction' as a useful mental health label. The findings also outline the value of interventions that promote a self-help approach but also support for clinicians to become more competent when meeting with self defined 'problem

gamers'. Future studies needs to focus on more qualitative research either with a single case study design or with different populations of gamers (i.e. young people) in order to generate a solid research base and a greater depth of understanding of gaming and the people for whom it is a meaningful activity.

Conclusion

This study was at the time of writing one of the first of its kind. Using IPA to understand the perspectives of the adult male console gamer afforded a valuable insight into the experiences of those who had some difficulty as a result of their gaming. It was suggested that the use of 'addiction' in its traditional sense was not appropriate for this group of people. They were discriminative in their activity, goal-orientated and able to manage and reduce their game play according to conflict and context. It was also found that difficulties typically revolved around the single game or event and that gaming was a hidden activity attributed to a lack of acceptance for the medium by society at large. It was noted that for those people for whom gaming was problematic, time-management, prioritising and environmental engineering techniques could be implemented (rather than abstinence) in order to address their difficulties. It was suggested that more work of a qualitative nature needs to be undertaken in the future, focusing less on 'problems' during recruitment and using a more comprehensive online method of data collection, such as online chat services. Conducting research with young people was also recommended in order to further examine the themes generated in the current study.

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Non-Mandatory Appendices

Appendix A Articles included in Literature review

Author	*Year*	*Aim/ Question*	*Participants*	*Measures of 'addiction'*
Lemmens, Valkenburg, & Peter	2009	Validate scale of gaming addiction (A)	721 adolescent gamers	Game addiction scale (GAS) derived
Gentile	2009	Prevalence of A	1178 Americans aged 8-18	dsm- iv criteria for pathological gambling
NG, & Wiemer-Hastings	2005	How do on/offline gamers differ?	91 MMORPG & 48 offline gamers	Internet addiction scale
Hussain, & Griffiths	2009	Does excessive gaming lead to dependence?	119 online gamers mean age 28.5	Exercise Addiction Inventory (EAI)
Charlton, & Danforth	2007	Distinguish A. & engagement.	442 specific MMORPG gamers	Brown's B'oural addiction criteria
Skoric, Teo, & Neo	2009	Explore gaming A.	333 8-12 yr olds	gaming addiction (Brown) DSM4 & Engagement-addiction scale
Liu, & Peng	2009	Correlate negative factors & gaming dependence	288 mixed, 27 av. Age	problematic internet use (Caplan) & -ive effects of mmorpgs (Liu & Peng)
Rooij, Schoenmaker,Eijnden, & Mheen	2010	Correlate time spent and compulsive use	yr1-4920, yr2-4753 adolescents	Compulsive Internet Use scale
Wenzel, Bakken, Johansson, Gotestam, & Oren	2009	Mental health problems and consequences of play	3405 16-74 yr olds, general pop	>4hrs daily play + 4 questions about -ive effects of gaming
Hsu, Wen, & Wu	2009	Understand MMORPG addiction from user perspective	418 18-25 yr olds. College students	rating scale from game addiction (Chou & Ting) &DSM4 & other studies
Ko, Yen, Chen, Chen, & Yen	2005	Factors that predict severity of online gaming A.	395 adolescent online gamers (170 male)	Adapted Chinese Internet Addiction Scale (CIAS)

Peters, & Malesky.	2008	Factor for problematic Internet gaming	145 WOW players, 18+ game time >20hrs	Problematic Usage Questionnaire,
Kim, Namkoong, Ku, & Kim	2008	Correlate A & aggression, self-control etc	1471 online gamers	Young's internet addiction test (IAT) modified
King, Delfabbro, & Zajac	2009	Validate problem video game playing test (PVGT)	online 373 & 416 pen and paper	PVGT based on IAT
Kim, Han, Min, Na, Kang, & Nam	2009	Correlate choice of games with temperament	565 students, middle school in Seoul	Young's IAT
Thomas, & Martin.	2010	Explore play and A among students	1326 school & 705 uni students	from DSM-IV for arcade and Young's 1998 for home gaming
Lu & Wang	2008	Factors that affect online game addiction	1186 online gamers	Young's (IAT)
Grusser, Thalemann, & Griffiths	2007	Addictive potential & correlation with aggression	7069 gamers, mean age 21	From ICD-10.

