The Effect of Violent Video Game Play on Gamer's Views of Victims of Crime

A thesis submitted in partial fulfilment of the requirements of Nottingham Trent University for the degree of Doctorate of Psychology

Lavinia McLean

May 2015

Contents

Acknowledgements

I would like to thank my Director of Studies Professor Mark Griffiths for his excellent supervision and support throughout this research, and for the encouragement he always gave me. I would also like to thank my colleagues who were often the people who I ran things by initially and frequently pointed me towards a more realistic approach. In particular I would like to thank Emmett and Siobhan for all their help.

I would like to express thanks to all of the young people and the adults who participated in the research. I am also very grateful to those who provided their expert opinions and feedback on video games and the issues around how to access gamers.

I would like to acknowledge my family, my parents, in particular my mother who has always believed in me and my four children Kate, Cormac, Isabelle and Ewan who made the times outside of this process so important and reminded me how to prioritise and enjoy the time I did have free.

Finally I would like to thank my husband Andy, without whom none of this would be possible. For on-going child-minding, helping me, placating me and generally providing unwavering support and encouragement throughout the last few years I will be forever grateful, and will never forget.

Abstract

This research was designed to explore the relationship between violent video game play and attitudes towards victims. As the violent genre of games become more popular and as the graphics and content becomes even more realistic and immersive, there has been concern that this media form offers a different perspective on violence to players than more passive forms of media. Much of the research in the area of violent video game research has focused on changes in players in terms of aggressive behaviour, following exposure to these games. The present research was designed to explore any changes in affect and cognition, in terms of attitudes, that may be associated with video game play, and also to explore any factors that may moderate or mediate these changes in players, with a particular emphasis on adolescents and female gamers.

The overall aims of the thesis were to establish i) the attitudes of gamers towards victims of crime ii) the role of moral disengagement strategies in violent video game play iii) the nature and experience of female violent video game play. The aims were addressed through four stages of linked research utilising a multi method design including a survey of adolescents (n=206), semi structured interviews (n=50), an online and paper survey (n=605) and analysis of a female gamer online discussion posts, in order to explore the impact of violent video game play

The principal findings of this thesis noted young people who played violent video games reporting less concern for victims of crime, and attributed more blame to the victims of crime, particularly non serious victims and those that could be viewed as culpable for the crimes. While moral disengagement has been proposed as a mechanism through which people may justify immoral conduct, in the current studies the video game players were less likely than sports players to endorse moral disengagement strategies. They were found however to use a specific set of moral disengagement strategies (cognitive restructuring) than sports players and this may be related to the structures of the games, both virtual and sporting. In relation to female gamers, gaming was found to be a key element of the female gamers' identity, with females discussing the integration of gaming into their daily lives on a number of different levels. Similar to previous research, the social elements of gaming was highlighted while simultaneous difficulties with

online interaction emphasised for female gamers. The results of the studies are discussed in relation to the experience of gaming and the possible mediating and moderating factors that may explain these effects. The results suggest that cognitive distortions, developmental stages, gender and differences in identification with game characters may explain differences in attitudes towards victims which were observed. These concepts are discussed in relation to risk and protective factors that may be important in understanding any relationship between violent video game play and less positive attitudes towards victims.

Chapter 1: The psychological impact of video games.

The effect of video game playing on adult and children's lives has been the subject of much investigation over the past 25 years, as the frequency and extent of play increases. Huesmann (2007) argues that the main changes in society over the past 20 years can be related to the *"saturation of our cultures and daily lives by the mass media"* (p.56). There is an additional concern within this that the effects of video game playing are larger than the effects observed with television and film viewing (Anderson, Gentile & Buckley, 2007), and that children may be at a greater risk of negative effects as a consequence of exposure to video games. The key arguments in relation to these changes relates to whether they can be regarded as positive or negative changes, and also in relation to what factors can lead to these observed changes. In considering these effects, much of the research relates to the negative impact of video games, and in particular to the effects of the genre of violent video game. However, it seems impossible to consider these effects without considering the powerful positive effects of video games, in terms of their ability to facilitate the development of skills and learning in a range of fields

It has been argued that as video games are particularly attractive platforms to young people, they offer a valuable forum for learning (Swing & Anderson, 2008). This technological advancement in the media has also allowed for an increase in learning and the development of strategies to provide help to people through the use of gaming. In this context, the research on gaming has also explored the role of games in helping children and adults to learn particular skills, to address difficulties they have and to develop greater understanding. Video games have been described as powerful and persuasive tools (Gentile & Gentile, 2008) and it may be argued that it is not possible to ignore the attraction of video games, and therefore it is imperative that the impact of these mediums of learning is explored in detail.

This literature review is exploring key areas of research in the field of video games, with a particular emphasis on the research on violent video games, with a view to reviewing the key research studies in the area in an attempt to explore the impact of video games, but also to highlight the possible factors that may moderate both the positive and negative effects of game play. These factors are related to both structural characteristics found within games, but also to individual player characteristics such as personality traits, arousal levels and developmental stages.

There has been a focus within the area of video game research on the content of games, with a large amount of research conducted on violent video games. This research has primarily used three different types of studies. These are (i) short-term experimental studies that involve people playing games for a short time followed by measurements of particular variable of interest, (ii) cross-sectional or correlation studies that are explore long-term effects of playing, but can offer a difficulty in being confident of any relationships observed, as it is not possible to control for all extraneous factors, and (iii) longitudinal studies that have explored the effects of gaming during childhood and early adolescence on a number of different characteristics such as aggression, empathy, and prosocial behaviour. Meta-analytical studies offer a key understanding of the effects observed within other studies as they offer an analysis of the overall effects found. Recent meta-analyses have highlighted the consistently observed effects of aggressive behaviour following short-term and habitual playing of violent video games (Anderson, et al., 2010), although there has been identified issues with the employed methodology within the studies (such as effect sizes, samples used, methods used to measure aggression) which has allowed for some researchers to criticise this assumption (Ferguson & Kilburn, 2010).

In addition to observed effects of video game exposure, the issue of addiction to video games and online video games is also a concern as research indicated that children and adults spend longer amount of time playing these increasingly sophisticated games, than ever before (Williams, et al., 2009). The role of structural characteristics of games that allow for a greater attraction to play and for increased learning are considered key elements in an understanding of excessive playing of video games (Griffiths, 2010 b). Researchers have discussed the role of psychological processes that may be involved in explaining the effects of video game play including changes in cognition or arousal, whilst moderators of the effects may include the developmental stages of players, gender and cultural factors and key individual factors such as levels of psychoticism, immersion and identification in game play, individual differences in anger prior to playing and the person's overall motivation for playing. The proposed moderators of video game effects allow for an explanation of the individual differences in any observed effects of video game exposure. The current research is designed to further explore some of these concepts in terms of

mediators of any impact of violent video game play on attitudes towards victims, and to consider any moderating factors which may explain individual differences in any relationship observed between violent video game play and attitudes towards victims.

Video game playing demographics

The amount of time that young people are spending playing videogames is steadily increasing and this finding is evident internationally. A British study found that those aged under 16 years rank playing videogames as their most popular entertainment form (Pratchett, 2005), whilst US studies have reported similar findings with time spent playing games continuing to increase for both children and adolescents (Anderson, Gentile & Buckley, 2007; Escobar-Chaves & Anderson, 2008; Gentile & Anderson, 2003). In Ireland, research has indicated that over half of nine-year old girls were recorded as playing videogames on an average weekday, compared with only 25% of boys. Almost 30% of boys (compared with 12% of girls) were reported as spending one or more hours daily playing these games (Williams et al., 2009). With recent research indicating that children aged 8 to 11 years play on average 12 hours a week and 12 to 14 year olds play 15 hours per week, the role of videogames is ever-increasing in the world of young people (Gentile & Gentile, 2008).

While initial research in the area of video games focused on adolescents who were alleged to be constantly playing video games, Yee (2006) and Griffiths, et al., (2003) point to the need to disregard initial stereotypes regarding demographics of those playing video games, and move away from the view of teenagers as the sole gamers in today's society. Research by Williams, Yee and Caplan (2008) indicates that up to 40% of adults are regular players of video games in US, in comparison to 83% of teenagers. Griffiths, Davies and Chappell (2004) found that 81% of players of online games were male with a mean age of 28 years whilst Yee (2006) reported a similar finding with US online gamers. This change in demographics may be related to the emergence of online games and the increasing sophistication of these games.

Online games have introduced a new era of gaming to the millions of people across the world and their attraction is growing daily. In 2007, *comScore* released the results of a global study into online gaming. This showed that the number of unique visitors to these sites to had reached almost 217 million worldwide – a year-on-year growth of 17%. In relation to online games, Rideout (2005) has reported that 67% of teenagers play online games regularly, whilst Hurthouse (2006) found most online gamers were male in late teens to early twenties. In relation to mean time playing per week, Griffiths, Davies and Chappell (2004), and Yee (2003) have reported similar scores of 25 hours and 22 hours respectively. Griffiths, Davies and Chappell (2003) found that 25% of those surveyed played games for over 41 hours per week, whilst Griffiths, Davies and Chappell (2004) reported a mean age of 28 years and a mean playing time of 25 hours per week. A relevant study of online gamers of *World of Warcraft,* rated low gamers as those who played less than 44 hours per week, and reported that 12% of players played between 45 and 82 hours per week (Longman, O'Connor, & Obst, 2009).

There is a consistent finding in videogame research that boys tend to play videogames more frequently and for longer periods than girls (Anderson, Gentile & Buckley, 2007; Rideout, Foehr & Roberts, 2010). Padilla-Walker et al., (2009) found that 50% of women never played a game during the past year and 80% of women had never played a violent videogame during the past year. Researchers have argued that the gender differences reported in video game research may be related to (i) socialisation factors (i.e., females not being socially rewarded for playing video games in the same way as males), (ii) the fact that video games have typically been designed by males for other male gamers, and (iii) males having better spatial ability skills than females thus aiding video game playing (Griffiths, 2008; Krahe & Moller, 2004; Olson et al., 2009). However, recent research indicates that the number of women involved in videogame play may be increasing with research conducted with teenagers and young adults indicating that 99% of teenage boys and 94% of girls in US played videogames (Lenhart et al., 2008). More recent research with young adults found that female gamers value their gaming identity and the role it plays in various aspects of their lives (McLean & Griffiths, 2013c), indicating a greater focus that female gamers may place on gaming, than indicated in earlier studies.

Most young people spend more time watching screen media than in any other activity apart from sleeping (Strasberg, 2004). Roberts, Foehr and Rideout (2005) argue that young people's access to media is a major determinant in the amount of time spent accessing various media. Children who have a video game console in their bedroom spend at least 32 minutes more each day playing console video games than those without one in their bedroom. Gentile (2009) has recently explored young people's game playing of 'M' (Mature: 17+ rating in US) rated video games, and questioned how they were able to get access to these games. Almost half of those aged between 8 and 18 years got the game as a gift, and only 5% of those questioned stated that their parents did not know that they had purchased or received this game. This is an interesting finding in relation to overcoming any negative effect of video game play and is discussed in more detail later in this section.