Appendix B: Interview schedule

1. Tell me about how you first got into gaming (*how old were you? What was attractive about it then?*).

2. Could you tell me a little about your current gaming routine (*hours of play, preferred game/s, how sociable*).

3. What are the things you like most about gaming? (*how is it different from your first experience?*).

4. Can you tell me about a time when your gaming has caused problems in your life (*where do you think the problems originated? How did you feel? How was it resolved?*).

5. What do you think you have lost as a result of your gaming? (*How do you feel about that?*).

6. If someone experiences a problem in their life related to their gaming, what do you think would constitute a problem? (*Where would the problem be located?*).

7. What do you think would help someone who was experiencing real difficulties regarding their gaming behaviour? (*How do you think the health services could help?*)

8. What are your thoughts about certain types of gaming behaviour being classified as an addiction? (*What alternatives to 'addiction' do you think would be preferable? What would it mean to you?*).

9. How do you perceive your future regarding gaming?

Appendix C: Recruitment email

My name is Steve Farmer and I am a second year trainee at the University of Leicester Clinical Psychology Doctorate course. I am interested in the experiences of console gamers who have had difficulties in their lives as a result of their gaming. I am hoping to interview a small number of people in a place that is local and convenient for you to get to in order to learn more about how gaming impacts on your life. The interviews will be private, anonymous and confidential.

I am looking for;

- Men aged 20 years +
- Living in the Midlands in the UK
- Console gamers (Xbox 360, Playstation 3, Nintendo Wii)
- Playing time over 30 hours per week.
- Have recently experienced (within the last 12 months) some personal distress as a result of their gaming. This may include; relationship difficulties, financial/ employment difficulties, physical problems

I am hoping that these interviews will add to current research by looking at your experiences rather than making assumptions about you. This is an opportunity to have your say about gaming. I plan to use this research to inform health services about how they understand gaming and to change the way they support people who feel they have a real problem with their gaming behaviour.

If you are interested, please contact me on the email address below and I can send you more information about what the study will involve. Your time and interest is appreciated and will make a big difference to a very misunderstood and under-researched area.

Thank you for your time,

Steven Farmer,

Clinical Psychologist in Training

Leicester University

Email: sf150@mail.cfs.le.ac.uk

Appendix D: Statement of Consent

     I have read and understood the participant information sheet and I am happy to participate in this study

Name_____

Date_____

Signature_____

Appendix E: Transcript extract

I: What I'm trying to understand I guess is [Mm] What is it specifically about gaming, what does it draw out in you? [Mm] If you can imagine when you're sat and you're playing a game [Yeah] What is it you're feeling and what things do you go through do you think?

P: All sorts, from anything from hysterics over some that could happen to erm I've, I've smashed a fair few controllers in my time. [Right] Yeah abs, definitely you know erm not for a little while now. I think that's a few years ago probably my last one but that was just pure frustration. I wouldn't necessarily blame gaming. That might just be part of a-er just a bad temper. Just being a bit immature man, I don't know erm we, we all kick a chair here and there but a control pad, they're a bit more breakable than a chair I suppose. [Yeah](both laugh) So yeah, erm that's frustration whether you're just upset at your own ability of not being able to do what you wanted to do just losing, saying if one is absolutely losing, yeah and then it can just drive you mad.

I: So there are-there are a few negatives in there when you've played

P: Well absolutely yeah, I mean financially you're aware that will cost you money to replace that controller [Right] Erm, but then you kind of think well, I mean somebody asked my girlfriend and she'll be like well just don't play it. Well you don't understand I can't just not play it, you know what I mean? (Laughs) Cos yeah, you think you know on paper, you know if that makes you do that, don't do it but it's like no, it doesn't. Perhaps in the same way, don't drink it gives you a hangover. I'm not going to stop drinking. Definitely not so...

I: Ok, so-so thinking about the drinking, then thinking about the gaming what is it that makes you keep going back? What is it you feel?

P: Erm, it's good. I think it outweighs the pros and cons, I think just outweigh it. Erm just they're fun and they're competitive erm er the addictive element of it definitely. Erm, just kind of like always wanting to better yourself, erm achieve more, er winning. Winning's a good feeling no matter what it is.

I: Ok, so it sort of feeds into that part of you, you say is competitive.

P: Yeah. I mean I've been to a few, a couple of gaming tournaments. [Have you?] Yeah, nothing, nothing big I mean there's, there's proper pros out there but I'm, I really just amateur fun. But yeah definitely you know I took it seriously enough to go and do those in Leicester and play a few of them erm [How did that go?] Erm not-not as good as I thought it would (laughs) [Ok (laughs)] But yeah, we did alright but yeah that was the Halo tournament we did. Erm but yeah, no, like I say yeah so it's, it's probably competitiveness with what would draw me to multiplayer games. [Right] Yeah. [And it's sociable as well] Sociable yeah absolutely, yeah one hundred percent.

I: So erm what's it's like to be in one of these tournaments then? What's-what's the experience like?

P: Erm, yeah, yeah I mean tremendous fun. I mean you get, you meet, you meet like-minded people [Mm] Erm er you know, you all kind of like the same thing so really erm you've all, you're all literally have the same attitude as each other. If there's one reason you're there, you've made the effort to go somewhere to play a little game in the tournament [Mm] Then you obviously all have a share of exactly the same kind of passion for the game as each other erm and er but, you, you find it its a lot more erm kind of erm you take things a lot better. Like you lose there and the fact that you are in a room of people and strangers you, you're like "oh that's a shame, dammit" and just move on [(Laughs)] Whereas is you're at home you'd be like "aargh", say all sorts, who

knows. [Yeah] Erm but yeah I think yeah it's, it just adds that little bit more of that competitive erm appetite that I have [Yeah] For doing it; it adds that little bit more to it [Mm] y'know Makes it a bit more real perhaps.

I: I wonder if we can erm we can move on to erm something a little more serious in this [Yeah] I'm wondering if you can think about what you may have lost [Mm] As a result of gaming?

P: Erm, its difficult cos I mean. Erm what could I have lost as a result, due to gaming? Erm, I don't know. Perhaps it's difficult because you game so much to the extent where you be like, you don't realise perhaps you've lost something or not, gained something more, broad speak. Erm so I, I mean thinking now I can't really think of anything particularly that I've, sleep? [Ok, sleep] That's an easy one [Ok] Erm, but I've never lost anything through, through gaming, not too per se. I mean you know, sure if you, you weren't gaming what else could I be doing? Could be at the gym everyday, who knows? You know, that's good for your body but [Right] You know I try and do that as much as I can anyway but yeah, I mean as far as actually something being lost, I can't imagine it bar finances through the odd smashed controller. [Right] Through the years, yeah

I: Yeah, so can you think of a time when gaming has, has, has been a difficulty in your life? When it's been a problem?

P: A problem? Erm potentially I mean you kind of, you want, you want to play erm a game so much I mean er I mean last summer erm we, when it was the, the er first real sunlight we got and I was kind of, it's pretty funny saying it, oh there we go, first bit of sunlight, I want to go home, close the curtains and put Modern Warfare 2 on. [Right] Erm so again yeah you know perhaps I mean it's a no-brainer. Surely you should be out

kind of enjoying it a bit more, enjoying the weather but erm that, that, that appetite for playing is the main reason why I kind of go home and put the Xbox on and start playing it with friends online of course but again we're all likeminded people indoors [Sure] Kind of closed cos the sunlight's on the TV.