Bijank, Konn, Bushman and Roelosfma (2009) have argued that age labels and violent content labels increase attractiveness of video games, as they have been found for television and films, for all age groups, and for boys and girls. Over a quarter of the time that young people aged 8-to 18-years have reported the use of one form of media, they were simultaneously using one or more other media forms, with this number significantly increasing for heavy users of computers and video games (Robers, Foehr & Rideout, 2005). This finding may explain the high prevalence rates of young people using video games whilst the rate of television viewing has remained stable (Anderson, Gentile & Buckley, 2007).

Advanced technology and changes: Implications for video game playing

The past 50 years have seen a widespread change in the face of communication and (simultaneously) of media outlets throughout the world. It can be argued that one of the most obvious and far reaching effects of the consistent advancement in media can be observed in the influence of the many form of media available and used by young people today (Roberts & Foehr, 2004). The introduction of widespread internet and broadband has facilitated the spread and attraction of online gaming worldwide (Rosser, et al., 2007). Hendel and Harrold (2004) highlighted this change by the fact that in 1996 only one-quarter of students were using the internet whereas a decade later over 95% of students were using the internet (Odell et al., 2000). The accessibility of games on internet, mobile phones, as well as handheld computer

game consoles has had large impact on the gaming environment. Roberts, Foehr and Rideout (2005) have argued that the young people they surveyed who had access to personal media (in their bedroom or through the use of portable media) were more likely to report substantially higher exposure to this media than those who did not have such portable media forms.

In the last four decades, the way in which games are played have changed (from being played upon arcade machines to consoles and computers, to handheld devices and smart phones online), and technology has advanced game-realism from black-and-white to colour, from 2-D to 3-D graphics. While early graphics were simplistic, and the action within the games was often described as abstract (Dill & Dill, 1998), this change can be illustrated in particular in the area of violent videogames. Early videogames such as Pac-man and Space Invaders, the enemies and the killing were seen as abstract. With the introduction of first-person shooter games in 1992, there was a turning point in the use of violence in videogames in that the violence had taken on a more personalised form for players.

The increases in processing power and in children's ability to use multimedia and increasingly sophisticated graphics and consoles has also allowed for, and resulted in, a desire for more realistic and powerful games. Recent research has highlighted the continued importance of realism in terms of storylines and characters for male and female gamers (McLean & Griffiths, 2013c) The increased marketing of games at a wider range of customers has also had a large impact on the success of the gaming industry with the 1990s seeing the development of games specifically aimed at a minority group, namely girls, through the design of games such as Sims, a kingdom-based game that the gamer can control and organise (Cole & Griffiths, 2007), and the introduction of brain training and puzzle games marketed at adults as a strategy for improving cognition and learning (Barlett, Anderson & Swing, 2009; Nacke, Lennart, Nacke, Lindley & Craig , 2009).

Video game playing genres

Based on videogames available at the time, Griffiths (1993) proposed a useful videogame taxonomy comprising sports stimulations, racers, adventures, puzzlers, platformers, platform blasters, beat 'em ups, shoot 'em ups, and other miscellaneous games. Pratchett (2005) found that different genres of games

offered particular attraction to people at different stages in their lives, with a marked distinction between children and adults' choice of games to play. Simulation games were favoured by 11- to 15-year olds, action-adventure games by 6- to 10 -year olds and, educational, racing, sports, puzzle and racing games by 16- to 24-year olds, whilst adults preferred classics and first-person shooters. The introduction of dance-based and activity-based games has led to extensive research exploring the role of a particular genre of games that has been termed 'exergaming'. These are active computer and video console games and research has explored this genre of games mainly in relation to energy expenditure (Daley, 2009; Kemble, et al., 2008; Tan, et al., 2002). The importance of devising a genre classification of games can be related to exploring both differences in attraction to games but also in relation to developing greater understanding of the positive and negative effects of these games.

The area of violence in the media that has been studied extensively in relation to films and television programmes (Carlsson & Von Eilitzen, 1998; Gerbner, Gross & Morgan, 1986, Grobel, 2001; Hutson & Wright, 1998) and music (Anderson, Carnegey & Eubanks, 2003; Christenson & Roberts, 1998; Rubin, West & Mitchell, 2001) predominantly refers to visually portrayed acts of violence, undertaken by one person against another person (Heusamann & Taylor, 2006). However, this definition may be different to the prevalent definition of aggression that studies have used to explore the impact of video game play on. In such studies the definition of aggressive behaviour is often seen as behaviour that has the intent of injuring or irritating another person, which can be physical or nonphysical. This is an interesting distinction in the study of media violence and it can be argued that a direct comparsion of video game violence to other forms of media violence is not approporiate.

It is therefore not surprising that there has been extensive research in the area of video games, exploring the possible effects of playing violent video games. There is heightened concern regarding these types of games because of the explicit presence of violence in the games (Staude-Muller, et al., 2008), and the interactive nature of the violence in the games. Early research in the area of violent video games indicated that up to 89% of games in the market may contain elements of violence, and almost half of

these games may include a form of serious violence taking place against another character (Children Now, 2001). Research has also indicated that almost half of all young children who are playing video games have a preference for these violent games (Buchanan & Funk, 1996). First-person shooter (FPS) games have consistently been developed in terms of graphics and storylines, since the first one of these games was developed in 1992. Recent research has indicated that players of these games are almost exclusively young men who like to spend a lot of their time (2.6 hours per day on average) playing such games (Staude-Muller, et al., 2008).

In direct contrast to violent or shooter games, prosocial games are games that encourage game characters to act in a helpful or prosocial manner in order to progress in the game. Gentile, et al. (2009) and Greitmeyer and Osswald (2009) have conducted comprehensive studies of this genre of games and have argued that the findings suggest that there is a strong relationship between prosocial game playing and higher levels of prosocial behaviour. The research also suggests that the short-term effects of playing these games can be explained through the use of modelling, direction, and reinforcement in the games that can lead to affective, arousal or cognitive effects. The repeated practising of these effects can then lead to long-term changes in the cognitive, emotional and affective states of adolescents and University students. Gentile, et al. (2009) have argued that the use of different cultures contexts and the various methodologies used within these studies also allow for greater inferences to be drawn from the results. However it is important to consider the contexts of such game play and to consider how this context may explain the behaviour of the participants in the study. For example, a child may be playing this genre of game and this is the only type of game that their parents will permit them to play, and one would also expect that in such a family this type of pro social behaviour may also be modelled to children.

Pratchett (2005) reported that within 16- to 24-year olds in UK, racing games were the favourite genre of games. Fischer, Kubitzki, Guter and Frey (2007) argue that racing games are top selling games in the industry and this may be related to attraction to a range of different groups, with games ranging from *Mario Racing Kart* to *Speed Warrior*. These games offer an attraction to both children to adults, and for

both sexes. The use of steering controls to enhance playing and realism is also developing with the graphics of these games. Participants in the Fischer et al., (2007) study were adults in Germany between aged 16- to 42-years. The results indicated a correlation between frequency of playing racing games and competitive and obstructive driving and increased car accidents. A second experimental study also conducted by the authors demonstrated an effect of higher risk associated cognition and effect with participants who had played a racing game rather than a neutral game. The research also found men were significantly more likely than women to take higher risks in computer-simulated road traffic situations than men who had played a neutral game.

An interesting finding in this research relates to gender differences and the finding that whilst women and men were both found to exhibit risk-taking cognition and affect, the risk-taking behaviour in computerised road traffic situations was only significant for male participants. Fischer et al., (2004) argue that the stronger effects of risk-related responding for male participants could be explained by socialisation factors in relation to attraction of males to cars, and research indicating males are more affected by motor sports (Kubitski, 2004), and more attracted to video games than females (Krahe & Moller, 2004). The research indicating that males are more likely to take risks (e.g., Elliot, et al., 2006; Ginsburg & Miller, 1982) and the fact that males play racing games more than females (Kubitzki, 2004), may lead to the internalising of such risk-related cognition, affect and behaviours. Gender may therefore have had a significant effect in this studies. The study used a particular type of racing game that allowed users to break normal driving rules, as the game involved driving around road traffic settings. The use of more realistic measures (related directly to risk taking behaviour) could lead to greater confidence in the findings from such studies

Research on the effects of video game playing

Positive effects of video game playing

Barlett, Anderson and Swing (2009) note that the video game industry has started to recognise and design games aimed at improving cognition and learning, such as brain training games. These cognitive games have been found to prevent memory decline among the elderly (Dustman, Emmerson, Steinhaus, &

Dustman, 1992; Goldstein, Cajko, Oosterbroek, Michielsen, van Houten, & Salverda, 1997) whilst research has also suggested that playing games after a demanding task might help to improve cognitive performance and concentration (Reinecke & Trepte, 2008; Reinecke, 2009).

Videogame playing has been found to help improve perceptual skills and visual attention (Green & Bavelier, 2003), visuospatial cognition (Feng, Spence & Pratt, 2007; Green & Bavalier, 2003; 2006), and spatial skills (De Lisi & Wolford, 2002; Passig & Eden, 2001) where people have to rotate the shapes to see if they fit (e.g., playing *Tetris*). The use of video games has also been explored in relation to surgeon's abilities to perform laparoscopic procedures (Rosser, et al., 2007). This research suggests that video games may offer a viable training platform for jobs that require eye-hand co-ordination and a high level of spatial awareness. Past game playing was associated with greater speed and accuracy although the average time playing in his study was three hours which is significantly lower than the national average time for this age group playing video games generally. However, conflicting evidence has also been reported, indicating the possible negative effects of high level of game playing and cognitive control (Swing, 2008; Bailey, West & Anderson, 2009).

Speed of response and accuracy of responses has been found to be higher amongst game players than non-gamers (Chisholm, Clayton, Theeuwes & Kingstone, 2010) with players of video games shown to respond faster than adults that had played non-action games. The authors suggest that experience with action video games may enhance player's abilities to perform top-down attention control tasks. Donohue, Wordof and Mittrof (2010) argue that the benefits of video game play may be seen to extend beyond judgment of visual modality with their research indicating video players are able to discriminate and judge the sequence of auditory and visual stimuli presented to them, at a higher rate than non-game players.

A large body of research has explored the impact of video games on learning as it appears that video games can offer a very unique avenue for learning to players. Oblinger (2004) argues that video games are potentially powerful learning tools for a number of reasons, including the fact that they support multi-sensory, active, and experiential and problem-based learning. They also favour activation of prior

knowledge to allow progression within a game and provide immediate feedback thus allowing testing of a hypothesis and immediate learning from ones actions. Video games can also include opportunities for self-assessment, and are often becoming important social learning environments that allow for additional learning from different perspectives. The emergence of video games as a key learning tool has further been highlighted by researchers due to their reinforcement ability, the emphasis on continued practising of skills and the active involvement and motivation of the learner in the task (Gentile & Gentile, 2008).

Specialised videogames have also been used by specific business and organisations to teach specific skills training and development such as in the US military, and the US Marine Corps (Prensky, 2001). Commercially available training videogames have also been found to be effective in teaching strategic management (Lynn, Brady, Davis, 2009) teaching traditional subjects such as , algebra or biology (Corbett, Koedinger & Hadley, 2001; Ybarrondo, 1984), in improving computer skills (Subrahmanyam et al., 2000), and in skill-based learning (Gopher, Weil, & Bareket, 1994). Educational games have been found to be related to good academic achievement with children (Hasting, Karas, Winsler, Way, Madigan & Tyler, 2009), although contrasting findings have been reported indicating time spent playing games was positively was related to aggression and negatively to school performance (Anderson et al., 2007: Gentile et al., 2004).