I: Describe for me then what you mean by er that appetite. What does it feel like?

P: Erm, just erm oh I don't know. I mean I think initially that's the word that does it, that hunger to want to kind of play and erm and keep going and you know bring your levels up and better, better your, better the people you get to play against, people who you'll never meet again in your life but you want to beat them. [Right, yeah] Erm do better than your friends perhaps, you know as a you know, what's the word, competitive, when you want to better your friends you know, you want to, er friendly compet, there a word for it but I can't think of it. You know whatever, [Ok] But yeah, you want to do better than your friends [Sort of beat them] Yeah, better them despite being on the same team, side so to speak. Erm I think that is, must be what I really can, can think of about, that makes me want to play it is, just the competitive element and the obsessiveness of wanting to upgrade your level of the game your playing, the score essentially [Right] If you don't know, in Modern Warfare you rank up. Erm Halo your skill level goes up, [Yeah] Things like that, just really always want to bring that higher, ultimately you're really achieving nothing apart from a number [Right] But again you want to do it more than anything almost, yeah.

I: Which is interesting-which is interesting because you're saying sort of on the one hand you're almost smiling to me and saying this is silly [Yeah] Because at the end of it there's nothing [Yeah] but on the other hand you're also smiling because when you

were reminiscing about last summer [Yeah] That was a fondness [Yeah] So erm if, you've got two things going on at the same time

P: Yeah, yeah I do. I completely yeah, I-I-kind of mean I kind of you know, me and my friend you know ███, we always joke about how we are you know with Xboxing and that. Oh, kind of think of let's just kind let's just log on then and "should we go out somewhere tonight". "no, We'll go on the Xbox instead" and everyone else'll go out and have, losers whatever, do you know what I mean? [Yeah, yeah (laughs)] Yeah, it's just, yeah it is just fun. It is fun. Like I say it's erm at no point do I think I've kind of burdened myself. If anything I think I enrich my life with it. [Lovely] Er, I kind of feel a bit, you know feel people kind of miss out on it by not doing it. You know, what you doing. I mean, when people say, it has a bit of a stigma doesn't it? Gaming and that but I'd rather be playing on the Xbox than watching Hollyoaks and Coronation Street or something and then your brain really is rotting away. At least it's always active and you're going for it.

Mandatory Appendices

Appendix F- statement of epistemological position

The principal researcher took on a predominantly Social Constructionist epistemological position. The use of qualitative methodology was used in order to question the usefulness of taken for granted assumptions and reflect upon the social and cultural 'situated-ness' of knowledge. The principal researcher's standpoint was not as a purist with regards to Social Constructionist ideas, reality was not ultimately rejected but hypothetical constructs (such as addiction) were scrutinised for their usefulness.

Appendix G- Chronology of Research Process

Work Item	Time Period
Recruiting	July- November 2010
Pilot study	July 2010
Interviews	August-December 2010
Transcription	August 2010- January 2011
Analysis	August 2010-March 2011
Literature review	June 2010- April 2011
Writing	January-April 2011
Submission	May 3rd 2011

Appendix H- Notes for contributors, Addiction

1. GENERAL

Addiction is a monthly international journal read in over 60 countries and has been in continuous publication since the Society for the Study of *Addiction* was founded in 1884.

It welcomes unsolicited research reports, reviews, and letters relating to clinical, epidemiological, human experimental, policy-related and historical aspects of any behaviours that have addictive potential including, but not limited to, use of alcohol, opiates, stimulants, cannabis, tobacco, as well as gambling. The acceptance rate is currently about 20%. Research reports should present original findings and normally be limited to 3500 words excluding abstract, tables and references. There is no minimum length. Reviews should normally be 'systematic' (i.e. adopt standard systematic review procedures) and be no longer than 4000 words for the main text. Letters should normally be no more than 500 words. For further guidance on *Addiction's* acceptance policy please see **West, R *et al* (2011) Addiction's priorities when evaluating submissions Addiction, 106: 463-465**.