Videogames have been used as a medium for physiotherapy or occupational therapy in a variety of different settings (Griffiths, 2005). They can be used to distract young patients from pain during prolonged invasive cancer treatment (Beale, Kato, Marin, Bowling, Gutherie & Cole, 2007), as a form of psychotherapy with children (Gardner, 1991) and in physical therapy and in rehabilitation following traumatic brain injury (Jannink et al., 2008). Research has suggested that the use of videogame intervention significantly improved treatment adherence and knowledge of illness, in young adults undergoing treatment for cancer (Kato, Cole, Bradlyn, Pollock, 2009), and to improve diabetes self-care management (Liberman, 2001; 2006). Videogames have also been used to work with people with disabilities to develop social skills in people experiencing social difficulties (Gaylord-Rosset et al., 1984) and to develop specific life skills (Hollingsworth & Woodward, 1993; Masendorf, 1993; Okolo, 1992).

Research has suggested that videogame playing may lead to an increase in obesity and a reduction in overall activity levels (Berkey, et al., 2000; Carvalhal, Padez, Moreira & Rosada, 2007; Subrahmanyam, et al., 2000; Vanderwater, Shim & Caplvitz, 2004). However, other recent research has disputed this claim failing to find a link between videogame play and obesity or physical activity (Wack & Tantleff-Duff, 2009). The recent introduction of active videogames ('exergames') has also become a focal point of research exploring the possible benefits. With much recent emphasis on the role of schools and parents in providing children with relevant education regarding the health benefits of sports and healthy lifestyles, video games have been explored as possible avenue for the teaching of physical education to children in schools. Hayes and Suberman (2007) have highlighted the possible benefits of such an approach using commercial sports games that children are attracted to, and include stimulation of physical and sports activities for physical education curricula. Similarly, Streisand (2006) argued that electronic games have previously been seen as enemies of physical health and activity, but may be turning into valuable tools in the promotion of health and fitness and exercise in the battle to improve young people's education and overall lifestyles (Papastergi, 2009). Daley (2009) conducted a meta-analytic study of all of the studies exploring health benefits of active videogames and concluded that although there are some benefits of these games, they did not involve as much energy as the authentic versions of the games. Recent research has also indicated that physical health may be better for gamers but mental health could be poorer (Williams, Yee & Chaplan, 2008).

It is interesting to consider the fields of video game research that have resulted in a large amount of research, namely the genre of violent video games. In the exploration of the positive effects of video game play, regardless of content, Bartlett, Anderson and Swing (2009) note that the reduced amount of research in this area means that large meta-analytical studies for example are not possible. One might also consider it interesting that the early research in 1990's indicating a positive effect of game play, such as that on brain training games that were found to reduce memory decline among the elderly (Drew & Waters, 1986; Dustman, Emmerson, Steinhaus, & Dustman, 1992; Goldstein, Cajko, Oosterbroek, et al., 1997), have been uncontested. In contrast to this, the research on violent video game play has constantly

strived to confirm or discredit any research done in 1990's, with a reason often cited that these games were less sophisticated on many levels during this time, in comparison to today's games.

An area of increasing research exploring the positive effects of video games is related to the effects of serious games as learning tools and the development of games that increase prosocial behaviour and responses amongst players

Gentile, Anderson, Yukawa, et al., (2009) have reported an increase in prosocial behaviour in children, adolescents and adults following prosocial video game play, games that require the player to act in a prosocial manner in their game play. This research involved an experimental, cross-sectional and longitudinal study in Japan, Singapore and US. However, the studies by Gentile and colleagues relied on self-report and/or used methodology that involved the measurement of prosocial behaviour towards a hypothetical partner (Greitemeyer & Osswald, 2010). The research on helping behaviour has found that there are a number of different circumstances and processes that may affect our decision to help another person. We may often engage in a consideration of consequences before deciding to help (Schawartz & Howard, 1981), with prosocial behaviour being less likely when we believe consequences to be high for us (Piliavin, Dovidio, Gaertner & Clark, 1981). The research on video game effects on helping behaviour considered this research in a recent study and found a positive effect of prosocial video games on helping behaviour even when these consequences are believed to be high for participants.

For instance, Greitmeyer and Osswald (2010) had participants play a prosocial or neutral video game and then witness an experimenter and a confederate have an argument where the experimenter was believed to be being harassed and physically pulled from the laboratory by a male. The number of people that intervened was scored and the findings revealed that 10 out of 18 people who played prosocial game for 8 minutes prior to the argument helped in comparison to 4 of 18 people who played a neutral game. However, the research took place in a laboratory setting and the participants may have felt that they were not in as much danger as if in real-life situation. In the same study, the authors report that 1% of participants choose to help another experimenter who was in need of participants for another study after playing prosocial games, compared to 68% of those who played a neutral game. An important variable in

engagement of helping behaviour is the relationship between the bystander and victim. If the victim is known by the person, the likelihood of intervention is greatly increased. It has also been shown by Valentine (1980) that a relationship can be created by strangers through a gaze. It has been demonstrated that a gaze, during a time of need of assistance, will increase the likelihood of in intervention by the bystander that shared the gaze. In this sense, the relationship that the participants may believe they have towards the college and the psychology department and staff, may have increased the likelihood of helping behaviour.

Research on the effects of prosocial game play has also explored the effect of playing such games on reducing aggression (Greitemeyer & Osswald 2009). The research suggests that prosocial games may reduce the hostile expectation bias and the accessibility of aggressive thoughts in gamers. Using story stems and word-completion tasks to assess players' aggressive cognitions the studies did not explore player's direct aggression in a real world setting. The authors concede that the games that they used in the study were older than the average age group who play these games, although they did not expect that there would be a significant difference in the effects found with newer games. The study also used a small sample of undergraduate students (n=78) but point out that the effect sizes found were medium to large in both studies. The authors suggest that the General Learning Model (Buckley & Anderson, 2006) may explain the effects found in this study, with the content of the video games affecting cognitive associations that in turn affect aggressive behaviour.

Recent research has explored the impact of prosocial game play on children in an experimental setting (Saleem, Anderson, & Gentile, 2012). The research involved children aged 9 to14 years (n=191) randomly assigned to play one of three types of games, either a violent video game, a neutral video game, or a prosocial video game. Despite limitations, the researchers argue that in the tangram method used in the study to assess helpful and hurtful behaviours, the results suggest that prosocial video game play led to an increase in helpful behaviour in the short-term. The results also indicated that playing a violent video game led to an increase in hurtful behaviour and a decrease in helpful behaviour. The research is the first to explore the impact of prosocial content on children's behaviour in a short-term context, and is noteworthy because of its use of children's video games. Anderson, Gentile and Dill (2012) argue that

due to the limited amount of real prosocial games that presently exist, there are few studies exploring the link between these games and short-term and long-term prosocial effects. Therefore, greater research is needed in the area in order to fully understand the effects of prosocial games.

Negative Effects of videogame playing

The research indicating a negative effect of video game play has focused on general video game play, but in particular on the impact of violent video game play. In terms of general adverse effects of videogame playing on health, early research in the field highlighted a link between extended video game play and the development of physical pain (Bright & Bringhurst, 1992; McCowan, 1981; Miller, 1991), including 'Nintendinitis' or Nintendo thumb (Brasington, 1990; Siegal, 1991) and epileptic seizures (Chuang, 2006), joint, muscle, and skin problems (Loftus & Loftus, 1993). Videogame playing has also been argued to be related to reduced school performance (Anand, 2007; Anderson & Dill, 2000; Anderson, et al., 2007; Gentile, et al., 2004; Gentile, et al., 2004) and with decreased success in college (Anand, 2007; Anderson & Dill, 2000). Bartlett, Anderson and Swing (2009) suggest this finding may be explained in terms of displacement effect, where the amount of time spent playing videogames reducing the amount of time that young people can spend studying and/or doing coursework. Chan and Rabiowiz (2006) suggested that videogame playing may be associated with self-reported lower attention spans and inattention in a college student sample. As videogame usage increases, academic performance has been found to be associated with such a decrease in college students in US (Anand, 2007).

One study has suggested that videogame playing can be associated with risk behaviour in late adolescence and young adulthood (18 to 26 years), with those who played videogames reporting higher levels of drug use, alcohol drinking, and poorer relationships with friends and family (Padilla-Walker, et al. 2009). This study also found that among females, videogame use was associated with lower self-worth. The authors argued that videogame use may be a risk factor for emergent adulthood, at a time when young people are actively forming their personal identities. Pratchett (2005) reported that within British 16- to 24-year olds, racing videogames were the favourite genre.

There is heightened concern regarding the content of games, in particular in relation to violent games because of the explicit presence of violence in the games (Staude-Muller, et al., 2008), and the interactive nature of the violence in the games. Early research in the area of violent videogames indicated that up to 89% of games in the market contained elements of violence, and almost half of these games included a form of serious violence taking place against another character (Children Now, 2001). It may be argued that the area of violent video game research during the past ten years can be seen as one of the most contested fields of psychological research. Ferguson (2013) has recently argued that the ruling by US Supreme Court on psychological research in the field of violent video games as unpersuasive and comprised of methodological flawed research may be a real threat/shock to the psychological field. Despite this argument it seems impossible to ignore the depth of research that exists in the field of violent video game research, and as such the current review aims to set out the main findings in the field during the past fifteen years, as this represents a key time when video games began to develop in terms of realism, graphics and attractiveness. The research exploring the impact of violent videogames has focused on four main areas: (i) desensitisation (ii) aggressive cognition iii) aggressive behaviour, and (iv) aggressive affect.

Research on the effects of violent video games

Desensitisation

Studies conducted with children and adolescents suggest that videogame exposure correlates significantly with an acceptance amongst the children of physical aggression and decreased empathy (Anderson, Gentile & Buckley, 2007; Funk, et al., 2004; Krahe & Moller, 2004; Lemmens & Bushman 2006). Similar findings have been reported with studies conducted on young adults (Bartholow, Sestir & Davis, 2005; Anderson et al., 2004). Bartholow, Bushman and Sestir (2006) explored the role of the cognitive component of desensitisation to violent media, arguing that most previous research on this area has explored the emotional component of this effect. The researchers suggested that repeated exposure to

violent videogames is *"reflected in the brain as blunted evaluative categorisation of violent stimuli"* (p.533). Sigurdsson, Gisli, Gudjonsson, Bragason, et al., (2006) found no significant correlation between empathy and exposure to violent media, such as violent films and videogames. The study revealed key gender differences in relation to violent video game play and so may not be relevant to female gamers, with only 3% of females reporting weekly game use, as opposed to half of the male young adult players.

Bosche (2009) conducted an experimental study of short-term violent video game play using actual game play as the measurement of desensitisation. The author argued that if a person is desensitised to violence, there should be no hesitation or an effect on their reaction time. Research on German male undergraduate students (n=50) suggested that participants who played violent video games performed at superior rate to those playing non-violent video game. Therefore, the researcher argued that players can distinguish between real and virtual violence, evident from the performance levels within the video game conditions. However, the games that were used within the study may offer an alternative interpretation of the results. Participants were asked to ether hit a rabbit with hammer (violent game condition) or feed the rabbit (non-violent condition) depending on the game condition to which they were assigned. The violent game condition did not include real-life violence or other visual factors often associated with violent video games such as blood or death of characters. The study could be further improved in terms of ecological validity if it included the participant's measurement of reaction to real life violence. The participants were recruited as naive video game players but the methodology to exclude participants for previous play was not stringent. Therefore, the participant could be desentised to violence before playing the game. The author acknowledge that the actual actions required to play the game in the non-violent condition may also be the reason for the reaction time difference with the action of feeding rabbits taking longer than it does to hit a rabbit. The role of arousal in increasing performance must also be considered in discussion of the different reported reaction times in the two conditions.

Staude Muller, Bliesener and Luthman (2008) explored the effect playing a FPS games on desensitisation in a group of 42 German adult males. All participants played one of two versions of a game with the level of violence different in each condition. Arousal levels and emotional and physiological responses to violent stimuli were then measured. The authors argued that the results did not provide evidence for the arousal hypothesis with participants actually more relaxed after playing for 20 minutes. The results also showed that the men who played the violent version of the game had significantly weaker reactions to later aversive stimuli, indicating desensitization to the violent stimuli following violent video game play. The research used the same game in both conditions but the consequences of the actions can be seen to be different in the low violence version and this may have impacted on the results found.

Bushman and Anderson (2009) conducted an experimental study on the short-term effects of playing violent video games on helping behaviour that is considered a key element of desensitisation following exposure to violent media. Undergraduate students (n=320) were asked to play a violent game in a laboratory that was followed by the acting out of a fight outside of the laboratory, where one person was left injured. The student's reaction times to help were recorded and rated as likelihood to perform helping behaviour. The results indicated that the students who had played the violent video game were more likely to take longer to respond to the incident (450% longer), not to hear the incident, or to consider the incident as not serious. Some of these responses may be attributed to the fact that the experiment took place in a laboratory and with psychology students so the students may be suspicious of the overall aim of the study.

The helping cycle (Latane & Daly, 1970) suggests that people only engage in helping behaviour when they have noticed a situation and feel that they have the skills necesary to deal with this emergency. As a student in a University laboratory, students may not feel they are the most qualified person to deal with this and this may inhibit their helping behaviour. The research also indicates that people are more likely to help people if they feel their predicament is not their fault (Weiner, 1980) and participants in this situation may feel that the victim was partly responsible for their fall as they were arguing with someone at the time of the incident. The participants may also be fearful to help due to any danger to themselves in this situation as the victim was hurt after an argument with another person. The authors argued that the

results suggest exposure to violent media can become numb to pain and suffering of others. It would be interesting to consider this research in relation to additional personal variables (for example willingness to help in other situations, levels of empathy) as these were not considered in the present study. The role of arousal must be considered in relation to the attention that people may give to situations around them. Additionally, the lack of attention to the incident could be attributed to the increased arousal after violent video game or film, rather than due to desensitisation to others suffering.

Aggressive Cognition

It has been argued that violent media may increase the accessibility of aggressive thoughts and this may be one of the main routes that explain any effect of increased aggressiveness after exposure to violent video games (Anderson & Bushman, 2001; Anderson & Dill, 2000). Studies with children have reported significant correlations between high patterns of violent video game play and aggressive cognition (Anderson et al., 2004; Anderson, Gentile & Buckley, 2007; Dominick, 1984; Colwell & Payne, 2000; Funk, Buchanan, Myers & Jenk, 2000;) whilst others have reported a correlation with violent video game with hostility (Anderson & Dill, 2000; Anderson, Gentile & Buckley, 2007; Gentile et al., 2004). Williams and Skoric (2005) found no evidence of increased aggressive cognition with a sample of 14- to 68-year olds (n=213) playing violent massively multi-player online role play games (MMORPGs). However, playing MMORPGs may be qualitatively different to other violent video games, as they involve more socialising and use of non-violent strategies and often require co-operative behaviour (Gentile, 2005). Similar to many other cross-sectional studies, this research involved reliance on self-report and on a measure of aggressiveness that related to verbal aggression. It could be argued that direct aggressive behaviour, rather than verbal aggression, is the main type of aggression observed in violent video games (Gentile, 2005), and as such a meaure of verbal aggression may not be the most relevant form of aggression to explore in this study.

The research exploring children's cognition has often employed techniques such as story completion tasks (Eastin & Griffiths, 2006; Kirsh, 1998) where children are asked to complete ambiguous story lines after playing violent video games and the aggressive story lines used are scored to indicate an

aggressiveness score. Funk, Buchanan, Myers and Jenks (2000) used this method and found some increase in aggressive thoughts in a small sample of 8- to 12-year olds (n=35) but this was not significant. A similar finding was reported by Funk, Buchannan, Jenks and Bechtoldt (2003) who found no effect of violent video games on aggressive story completions with a similar sized group of 5- to 7-year olds and 8- to 12-year olds.

Research with adults has employed various techniques in an attempt to measure aggressive cognition after playing violent video games. Carnegey and Anderson (2005) asked students to complete a word fragment task and found a significant increase in aggressive cognitions after playing a racing car game that involved scoring of points for killing pedestrians. Other research has found similar effects using the same task (Anderson et al., 2004; Carnegey & Anderson, 2002; Bartlett, Harris & Bruey, 2008; Carnegey & Bushman, 2005; Cicchirillo & Chory-Assad, 2006; Guimetti & Markey, 2007; Markey & Sherer, 2009) and with reading reaction time tasks (Anderson & Dill, 2000). Uhlmann and Swanson (2004) found that after playing violent video games, participants were more likely to associate themselves with aggressive traits and actions as measured by the Implicit Association Test. However, the nature of the self-report questionnaires regarding violence in video games that participant played may have affected the manner that participants later answered questions in this research. Ivory and Kalyanaraman (2007) have argued that violent content does not lead to increased accessibility of aggressive thoughts. The researchers conducted a study with 120 US students and found that the group of participants who played the violent video game did not differ significantly from the group who played the non-violent game as measured by a word association tasks that required participants to rate aggressive and ambiguous words as similar. The authors conceded that the arcade style games that they used in the study may have to be considered in relation to the generalisability of the findings to games on different consoles. The sample used in the study was comprised of mainly female students.

Aggressive Behaviour

Numerous short-term experimental studies with children involving the playing of violent video games have reported an increase in aggressive behaviour with children as young as 4- to 7-years of age (Irwin &

Gross, 1995; Shutte, Malouf, Post-Gorden & Rodasta, 1988; Shutte, Malouf, Post-Gorden & Rodasta, 1988; Silvern & Williamson, 1978). Short-term studies with adolescents have found that those that play violent video game were more likely to use increased aggressive behaviour compared to those that played non-violent video games (Anderson, Gentile & Buckley, 2007; Dunkin & Barber, 2002; Konijin, Bijvank & Bushman, 2004). However, much of the research in this area is based on adults as there are ethical considerations with asking children to play violent video games, many of which are not designed for younger children. Unsworth Devilly and Ward (2007) recently attempted to overcome this by asking children to play a particular video game (*Quake II*) but with a pre-requisite condition that all children must have played this game before. This may have addressed the ethical issues but does not allow for consideration of short-term effects of game playing alone. Furthermore, previous game play experience may be a possible reason for findings.

Numerous studies have reported a correlation between children who report high levels of violent game play and self-report or peer and teacher report of aggressiveness (Anderson, Gentile & Buckley, 2007; Colwell and Kato, 2003; Colwell & Payne, 2000; Dominisk, 1984; Fling, Smith et al., 1992; Funk & Buchanan, 1996; Funk, Buchanan & Germann, 2000; Gentile, Lynch, Linder & Walsh, 2004; Krahe & Moller, 2004; Walsh, 2000;). Similar findings have been reported with studies of undergraduate students, with higher levels of violent video game play found to correlate with aggressive verbal and physical behaviour (Anderson & Dill, 2000; Anderson et al., 2004; Anderson, Gentile & Buckley, 2007; Bartholow, Sestir & Davis, 2005; Carnegey & Anderson, 2005; Eyal, et al., 2006; Uhlmann & Swanson, 2004).

Experimental research conducted with adult participants has employed a number of different ways to measure aggressive behaviour, with one of the most common methods being the competitive reaction time tasks. In this task, participants are told the task is testing reaction times and who can press a button fastest after hearing an auditory cue and they are told that the loser of the trials receives a blast of noise. The aggressiveness measure is obtained by calculating the intensity of noise selections the participants make to pass to their partners. These studies have reported that the participants who played violent video games demonstrated higher levels of aggressiveness than participants who played non-violent video

games prior to the competitive reaction time task (Anderson & Dill, 2000; Anderson & Murphy, 2003; Anderson et al., 2004; Anderson, Gentile & Buckley, 2007; Anderson & Carnegey, 2009; Bartholow & Anderson, 2001, 2002; Bartholow, Sestir & Davies, 2005; Carnegey & Anderson, 2005; Persky & Blascovich, 2004).

Fischer, Kastenmuller and Greitmeyer (2009) recent study with with German students employed a measure of aggressiveness that involved the administration of hot chilli sauce to an opponent after playing one of two sports games, one that involved hurting another and one that involved no harm to other characters. The results indicated that the participants who played the violent game were more likely to act aggressively, as measured by the choice of administering the chilli sauce to an imaginary opponent. The violent game used in the study was a game of boxing and the authors conceded that this socially acceptable form of violence may have affected the results of the study. The sample used was mainly female students and so the results may have also been affected by gender differences, although as the research indicates that it is mainly males who play violent video games therefore the female participants in this study may not have been desensitised to violent video games.

Other experimental studies have shown a similar pattern of results using different measurements of aggressive behaviour in adults after exposure to violent video games. Ballard and Linenberg (1999) employed a technique of asking participants how long an opponent should hold their hands in ice water, whilst others have used the prisoner's dilemma game as an indirect measure of aggression (Brady & Mathews, 2006; Sheese & Graziano, 2005). These studies have used small sample sizes of college students and so the results that they reported may be of less significance in relation to the effects of the violent video games that were played. These tasks can be criticised for the ecological validity of the measurement of aggressive behaviour, where the task of administrating a noise blast or punishment in a laboratory setting may not be a genuine representation of physical aggression in the real world (Gentile & Gentile, 2005).

Hopf, Huber and Weib (2008) conducted a longitudinal study in Germany with 314 adolescents who were 12 years old at initial testing and 14 years at time two. The research explored exposure to media

violence and violent video games and found that exposure to violent video games was the strongest risk factor for violent criminality and antisocial behaviour. The research highlighted the fact that these children's exposure to violent media and video games in particular was found at the early stages of adolescence and this was felt to be a significant factor in later aggressive behaviour. Gentile and Gentile (2005) conducted a three year study with a large number of participants (430 children who were aged 7- to 11-years, 607 who were aged 14 years, and 1441 undergraduate students. This study explored the correlations between violent video game play and aggressive cognition, personality and behaviour. The authors argued that across all three groups of participants, exposure to violent video games was associated with a direct observation of an increase in direct aggressive behaviour and in hostile attribution bias that increased aggressive behaviour over the long-term. For the younger children, the research indicated that frequent playing over a weekly basis correlated with hostile attribution bias and arguments with teachers. With the college sample, playing was correlated with physical aggression and predicted trait anger. The authors acknowledged that there was a difficulty with the measurements of retroactive distributed practice measures used to measure media game experience (Gentile, 2005).