Addiction will publish occasional monographs of up to 10,000 words including references. Monographs should be major pieces of writing. The kinds of papers that would qualify might be extensive systematic reviews of a major topic or a series of linked studies addressing a common research question.

We are willing to make exceptions to word length stipulations in rare cases but otherwise we encourage authors to make use of a facility we offer for supplementary material to be stored with the online version of the article.

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For information on how to write articles for *Addiction*, authors should look at recent articles of the type they are proposing to submit. They should pay special attention to the following:

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3. ETHICAL PRINCIPLES

The journal supports the ethical principles enshrined in the Farmington Consensus (Addiction, 92(12) pp 1617-1618).

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Appendix I–Correspondence with Ethics Committee

To: **STEVEN FARMER**

Subject: Ethical Application Ref: **sf150-8302**

                (Please quote this ref on all correspondence)

06/05/2010 10:27:04

Psychology

Project Title: **How is problematic electronic game play understood? An Interpretative Phenomenological Analysis study of self-defined problem console gamers.**

Thank you for submitting your application which has been considered.

This study has been given ethical approval, subject to any conditions quoted in the attached notes.

Any significant departure from the programme of research as outlined in the application for research ethics approval (such as changes in methodological approach, large delays in commencement of research, additional forms of data collection or major expansions in sample size) must be reported to your Departmental Research Ethics Officer.

Approval is given on the understanding that the University Research Ethics Code of Practice and other research ethics guidelines and protocols will be compiled with

- http://www2.le.ac.uk/institution/committees/research-ethics/code-of-practice

- http://www.le.ac.uk/safety/

The following is a record of correspondence notes from your application **sf150-8302.** Please ensure that any proviso notes have been adhered to:-

Apr 2 2010 9:08AM
Mr Farmer —

I have had a chance to look at your application now, and I can tell you that it is not going to be approvable in its current state.

For example, you have attached your proposal rather than your consent form as required, and your consent form does not contain the required information. Please see the "Tips for completing your ethics application" file on the PREC website (from which you entered the application). Also, please note the text on the form stating that "In drop down panel '5. Research Ethics Checklist.' If you have answered 'yes' to any of the questions 1-12 or 'no' to questions 13-14, please return to panel '4. All Research Applicants' and ensure that you have described in detail how you plan to deal with the ethical issues raised by your research." You will receive additional comments from the Departmental Ethics Officer when your application is reviewed.

Unfortunately, once an application is listed as "completed" in the online system, it cannot be altered. As such, I'm afraid you will need to start a new application. I have attached a Word document containing your answers to the text-rich questions to facilitate this process. Please select your supervisor as your "authoriser" rather than Joy Kocik this time. If you have questions about completing the form (that are not answered in the Tips for completing your ethics application document), please let me know.

██████████████████████████

University of Leicester
106 New Walk
 Leicester
LE1 7EA
England

cl136@le.ac.uk

Apr 14 2010 10:28AM
Dear Steven

I am the Departmental Ethics Officer assigned to your application. I have reviewed your application and will be handling it on behalf of the full committee. There are a few minor issues requiring clarification, listed below:
1. On the consent form, please add your contact details (e.g., email address) and also the name of your supervisor.
2. In the title of your research it would be useful if you wrote IPA out in full - participants may be unlikely to know what it is, but at least it will be clear to them that it is a type of method/analysis and then they can ask further questions if they wish
3. Please clarify what other types of private rooms you are thinking of using? The Committee will not approve meetings for example in a private home, so you will have to stick to public places or the University.
4. Do you have a proposed schedule of questions, or example questions? The Committee now require this for interview research.