Anderson et al. (2008) conducted a recent study exploring the effects of violent video games on children and adolescents and explored the differences found in two different cultures in relation to violence. The results suggested that habitual playing of violent video games leads to increased physical aggression after a number of months in children and adolescents. As the research found similar effects in both the Japanese sample and US sample, the researchers concluded that the effects were regardless of the levels of societal physical violence and were found in individualistic and collective cultures. The genrealizablity of the studies can be questioned because of a reliance on different measures of aggression in the three samples with the Japanese younger children being asked six items from Buss Perry Physical Aggression Scale (1992) and the Japanese older children asked just one self-report measurement of frequency of physical aggression (i.e., have you kicked/punched someone in the last month). The US sample used a measure of aggressive behaviour that was an index of teachers, peers and self-report of physical aggression during the past year. The time lag between measurements of the sample was also short, with intervals of only 3- to 6-months.

Slater, Henry, Swain and Anderson (2003) conducted an extensive study over a two-year period with 2,550 children aged 11- to 13-years of age. The study explored media violence and did not measure video game violence alone. However, the authors suggest a downward spiral effect can be observed that may be relevant to the effects of violent video games on young people. This effect was seen in the increased aggressive cognition and behaviours after longitudinal exposure to such violence. This can increase young people's interest in, and desire to access increased amounts of violent media and this can again lead to increased aggression in these young people. It could be that these young people are then more attracted to violent video games that are interactive and engaging after prior long-term exposure to violent media. Despite the apparent strength of this study in terms of amount of participants and the time period employed, the study can be criticised for the insensitive measurements of aggression used.

Aggressive Affect

The research on aggressive affect has explored the concept of hostility and the development of hostility after playing of violent video games. Ihori, Sakamoto, Kobayashi and Kimura (2003) tested 10- to 12-year old children (n=807) and measured general video game play over a single school year. They found that those that played more video games displayed a higher level of hostility at a later date. They also found that both boys and girls who increased their amount of video game playing related to later displays of indirect aggression, and for boys the amount of physical aggression was increased. Anderson, Gentile and Buckley (2007) found increased hostility and anger in adolescents who were exposed to high levels of violent video games whereas Gentile, Lynch, Linder and Walsh (2004) found a significant effect of trait hostility with a large group of 10-to 12-year olds (n=607). The research with adults in this area has found similar findings using the Buss Perry Aggressive Questionnaire (1992) to measure hostility and anger (Bartholow, Sestir & Davies, 2005) and in terms of revenge motivation (Anderson et al., 2004) with students who have self-reported long-term exposure to violent video games. Farrar and Krcmar (2008) reported no significant finding of increased hostility in a large group of students (n=227).

The experimental studies of the effect of violent video games on aggressive affect have concentrated on outcomes related to frustration levels in children. Frustration has been found to correlate positively with

overt aggression, and so the interest in the area of frustration is important in developing a better understanding of aggressive behaviour (Chumbley & Griffiths, 2006). Funk, Hagen and Schimming (1999) conducted a small study on 35 children aged between 7 and 9 years. The results did indicate that the children displayed higher frustration levels after playing violent video games, but this result was not significant. Higher levels of frustration were also observed in 12- to 18-year olds after playing violent games (Ballard, Pannee, Engold & Pannee, 2001), although the authors acknowledged that the difficulty of playing the violent type of game may be the reason for the frustration levels in that group. Flemming and Rickwood (2001) found that violent game play increased state anger in a group of 8- to 12 year old children. The main difficulties with research in this area are related to the issue of small samples of children that make it difficult to obtain any significant results (Gentile & Gentile, 2005). Ballard, Pannee, Engold and Hamby (2001) examined a small group of 12- to 18-year olds (n=41) and measured their playing of violent games over three weeks with a minimum play of three times a week. The research found reduced displays of emotion following this longitudinal playing of games. Research has also found an effect of violent video games on aggressive affect in adults. Greater hostile feelings have been found to be a significant aggressive affect after playing violent video games (Anderson & Ford, 1986; Arriaga, Esteves, Carneiro & Monteiro, 2006; Ballard & Weist, 1996; Ballad & Pannee, 2001; Carnegey & Anderson, 2005; Markey & Sherer, 2009). Barlett, Harris and Baldassaro (2007) reported a significant increase in hostility after playing First Person Shooter Games, as measured using story stems.

Other Effects

Gender, Linder and Walsh (2004) conducted an extensive study with a large sample of 14-year olds and found that greater exposure to violent video games correlated with reduced school performance and more hostility and arguments with peers. There was a reliance on self-report within this study in relation to limits placed on student's use of video games and the research also used teachers to administer some of the questionnaires regarding performance and fights. Similar findings have been reported by Gentile, Lynch, Linder and Walsh (2004) who found that amount of video game play related to grades in a cross-sectional study of 617 adolescents aged 14 years.

Other research has monitored heart rate, blood pressure, and skin conductance as physiological indicators of arousal. Calvart and Tan (1994) found that adults heart rate was increased following violent video game play and a similar effect has been reported among 8- to 12-year olds along with an increase in self-reported arousal (Flemming & Rickwood, 2001). However, Irwin and Gross (1995) have reported contradictory findings when they failed to find any effect of playing video games on heart rate with a group of 8- to 9-year old children. Similar findings were also reported by Winkel, Novak and Hopson (1987). Anderson, Carnegey, Flanagan, Benjamin, Eubanks and Valentine (2004) found increased heart rate for all video game played with violent game play leading to an increase in blood pressure in adults.

Criticism of research exploring the effects of violent video games has highlighted a number of general methodological difficulties with the research. Small sample sizes have been used in many of the studies with a reliance on convenience samples of participants that often results in research conducted with undergraduate students. The games employed in short-term experimental studies are at times not always matched in terms of additional structural and other factors (Gentile, 2005). In the experimental studies, participants are allocated to the condition randomly and so will often play violet or a non-violent video game based on the condition they are assigned to. It could be argued that the effects of playing violent games may be different if people chose to play these games themselves. Similarly, Anderson, et al., (2010) have also argued that the amount of time that participants are asked to play video games in an experimental condition is often for a far shorter time than participants would play for if choosing to play the game themselves. Ferguson, Miguel and Hartley, (2009) argue that violent video games are not predictive of youth violence and aggression. Ferguson and Kilburn (2010) have also argued that much of the research in the field of violent video games have used unstandardized measures of aggression that can inflate effect size estimates.

Video game addiction

There has been much dispute amongst video gaming scholars regarding the existence and prevalence of video game addiction. One of the main difficulties within this area relates to the diagnosis and identification of a behavioural addiction, such as addiction to exercise, the internet, or to video games.

Traditional views of addiction have been related to a view of addictive chemical agents such as drugs (e.g., alcohol, nicotine and heroin). To date, many approaches to video game addiction have utilised and/or modified Brown's (1993) criteria to examine addictive tendencies (i.e., salience, euphoria or relief, tolerance, withdrawal, conflict and relapse). This definition is similar to the criterion classification used within other research that has focused on the existence of specific DSM-style criteria to establish the level of damage to person's functioning as a result of pathological gaming and addiction (Griffiths & Hunt, 1995; Grusser, Thalemann & Griffiths, 2007; Gentile, 2008).

Similarities between gaming and gambling have also been highlighted as a valid reason for using the DSM criteria for diagnosing pathological gambling in order to define addiction to video games. Research exploring internet addictions have also used scales based on the DSM-IV diagnostic criteria such as Young's Internet Addiction Test (IAT) (Young 1996; Widyanto & McMurran, 2004). Griffiths (1996; 2002; 2005; 2008) has argued that any behaviour that fulfils the revised core criteria of addiction (salience, mood modification, tolerance, withdrawal, conflict and relapse) can be defined as a behavioural addiction. In relation to video game play salience refers to the activity becoming the most important activity in the person's life, mood salience relates to the feelings that the person reports as a consequence of playing video games, and tolerance is seen as the need for increasing playing time in order to achieve former feelings achieved. Withdrawal symptoms are related to unpleasant states that occur when the player is no longer able to play, conflict refers to interpersonal and intraspychic conflicts that may occur for the player due to their video game playing and relapse in a video game playing scenario would be associated with a tendency for the player to return to earlier patterns of playing, after periods of abstinence (Griffiths, 2000).

Gentile (2009) conducted a comprehensive US study of 1,178 children and adolescents aged 8- to 18-years, and found over eight per cent of the participants exhibited pathological patterns of play. The study used self-administered online questionnaires to obtain a nationally representative sample of young people and asked people to complete an 11-item scale based on DSM-IV (2004) criteria for pathological gambling. The results suggested that 'pathological' gamers were spending twice as much time playing, were more likely to have consoles in their bedrooms, to report feeling addicted, and were twice as likely

to be diagnosed with attention problems and to have difficulty in school. The generalisability of the findings may be limited by the online methodology that allows for the inclusion of children with access to the internet only, and the response scales that allowed for the use of the response 'sometimes'.

Similar findings have been reported with adolescents in Spain with almost ten per cent of adolescents meeting the DSM-IV-based criterion for video game playing addiction (Tejeiro Salguero & Moran 2002). The researchers designed a Problem Video Game Playing Scale (PVPS) and administered this to 223 Spanish adolescents aged between 13 and 18 years. An additional study in US found that 15% of young people could be classified as addicted to video game playing also using the PVPS (Gentile & Gentile, 2005). Addiction to video games in adolescence has also been associated with lower school grades than is found in their peers (Gentile & Anderson; 2004; Gentile, Lynch, Linder, et al., 2003) with researchers arguing that adolescents may be more vulnerable to online game addiction, due to the fact that adolescents spend a large amount of time gaming generally (Grusser, Thalemann & Griffiths, 2007).

Skoric, Ching Teo, and Lijie Neo (2009) conducted a study with children aged 8- to 12-years and found that addiction tendencies were negatively related to scholastic performance, but differentiated clearly between addiction and high game play. In this research there was no relationship found between video game engagement (and high amounts of play) and school performance. The study used an 11-statement scale for assessment of addiction tendencies that was based on Brown's (1991; 1993) video game addiction criteria and on DSM-IV (2004) criteria to assess engagement tendencies. The authors suggested that the children who were high level gamers were also spending a large amount of time completing their homework and this is the reason that they may to not suffer academically. The authors concede that there may be difficulties with children lacking an understanding of the questions asked within the study, and this may have affected the results obtained.

In relation to adult gamers, Grusser, Thalemann and Griffiths (2007) found that almost twelve per cent of adult video game players (n=7,069) reported at least three of six criteria of addictive behaviour. The criteria used in this study were based on WHO ICD-10 criteria for dependence syndrome. These players can therefore be seen as exhibiting patterns of pathological gaming according to the authors. Using

adolescent samples, Griffiths and Hunt (1995) sampled 400 adolescents and found that 19.9% were 'dependent' on video games whilst Griffiths (1997) reported that 37.5% of 147 adolescents were 'addicted' according to the checklist used in the research. In the context of this research on addictive video game play it is interesting to consider recent research which found that 18 different instruments have been used in 63 quantitative studies, which is made up of 58,415 participants screened for problematic and/or addictive gaming (King, Haagsma, Delfrabbro, Gradisar & Griffiths, 2013).

The DSM-5 has recently included internet gaming disorder, defined as "persistent and recurrent use of the Internet to engage in games, often with other players, leading to clinically significant impairment or distress" in Section III of the DSM-5. The substance use work group for DSM-5 recommended that the subtype of problematic internet use (internet gaming disorder [IGD]) was included in Section III of the DMS, as a condition warranting more clinical research and experience before it might be considered for inclusion in the main book as a formal disorder. Griffiths, King and Demetrovics (2014) argue that the reason internet gaming disorder has not been included in the main text of the DSM-5 is due to the lack of standard diagnostic criteria to assess gaming addiction, but also due to a lack of widely accepted definition of problematic or addictive video gaming. Petry & O Brien (2013) suggest that IGD will not be included in the DSM as separate mental disorder until more research is conducted on prevalence rates, ethology, defining features of the disorder and the reliability and validity of criteria used to screen for problematic and/or addictive gaming.

Researchers have argued that online gaming may be potentially more problematic and/or addictive than offline gaming (Griffiths & Davies, 2003; Griffiths, 2010a; Grusser, et al., 2007). This may be due to the ability to play endlessly against others and the engagement and rewards that can be associated with this. A study exploring the role of online gaming in the lives of those that play these games indicated that players who viewed their own playing as excessive were also likely to display (or report) the core components of addiction (Chappell, Eatough, Davies & Griffiths, 2006). There is a need to consider these findings in relation to research on addiction and internet behaviour. Recent studies in different countries

suggest that the population prevalence of Internet addiction and ranges from 0.3% in the United States to 1% in Norway and other countries (Shaw & Black, 2008; Bakken, Wenzel, Gotestam, et al., 2009).

Researchers have also pointed to the need to distinguish difference the between addiction and high levels of playing or high engagement (Charlton & Danforth, 2007; Griffiths, 2008; 2010; Skoric, Ching Teo, & Lijie Neo, 2009). Griffiths (2008) pointed out that playing excessively does not necessarily mean that the person is addicted, and that there must be negative detrimental effects as a result of excessive game playing for the person to be considered addicted. Charlton (2002) has argued that Brown (1991; 1993) did not distinguish between high engagement and addiction in the criteria that he put forward in relation to video games. In a factor analytic study, Charlton (2002) devised the Engagement-Addiction Scale for video games, based on the six criteria for addiction put forward by Brown. The analysis revealed that tolerance, euphoria and cognitive salience loaded on the engagement dimension whereas the remaining criteria loaded on the dimension of video game addiction.

Przybylski, Weinstein, Ryan and Rigby (2009) have explored different styles of engagement in video game play and the effects of this in a relatively large sample of male adults (n=1,324). The researchers argued that low levels of basic need satisfaction was found to be associated with obsessive passion, higher amount of play, conflict after playing, and with low game enjoyment. Furthermore, the researchers argued that the use of a theory-based approach, such as the self-determination and dualistic model of passion used in this study, will allow a greater understanding of motivation to play and the consequences of playing video games. The authors argue that the current research suggests that the motivation of players for playing games can be understood in terms of the psychological supports that players experience in their daily lives. They argue that people who have not had their needs met adequately and do not have satisfying lives may be at risk of developing playing styles that *are "disordered patterns characterised by long hours of compulsive, tense and unenjoyable play"* (p.491).

Yee (2006) reported that eight per cent of players of online games typically play for at least 40 hours per week, and almost half of the gamers considered themselves addicted to these online games. Griffiths (2007) reports that important consideration must be made in relation to the finding that a significant

minority of young people aged 12- to 16 years claim to be spending over 30 hours per week playing video games. Perhaps the real concern should be related to the longitudinal difficulties or problems that may arise from this pattern of behaviour amongst young people. There is a need within this area of research to have on-going up-to-date research as the games are getting more advanced and could be regarded as being more rewarding as they become more sophisticated (Griffiths, 2007).

The structure of videogames

Due to the structure of videogames they can be seen as optimal learning environment (Gentile & Stone, 2005; Gentile, 2011) and this can be a possible explanation for the attraction to and maintenance of gaming behaviour, but can also explain some of the effects of videogames on players. Research has also explored the use of key learning principles and best practice in instruction to understand the powerful influences of, and attraction to, different video games (Gentile & Gentile, 2009; Swing, Gentile, Anderson, 2009; Swing & Anderson, 2008), that Swing, Gentile and Anderson (2008) have related to the use of established instructional principles in gambling. In both gambling and gaming, the use of progressing levels of difficulty and of practising several problem solving-strategies, which may allow for a greater transference of skills to different settings. The researchers also argue that the structure of videogames with increasing levels of skill that requires the use of specific skills as a prerequisite to move to next levels and can be similar to the learning of sounds when a person is learning to read. Gentile (2011) claims that by understanding the dimensional nature of games, researchers can move beyond the simple arguments of games being seen as either good for or bad, and can consider the relevance of games both as educational tools, in addition to their recreational role in today's society.

Videogames are an accessible media that can be marketed to all age ranges, societal level, and gender and as such gaming may be a unique activity that anybody can potentially become good at, and achieve goals in. This may be a particularly important motive for young children, who value the accomplishment and pride in game playing (Funk, Chan, Brouwer, & Curtiss, 2006). Other structural characteristics of games such as manipulation and control features (e.g., built-in breaks, lay-out of save features (may also be important in facilitating on-going playing (King, Delrabbro & Griffiths, 2010). While rewards in games

are important in encouraging game play, they have also been researched in relation to the possible effects of rewarding violent actions in videogames on aggression-related variables (Carnagey & Anderson, 2005) suggesting that rewarding violent actions in videogames increases aggression through increasing violent thinking.

The structural characteristics of games have been identified as a possible rationale for the development of addiction to video games (Brown, 1989; Johansson & Gotestam, 2004), which again highlights the structural similarities between video game playing and gambling (Fisher, 1994; Griffiths, 2005, 1990; King, Delfabbro & Griffiths, 2010; Wood, Griffiths, Chappell & Davies, 2004). Structural characteristics of games have been explored in relation to characteristics that may attract players to games, some of which players may not be consciously aware of (King, et al., 2009). Research has indicated that for some people, gaming can become almost an obligation where players feel that they must continue to play longer, harder, and faster that may be particularly relevant in online gaming (Yee, 2006). Researchers have therefore attempted to classify the structures of video games that induce, maintain, and lead to problematic gaming behaviours (Gentile & Stone; 2005; King, Delfabbro & Griffiths, 2009; Wood et al., 2004).

Social features in videogame playing

Social interaction within video game play has been put forward as a key motivation for people's involvement in gaming. King, Delfabbro and Griffiths (2010) devised taxonomy of the features of game play that may influence video game behaviour, which contains an emphasis on the role of social interaction. This framework can be seen to build on from Wood, et al.'s (2004) initial list of psycho-structural features of gaming and emphasise the importance of incorporating an extended exploration of the possible factors that affect gaming behaviour beyond solely the factors that gamer's rate as enjoyable. This framework suggests that extended periods of game play are encouraged through the use of social features that focus the player's thoughts on the groups that they have joined. This may encourage a sense of obligation in the player to continue to play until they have accomplished certain tasks, and in addition offer a support mechanism to encourage and legalise the amount of time playing.

The introduction of Massively Multi-player Online Role Playing Games (MMORPGs) has introduced a new potential interactive gaming environment to the world of online gaming with potential to play ever increasing sophisticated games and to engage with wide international group of fellow gamers. Griffiths, Davies and Chappell (2004) found that 41% of people playing MMORPG's (n=540) indicated that their favourite element of the playing of these games was related to social interaction (over half of all adults and 44% of adolescents). Similar findings were reported by Hussain and Griffiths (2009), and Yee (2006). It can be argued that these studies by Griffiths and his colleagues are limited to one particular game (*Everquest*) and the authors acknowledge this game is designed to allow individuals to select various characters and so aimed at a wide audience, whilst other MMORPGs may not be.

Hussain and Griffiths (2008) have argued that online games offer a unique perspective in online engagement as interaction, and co-operation between players is almost impossible to avoid if a player wishes to survive and develop strength in the games. Players may establish a range of in-game groups from small and temporary ad hoc groups to 'Guilds' – large permanent organisations of players that participate in scheduled activities and interact with other guilds. These groups may facilitate the formation of permanent and rewarding friendships (Longman, O'Connor & Obst, 2009; Yee, 2009). A recent study exploring the use of multi-player browser games reported four key motivations for playing browser game related to collaboration, with talking and getting to know others as the main motivation for playing these games. (Klimmt, Schmid & Orthman 2009). Communication and social interaction have also been reported as key motivations for adults playing First Person Shooter Games (Frostling-Henningsson, 2009).

Another study (Cole & Griffiths, 2007) explored the understanding and social interactions that online gamers (n=912) had in relation to the friends that they made during playing online games. Over 70% of both male and female players indicated that they had made what they would describe as good friends online, and over 42% of these people had met these friends in real life. However, there was a clear gender difference observed with males making more friends in online games and females indicating that they were more likely to discuss sensitive issues with these friends and to meet them in real-life than the male gamers. This may be interpreted as a gender difference unrelated to the online gaming environment.

Research in the area of online relationships has argued that peoples' online and offline relationships may differ significantly in a number of ways. Research conducted by Jiali (2007) found that once online relationships had reached a certain level of high closeness, people felt comfortable to talk about a wide range of topics and were willing to have in-depth conversation regardless of attachment style differences (Jiali, 2007). A recent study indicated that over 20% of people who played online games preferred socialising online, rather than in real-life settings (Hussain & Griffiths, 2008).

Research has also explored the levels of online and offline support of players in online games in order to further explore the social motivation for gaming (Longman, O'Connor & Obst, 2009). The research found that players of one particular MMORPG (*World of Warcraft*) derived social support from playing and this was again found to enhance game enjoyment, similar to previous research. The research also indicated that a small group of players that comprised almost 10% of participants (n=206) were playing for 44- to 82-hours per week. The high-use group were found to have lower offline social support than people who played less and exhibited higher levels of negative psychological symptoms, as indicated by scores on Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995). The authors argued that due to the correlational nature of the study, it was difficult to assume direct causation between the variables. The high game players may have low levels of offline social support and high levels of negative psychological symptoms because they play this game for such long periods of time or alternatively, they may play *World of Warcraft* for 80 hours a week because of these conditions. The social support derived from playing online may also be considered a substitute for lack of offline supports although the research revealed that only offline social support affected scores on the Depression Anxiety Scale.

Some authors have proposed that online communication may hinder the closeness of adolescents' existing friendships (Locke, 1998). According to the reduction hypothesis, adolescents solely or primarily communicate with strangers, that reduce the time spent with existing friends, and, as a result, the quality of these friendships. However, the argument against the reduction hypothesis (that adolescents use the internet to make friends with strangers) is that 88% of respondents used the Internet primarily to maintain their existing network of friends (Vaeberg & Peter, 2007), a result that is consistent with several online survey studies (Gross, 2004; Lenhart, et al., 2005).