Please make these changes on the original form. You may wish to discuss your revisions with your supervisor prior to resubmission. As the Departmental Ethics Officer assigned to your application, I will review your revisions. Please be aware that this process can take approximately a week following submission.
Best wishes

████████

May 5 2010 11:22AM
Hi Steven,

　　　Please could you add a sentence to your consent form to make it clear how participants should withdraw if they wish to. Otherwise, your application is ready for approval.
Best wishes

████████

Critical appraisal

My decision to study gaming 'addiction' seemed like a logical choice since I had some experience studying behavioural addiction from my Masters thesis and was, myself an avid gamer. I also had a preference for qualitative methodology which coincidentally seemed to address the gap in existing research on gaming. The idea for studying gaming 'addiction' came about in October 2008, but at the time, the focus was on finding more about 'addiction'. It was only after doing a rudimentary literature search that it became clear that this had already been done to a considerable amount.

My love of gaming was the main reason for me to be interested in conducting the current study. I have been a gamer since I was eight years old, much to the disappointment of many of those around me. I could probably say that in my younger years, many an essay was cobbled together hastily at the last minute so that I could continue to engage in an activity that was unlike anything else. As I got older though, I noticed that nobody else really talked about gaming. No one that is, other than all the media sensationalist types who seemed to vilify gaming as some kind of corrosive destroyer of young minds, like a combination of cocaine and road rage.

The limited research that I knew about at the time seemed to be a reflection of the media moral panic. Gaming as addictive or people as addicted seemed to be the main two directions in which the studies went. Apart from two studies, they were all quantitative surveys, almost all were correlation studies and many of them talked about 'vulnerability' or 'predisposition' when it came to gaming 'addiction'.

This is where my interest was piqued and where I saw a potential to address a gap in the research literature: why had no one asked the gamers themselves what was the usefulness of this label of 'gaming addiction'? What did it mean? And how useful

would it be in the future provision of mental health services? What I found absolutely incredible was that the existing research seemed to take no interest in the opinions of those people at the heart of gaming: the gamers themselves. Gamers had become a peculiar oddity observed from behind a glass and studied like laboratory rats. Quantifying people and reducing them to a numerical value of significance was as bewildering to me as the idea of interviewing oxygen; I could not get my head around the way the methods of the natural sciences could be so easily used in the social sciences. We each of us have our beliefs and values, so why not embrace them and include them in our research? This was the starting point of the thinking behind the current study.

There was already talk of 'gaming addiction' being included in the DSM V, provided there was sufficient research to support it. This filled me with dread and horror. How could anyone be okay with having their child diagnosed as a gaming addict? The prospect seemed ludicrous to me, having worked in a clinical setting with children where diagnosis is the first course of action. Labels found in the ICD-10 such as ADHD, Oppositional Defiant Disorder and Sibling Rivalry Disorder (WHO, 1993) are all now commonplace, yet for some, identifying someone with these diagnoses means they are labeled for life as naughty, bad or defective. Where is the usefulness in applying the label gaming 'addiction'? I needed to try to find out just how much people responded to this concept or see if there was validity in it.

Certain methodologies were rejected; the use of an online methodology (advocated by Wood, 2004) seemed the most suitable way of investigating sub-section of the population described as tech-savvy and "socially unskilled" (p. 511,) however I felt that the use of the internet to gather qualitative data would create a barrier between myself

and the participant; thus affecting the quality of the data. I wanted to be able to speak with people without obstruction, to understand their experience, not read it. This decision to interview people in person may not have been a mistake for me then, but looking back at the difficulties I experienced recruiting, it may have been a mistake for the sake of the research.

Quantitative methodologies were also rejected on several grounds. There seemed to be a culture of describing and predicting rather than understanding which prevailed in the current research and seemed to do little apart from labelling people unnecessarily. What I wanted to do was allow the gamers' voices to be heard, and to understand context and opinion and to challenge some of those damning descriptions of them.

It was also important to rule out certain qualitative methodologies: I didn't want to inform social policy, so Grounded Theory was rejected; nor did I wish to create tables of responses and so Thematic Analysis was not considered. Time constraints meant that I could not entertain the idea of Conversational or Discourse Analysis. This left only two methodologies: Narrative Analysis and IPA. IPA was chosen because it marries well with psychological theory and is fairly well evidenced for themes of identity and change (Smith 2009). IPA also had a unified approach affording a practical and finite analysis. It was also suggested to me that I avoid Narrative Analysis for the sake of the research process; that my subject matter was interesting enough and so my methodology need not be. I was more than happy to accept this advice as my main focus was to understand the data generated and not spend too much time becoming competent with a new methodology.

One of the most valuable lessons learned about data collection was how important it is to word your recruitment letter appropriately. Using the word 'problem' in the advert

was likely to have scared off most of the potential participants, in personal communication with the head of computer science at De Montfort University, it was made clear to me that the only 'problem' perceived by his students would be in those who did not game at all. Gaming was seen as the 'norm' and the concept of gaming excess was meaningless. The disappointment I experienced when time after time a metaphorical door was closed on me was matched only by my elation when participants arrived for an interview. This was a hard lesson to learn particularly because my advertisement would have reached 23,000 people and according to current research (theesa.com, 2010), 67% of adults have experience of gaming. It seemed as though I had scared off all of my participants other than those for whom a 'problem' was way behind them.

Gaming as a derided activity appeared to be something that people were incredibly sensitive about. No one I contacted in the games industry would return my e-mails, nobody on Twitter would 're-tweet' the link to my research and no one who worked in the games industry would speak to me. My existing accounts for two gaming websites were suspended because I was 'advertising' which appeared to be the quickest way to get rid of me. It was short-sighted of me to think that my enthusiasm for this research would be shared by everyone else and even those that did profess to be interested did not get back to me or failed to arrive for their interviews. It felt as though this was a sub culture that had a great distrust for researchers and even though I announced myself as a gamer from the outset, part of me wonders if they believed me. This mistrust was hardly surprising. Between the media and academic research, gaming had not been portrayed in a positive light.

Those who did arrive for interview, however, provided me with a wealth of data in their own words that simply could not be matched by any survey or standardised questionnaire. It is important to be mindful though, that all the data generated was interpreted by a gamer who felt strongly about 'gaming addiction' as a misleading concept. The epistemological standpoint of social constructionism affected each stage of the research; a different researcher may have done things differently, asked different questions and interpreted this findings differently. That however, was another reason why I was drawn to IPA; I felt strongly about the 'I' in the methodology.

Recording the interviews added an additional concern for the data generation; I worried somewhat that recording would "dissuade frankness or increase nervousness to an unacceptable level" (Hammersley & Atkinson, 2005, p. 185) and I discovered to a degree that the digital recorder had become the third person in the room. There were some interesting things discovered when the recorder had been switched off. One participant leaned over to me and speaking as though he was telling me a secret, said "I probably am addicted to games, you know" almost as though recorder was a judgmental parent. One of the interviews was preceded with being told by one participant's mother that her son was both aggressive and could not sleep without medication because of gaming. I discovered later that for him, gaming was not problematic at all and he was also the only participant who unashamedly celebrated gaming. These extraneous pieces of information added to the findings and produced an interesting backdrop to the generation and analysis of the data.

It was also clear that the subject of gaming was quite controversial and I was approached by one journalist, one podcaster and a South African based website designer who all wanted to know more about the study. I was also contacted by an undergraduate

Psychology student who asked me to supervise her dissertation. Conducting this research then became as much about managing publicity and attention as about managing the data, which was something I had not expected.

Analysing the data was a challenge and the amount of time it took was underestimated because of the sheer vastness of the material generated. The constant back and forth nature of the process was dizzying and trying to get an understanding of the participants as a whole was exceptionally tricky at times. I understood as time passed that a lot of the difficulties were from my lack of experience in conducting an IPA study. I was unsure whether to transcribe all the interviews but found that I was exhausted by the fourth and could not continue at the pace I was going. It became clear that the process of editing the transcription provided by the paid administrator was sufficient for me to become considerably more familiar with the data.