Yee (2006) has proposed a Five-Factor Model of motivation for playing MMORPGs. The research demonstrated significant gender difference suggesting that males were motivated by achievement and manipulation factors, whereas females were mainly motivated by relationship, immersion, and escapism factors. Yee (2009) has argued for an empirical model of players' motivations in online games that consists of ten subcomponents grouping into three overarching themes of achievement, socialising, and immersion. The players indicated the importance of the development of meaningful relationships in such environments and this was found to be of particular important in terms of attracting people to games and in maintaining playing. A recent study by Reinecke (2009) also highlights the use of gaming as a means of developing friendship and support systems. This research found adults who received less social support from colleagues and supervisors played games at work more frequently than did individuals with higher levels of social support.

An interesting finding from the study by Griffiths, Davies and Chappell (2004) related to the finding that three-quarters of players surveyed claimed that they played with other real-life friends. Cole and Griffiths (2007) reported a similar finding of over 80%, and Yee (2006) found over 60% of females played with a partner whilst almost 40% played with a family member. This could indicate that the social element of this game is not solely related to the virtual friends that people are involved with when playing these games. Research conducted on online First Person Shooter (FPS) Games has indicated that the majority of players of these games engage in social interaction whilst playing, as indicated by membership of a clan (Janz & Tanis, 2007). The results also indicated that social interaction may be the strongest motivating factor for play and determine amount of time spent gaming.

Recent research has explored the role of collaborating in playing online games (Lim & Lee, 2009). This study found that social contexts of game play moderated the effect of task types on physiological arousal. For the violent tasks, collaborative play led to significantly lower levels of arousal than did solo play, whilst in the non-violent condition arousal was lower when people played alone. The authors argued that cognitive load would be reduced in the violent game condition, with the availability of social support from the other person. In the non-violent condition, there may be a higher cognitive demand on the

person playing in the collaborative condition, compared to the solo condition, as the person is required to work closely with the their partner in order to succeed in the game.

An argument could be put forward that female players may be more attracted to online games due to the ability to engage in this social interaction (Cole & Griffiths, 2007; Taylor, 2003;). Griffiths, Davies and Chappell (2004b) reported a total of 15% of their sample of 540 online players were female players, with females comprising 20% of all adult players. A more recent study has indicated an increasing number of female players involved in online gaming, with 30% of online gamers being female, with a large sample of 912 respondents from 45 different countries (Cole & Griffiths, 2007). Yee (2006) found that females where introduced to MMORPGs typically by romantic partners, and also that the female players were typically older than the male players in the large sample used.

Immersion and identification in videogame playing

Research has indicated that players often lose track of time and become immersed in the games that they play (Wood, et al., 2007) and that often this is a central element that people value in the games that they play (Hussain & Griffiths, 2008; 2009; Ivory & Mage, 2009; Wood, et al., 2004). King, Delfabbro and Griffiths (2009) related this ability of players to immerse themselves in the game directly to the narrative and identity features contained in games. They suggested that the psychological effects of developing a personalised identity in certain games allow for a development of attachment to this character and can result in a wish for the character to do well, that can result in extended playing.

The use of personalised characters in video games is becoming more common with many games encouraging players to try out different characters. Research has explored the use of character swapping in games as a motivation to play. Griffiths, Davies and Chappell (2004a) found that 60 per cent of online gamers had swapped gender in their playing, and 72 per cent of people had role swapped (Griffiths, Davies & Chappell, 2003). Hussain and Griffiths reported that 50 per cent of online gamers had gender swapped, with more females than male players enjoying this aspect of online gaming.

Sherry (2004) argues that the enjoyment of media results from a flow experience that occurs when media message content balances with an individual's ability to interpret that message. This theory argues that

individual differences in immersion in video games can be explained through differences in cognitive experiences, and individual media experience can facilitate or prevent the flow state in media users. Therefore, it is a balance between individual differences in cognitive abilities, and media message challenges that may explain a person's enjoyment of media use. Research has indicated that online gamers value the feeling of flow achieved when they are gaming, that can allow them to test behaviours that would not be possible to do in real life (Frostling-Henningsson, 2009).

Klimmt, Hefner and Vorderer (2009) have described video games as possible identity laboratories that allow people to experience different identities and also offer an escape from everyday stresses. Video games can therefore be seen as a recreational tool and a way of escaping stress and promoting wellbeing (Hefner & Vorderer, 2009). Similar findings have been found with college-aged men who use games as healthy source of relaxation, socialising, and coping (Wack & Tantleff-Duff, 2009). Reinecke (2009) has also found that higher levels of work-related fatigue were related to a higher tendency to play games at the workplace and a higher level of recovery experience during game play. Hussain and Griffiths (2009) conducted interviews with 71 online gamers and reported that almost one-third of gamers reported using games as a means of alleviating negative feelings, such as loneliness and boredom.

Rewards in video game play

A recurrent argument for players' attraction to and desire to play video games can be related to the use of reward structures (Chumbley & Griffiths, 20006) where players are reinforced for performing certain skills, and therefore encouraged to play these games or to play for longer periods. A recurrent theme in this research is related to the similarities between gambling and video game characteristics (Griffiths & Hunt, 1995; Wood, et al., 2004), and between slot machines and video games (Griffiths, 1991; Fisher & Griffiths, 1995; Griffiths, 2005). Both gambling and video games share similar demographics in terms of players and involve similar reinforcement schedules. There is often the use of similar structural characteristics such as the use of lighting and sound effects particularly in relation to rewards. This has led some researchers to argue that slot machines and video games are similar in terms of psychological and behavioural characteristics, and drawing from gambling literature, have discussed the possibility of

video games containing various structures that have the potential to make them addictive (Brown, 1989; Griffiths & Hunt 1995; Johansson & Gotestam, 2004; Wood, et al., 2004).

Griffiths (2008) argues that that the reward system used in gaming can be explained by the partial reinforcement effect (PRE). This, he argues, may be a critical psychological ingredient of gaming addiction, where the schedule of reinforcement is intermittent in the game and this may serve to encourage people to continue playing in the hope of receiving another reward. In this context, addiction may be explained through an understanding of the effects of reward structures, with greater rewards leading to faster responding and resistance to extinction (Griffiths, 2008). The use of rewards and the popularity gained by success, it is argued, can also lead to increased playing that in turn can lead to increased daily play (skills tried out) until the person's playing has reached the point of automaticity. Reinforcement schedules used in video games can further intensify a person's drive to play (Swing, et al., 2009). Extrinsic rewards in video games include the gaining of points, completing skill levels and the graphic and sound effects that reward a player once a task has been accomplished. Intrinsic rewards can relate to the person's own satisfaction, sense of accomplishment, or can be seen in the gaining of prestige in terms of peer respect or one's name appearing in a 'hall of fame' specific to the game being played (Swing et al., 2009). Gentile and Gentile (2005) have highlighted the role of arousal in reward achievement with players motivated to continue to play due to this increased arousal and feeling of accomplishment following rewards.

King, Delfabbro and Griffiths' (2009) framework discusses a number of these reward and punishment schedules that may be relevant to explaining the psychological effects of video game playing. These include the use of bonus points or losing lives, the increased difficulty at different levels, pay-out interval features, and the unlimited replayability of games. The authors suggest that many of the reinforcement structures are similar to those found in gambling, with the use of immediate pay-out structures similar to that found in slot machines, and found to be relevant to a likelihood of players to re-invest the rewards.

As games are becoming more collaborative and involving the use of interdependency (where players must co-operate and work together), the role of this type of engagement must be explored. Choi, Lee,

Choi and Kim (2007) research focused on the structures that are enjoyable to gamers of MMORPGs and explored the role of both task and reward interdependency in these games. The research found that when there was low task-interdependency and low reward independency, players reported more fun and experienced greater flow. In the high task dependency condition when there was also high reward interdependency players again reported more fun and experienced greater flow. The authors argued that in both of these conditions the players were viewing themselves in a positive light because of their accomplishments and this would increase their enjoyment of the game. They argued that in the high task-interdependency condition players have *"killed powerful monsters together and thus shared the rewards of glory with their team members"* (Choi, Lee, Choi & Kim, 2007; p.594). In contrast to this, the low task-interdependency condition involves rewards being allocated according to individual achievement and this will ensure that the player will experience a feeling of accomplishment. The study was conducted with 18 adults who had never played MMORPG before and so future research is needed to explore this area with larger samples.

Realism and graphics in video game playing

Griffiths and Hunt (1995) found that adolescents were attracted to video games because of the content and structure of the games, and important characteristics related to the number of levels, the graphics, and the sound effects. This may be of particular relevance to today's gaming environment as the games and the consoles constantly strive to enhance these very structures in order to increase attraction in the market. Griffiths (1997) reported similar findings with a group of 11-year old boys who stated that they played for fun and for the challenge, and because friends also played.

Wood, et al., (2004) conducted an online study exploring the different features within games that are important to players. The importance of realistic graphics, in relation to quality, sound and graphics in particular, was a main finding. The authors argued that the rapid advancement in technology in the gaming industry ensures that the attraction to certain characteristics is constantly changing in line with

technology advancement. There will also be individual person differences in characteristic preference in line with other variables such as length of time playing.

Presentation effects in games, such as the use of realistic graphics and music and the use of explicit content including violence, nudity, and drugs may also have an impact on the effect of video games according to King, Delfabbro and Griffiths' (2010) taxonomic framework. Gentile and Gentile (2005) argue that cognition plays a central role in the effect of video game playing, with memory and attention enhanced for specific scenes and events through the use of visual and auditory changes of scenes that may contain sex or violence. Ivory, Ivory and Kalyanaraman (2007) have recently reported that the advancement of video games has increased the sense of involvement and physiological arousal for gamers, with players who played a newer and thus more advanced version of a video game exhibiting higher levels of arousal and reporting higher levels of immersion in the game.

The effect of realism in relation to graphics has in addition been shown to be a main reason for attraction to specific games (Wood, et al., 2004). The mechanics of video games vary from game to game, and also in relation to consoles. The recent introduction of *Nintendo's Wii* console and the use of interactive motion remote controls could be argued to have an impact on the effects of these games when accompanied by different mechanics and controls. Markey and Sherer (2009) conducted research exploring the effects of these controls on adolescents' aggressive cognition after playing a violent video game. The results indicated motion controls did not increase the magnitude in the effect on aggressive behaviours or cognitions. Gentile and Gentile (2005; 2009) argue that the structures of video game also allows for a greater transfer of behaviours and skills learnt whilst playing to real-life situations and this may again be an important consideration for explaining the effects of video games on behaviour

The experience of playing video games

Lafreniere, Vallerand, Donahue and Lavigne (2009) argue that the dualistic model of passion regards people with an obsessive passion as individuals who cannot resist the urge to engage in their favourite activity and it can begin to dominate their lives. Obsessive passion may explain the lack of control

observed in problematic gaming and may therefore represent a precursor of problematic gaming (Vallerand, Blanchard, & Mageau, 2003). Research has shown that obsessive passion is positively associated with potential indicators of problematic gaming such as behaviours usually associated with excessive gaming and time spent playing, while harmonious passion is unrelated to such indicator (Wang & Chui, 2007).

Seguin-Levesque, et al., (2003) conducted the first empirical analysis of obsessive and harmonious passion in a study of the effects of passion for Internet use. The authors found that harmonious passion for the Internet related to healthier and more self-determined relationships compared to use driven by obsessive passion. Later research by Wang, Kiu, and Liu (2008) examined general tendencies toward obsessive and harmonious passion for video game play, and reported that obsessive passion related to increased reports of amounts of play and negative affect during play whilst harmonious passion related to more positive affect during play. More recent research by Lafreniere, et al., (2009) studying *World of Warcraft* players, replicated Wang et al., (2008) findings. They demonstrated that within this gaming context, different effects existed for players as a function of the extent to which they were passionate about the game in an obsessive or a harmonious way. The research indicated that obsessive play was positively related to problematic behaviours associated with gaming, increased amount of time playing, negative physical symptoms and experience of negative affect whilst playing.