Project management was also a challenge for this study. I was prepared that this would take up a great deal of my time, but a significant portion of time became was wasted, as I spent it considering so many different courses of action. I was thinking about which parts to address next, should I do another transcription, read a few more articles, analyse the data, write the method section or note down some initial themes? Learning to construct a more detailed means of project management which included smaller steps was something that will serve me well in the future. I am now more aware of the smaller, but just as time-consuming aspects involved in a small-scale piece of research (such as emailing, editing transcriptions, participants that may not arrive, etc.) that I had not previously considered and can incorporate them into any future research plans.

Deciding what method to use to analyse the data was also a tricky one and I spent a considerable amount of time downloading and familiarising myself with the NVivo qualitative analysis software which was ultimately deemed inappropriate. Nodes and trees became more of a focus than my actual data and I couldn't get a sense of how it was helping me to organize it all. I wrote all my themes on sticky post-it notes and reverted to sticking them on to three giant sheets of wallpaper. It was the simplest answer to my most difficult question: how could I really connect to my data? It was simple really, I had to be able to touch it, to move it about and attach meaning to its physical location. I had discovered my own method of managing such a vast amount of data and from that point the themes felt like they were almost generating themselves. All my themes were neatly bunched together, colour coded and identified with page numbers for easy reference which helped me to refer back to what each participant had said and remind myself what had engendered that particular idea for me. There were times when I felt as though I was swamped in the data but I was able to regularly take a step away and on three or four occasions, leave the data analysis altogether in order to concentrate on other tasks.

Using supervision was not only useful for collecting my thoughts but also to keep me focussed. The practical implications of triangulating ideas and discoveries were obvious; what proved less obvious but even more welcome, was being able to talk to someone who could provide me with stability, perspective and insight. Using a digital recorder to remember one of our more lengthy meetings proved invaluable and was an IPA study in its own right. I was able to harness all my thoughts, guided by my supervisor and make use of them. The themes began to make more sense, the clinical implications more powerful and the limitations less of a barrier. In short, speaking with my supervisor was a key step.

I was surprised to discover that the process of analysis continued throughout the writing stage. Just like my clinical practice, the formulation and reformulation of ideas did not occur only during the assessment, but was a constant iterative process. New ideas came to me almost like flashes of inspiration as I typed and undoubtedly could have continued, if I had let them. Another challenge that I had not predicted then was being able to stop analysing in order to write my study. This proved difficult, but was a matter of allowing myself to be satisfied with the themes and ideas I had generated. I really enjoyed the feeling that the research process had almost taken on a will of its own and feeling it was leading me to new discoveries rather than me forcing them into existence.

The research process was rigorous, unrelenting and exhausting. It gave me the opportunity to grow as an academic researcher, which has added an additional layer to my skills as a clinician. Studying gaming and gamers allowed me to do something very new but also taught me how to manage my own time, my priorities and the voices of others. I hope that this research will be the first of many more studies that look at gaming from a clinical perspective in order to support those experiencing a genuine difficulty with their gaming. I also hope that it supports the prospect that 'gaming addiction' is not a useful way to understand the experiences for most of these gamers.

It would be encouraging to think that there might be more research in the future that celebrates the positive aspects of gaming, the benefits and the value that it holds for individuals, but I believe that this will not be the case for the majority of academic research. I think that gaming will continue to be the evil influence for as long as it is en vogue. As one of the participants said:

"It's just something to blame I guess…if a guy stabs someone cos

they unplugged his console that's not the game that caused that. That's

got to be a mental problem there at the beginning… It's just a game at

the end of the day"   -interview #7, P.36.

For as long as it remains popular and the activity is misunderstood by others, I think there will be a continued focus on the pathological aspects of gaming. In my opinion this would be a terrible shame. The future of research needs to listen to the smaller voices that speak of how mental health is 'constructed', how cultures respond to new activities and how context invariably contributes to people's mental health. I hope that when the process of earning my Doctorate is completed, I will be one of those contributing voices.

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