Similar to research on films, suspense within video games has also been found to be a significant determinant of player's enjoyment of game playing (Klimmt, Vorderer, Rizzo, Koch & Fischer, 2008), with 63 adult players of FPS games. Oxford, Ponzi and Geary (2010) used video game playing as a means to explore the hormonal response of men when involved in competitive team playing. The results indicated that men who were on a winning game team and perceived that they had played a part in the win did experience a testosterone increase, and this exhibited a similar pattern to response found during actual male to male competition outside of gaming. The researchers thus suggest that violet video games are appealing to young men as they allow them to engage in male-to-male competition, that is an evolutionary evolved motivation.

Mediators and moderators of violent video game effects on game players

Whilst there is a substantial body of research exploring the effects of violent video game play on aggression, there are mixed findings in relation to the individual effects of such game play. Some researchers have argued these mixed findings are due to methodological difficulties, whilst others have suggested that the difference may be due to psychological and game processes which can be described as mediators of any effect of violent video game play, explaining how the effects of video games may impact on the individual. The research has focused on possible mediators such as cognitive processes gamers may engage in, levels of arousal, structures of video games and developmental stages. In relation to explaining individual differences in any effects of violent game play on individuals, moderators of the effect have highlighted the possible role of factors such as the levels of identification and immersion of gamers in game play, gender, personality traits, culture and gamers general motivations to play. By exploring mediators and moderators of game play, it is suggested that a more comprehensive understanding of violent game play will be developed, with a discussion of how games may impact players, but also to explain individual differences.

Cognition and arousal

Social learning theory argues that humans learn aggressive values by watching, exposure to violent media and role models (Bandura, 1986; 1973). Huesmann, et al., (2003) have explained short-term and long-term effects as due to different learning and cognitive structures. Short-term effects can be seen to be due to priming, excitation, and the immediate intimidation of specific behaviours. Long-term effects may be due to the observational learning of three social-cognitive structures that are schemas about the hostile world, and scripts for problem solving that are focused on aggression and normative beliefs that aggression is acceptable.

Huesmann et al., (2003) also argue that long-terms effects of exposure to violent video game play are due to desensitisation that makes aggressive behaviour more likely to occur. In this respect, the effects of video games can be seen to be exerted through the observing of particular behaviour and the rewarding of

certain actions that could lead to the person behaving in a similar way at a later date. Greitmeyer (2009) suggests that the short-term effects of playing prosocial games can be explained through the use of modelling, direction, and reinforcement in the games that can lead to affective, arousal and/or cognitive effects. Hopf, Huner and Weib (2008) have argued that violent video games introduce and facilitate the learning of aggressive emotions such as anger, hate, and feelings of power and particularly the notion of revenge, that can be seen as a key factor in some violent video games. The researchers argue that the learning of these emotions may represent a significant risk factor for children and early adolescents in the development of aggression.

The General Arousal Theory (Berkoitz, 1993; Geen & O Neil, 1969; Lee, 1996) argues that as arousal within a person increases, there is an increased probability that the person will react aggressively to aggressive stimuli. This argument suggests that the observation of violent media results in an increase in general arousal. This arousal can lead to the disinhibition of mechanisms that would normally inhibit aggressive behaviour. Recent research has demonstrated that arousal remains a key outcome effect in adults playing violent video games (Anderson, et al., 2004; Arriaga, Esteves, Carneiro & Moniteiro, 2006; Baldaro, et al., 2004; Barlett, Harris & Baldassar 2007; Bushman & Huesman, 2006; Carnegey et al., 2007; Ivory & Kalyanaraman, 2007; Tafalla, 2007). The role of arousal whilst playing games also remains a central premise of the excitation transfer theory (Zilliman, 1979, 1983). After exposure to violent video games, the person is more likely to misattribute arousal and so perceive subsequent incidents/provocation as more severe than it actually is. In the case of violent video games, exposure arousal occurs during playing, but after play this arousal is misattributed to an alternative source and this may lead to increased probability of the person acting aggressively (Zillman, 1983).

Recent research has noted that arousal may be increased with the increased realism and technological advancement of games, and the general arousal theory would therefore argue that aggression would increase in gamers with this advancement (Ivor & Kalyanaraman, 2007). Ravaja (2006), and Weber, Behr, Tamborini, Ritterfield, Mathiak (2009), have explored the different elements of video game play rather than the game as a whole in relation to arousal levels of players. Weber et al., (2009) reported that arousal levels for males playing FPS games varied throughout the game, dependent on the activity the

player was engaged in, and the amount of time they were playing the game. Arousal levels were highest at the start of game play and when uncertainty is high, such as when enemy characters are hiding. However, the study only used a small sample of 13 males.

The role of frustration and reward on arousal in video games may in addition, play a role in the effects of video games on players. Gentile and Gentile (2005) have highlighted the role of arousal in reward achievement, with players motivated to continue to play due to this increased arousal and feeling of accomplishment following rewards. Negative reinforcement in game play structure has also been reported to be positively related to frustration (Chumbley & Griffiths, 2006). This finding may be explained by the frustration aggression hypothesis (Berkowitz 1989; Dollard, Doob, Miler et al., 1939). This theory argues that frustration will occur if a goal is blocked or a person is prevented from attaining a goal and this frustration can lead to aggression. However, this study by Chumbley and Griffiths (2006) did not involve violent video games, and instead focused on young adults playing racing games.

Uhlmann and Swanson (2004) have argued that playing violent video games can lead to changes in automatic associations with the self. The authors propose that violent media can result in the development of aggressive self-concepts, with exposure to violent media priming aggressive self-presentations. The research used implicit association test (IAT) to explore short-term and long-term effects of playing violent video games. The participants who played the violent video game did not associate themselves with aggressive traits on a self-report questionnaire but did associate themselves with aggressive concepts on the IAT. Therefore, the authors argued that the short-term effects of violent video games are automatic and thus often occur without player's awareness. Additionally, the long-term effects of violent video game play were found to predict an association with aggression on IAT, even after controlling for aggressiveness. The study used a self-created game rather than a commercial game. The experimenters created new levels of a game, as pre-tests indicated that naive players of the game (*Doom*) would not be able to master the controls and other parts of the game necessary to play and this may have an impact on the findings.

Developmental Stages

Gentile, Lynch, Linder and Walsh (2004) contend that an additive effect is central to understanding the increase in aggression observed in adolescents and children exposed to media violence. Their cross-sectional research conducted with 617 adolescents suggests that a combination of high rates of hostility and exposure to violent videogames may put young people at risk of exhibiting higher levels of aggression. During adolescence, young people start to develop identities and researchers argue that media role models can be central at this stage of development to allow adolescents to experience possible selves (Griffiths, Davies & Chappell, 2004a; 2004b; Oyserman, Bybee, Terry Hart-Johnson, 2004). Konijin, Bijvank and Bushman (2004) argue that popular violent videogame characters are usually in control and suggest this may be a key source of attraction for young people to violent videogames. They also note that trait aggression and sensation-seeking peak during adolescence (Slater, Henry, Swaim & Anderson, 2003), and at this stage, risk-taking is thrilling, and violent videogames comprise risk-taking and danger. Researchers have argued that adolescence is a time of increased risk taking and novelty seeking (Gardner & Steinberg, 2005; DeVane & Squire, 2008; Steinberg, 2004), and in this sense video game play may be an attempt by the young person to seek acceptable levels of arousal and adventure-seeking emotions (Olson et al., 2008).

Hopf, Huber and Weib (2008) conducted a two-year longitudinal study with 314 German children aged 12 years to explore the long-term effects of exposure to violent media. The researchers concluded that early exposure to media violence, and in particular exposure to violent video games leads to antisocial behaviour. The research also argued that the stage of development that the child is exposed to violent media is a crucial consideration when exploring causality of antisocial behaviour. The authors argued that the frequent playing of violent video games at the start of adolescence can be directly related to later violence and delinquency at the age of 14 years. Ferguson, San Miguel and Hartley (2009) have argued that exposure to violent media is not solely predictive of youth violence and aggression. The US research was conducted with a moderately large sample (n=603) of young people between ages of 10 and 14 years. The research indicated that video game exposure along with depression, negative relationship with adults, exposure to family conflict and abuse, were found to predict bullying in young people. However,

bullying behaviour was best predicted by antisocial personality traits and delinquent peers and video game exposure was less significant. The research was conducted on a mainly Hispanic sample and so the authors noted that generalisability to other groups may be less applicable.

Similar research by Gentile, et al., (2004) in a longitudinal study indicated that the children who were exposed to higher levels of media were more hostile, displayed more aggressive behaviour and less prosocial behaviour than other children, over a school year. Bushman and Huesmann (2006) argued that the short-term effects of media violence were stronger for adults than for children and long-term effects may be stronger for children. This is due to fact that the short-term effects of aggression following media exposure that are due to priming of existing aggressive behavioural scripts, beliefs and schemas. In adults, these scripts will be already well elaborated and may have rich networks of associations that may allow for easier and quicker priming. Bushman and Huesmann (2006) argue that long-term effects of violent media exposure are due to children's learning of scripts for aggression through observation of others violent behaviour. In this context, the authors argue that the younger children should be more susceptible to encoding these aggressive scripts as they will not have any previous scripts to replace or modify. Buckley and Anderson (2006) also suggest that children are less likely to demonstrate short-term effects to violent media as associative memory network is underdeveloped compared to young adults, and this is particularly relevant for the interpretation of violent video game research, as a large amount of the research has been conducted on college participants.

The General Aggression Model

The General Aggression Model (GAM; Anderson & Bushman, 2002) is based on a combination of social learning theory, arousal theory, cognitive processing theory, excitation transfer theory, and the frustration aggression theory. This model was designed to explain how violent video games increase aggressive thoughts, feelings, and behaviours. The model predicts short- and long-term effects that increase the likelihood of an individual engaging in aggressive behaviour as a result of exposure to violent video games (Swing, Gentile & Anderson, 2008). The model argues that in any given social experience, there are proximal and distal features. Proximal features can be described as the social situation the person

comes to, and the distal properties relate to the biological and environmental modifiers that influence aspects of people's personality (Gentile, 2005). The theory argues that are three aspects of internal state are affected. Violent video games may affect the individual over time in three ways by influencing their aggressive beliefs, schemata and scripts, and by desensitising them to violence. As people begin to see the world and their encounters in aggressive terms, people will begin to act in more aggressive ways and their personalities change and they will become more aggressive and hostile (Carnegey & Anderson, 2005). In terms of long-term exposure to violence, the model emphasises aggression related priming (Barlett, Harris & Bruey, 2008) with constant exposure to violence believed to lead to activation of more aggressive thoughts in memory (and so on until an entire network of aggressive thoughts produced)

Unsworth, Devilly and Ward (2007) argue that despite recognition of personality as a stable concept, the GAM requires a belief that personality changes are due to violent media exposure. The authors also argue that the model does not take into account the role of other potentially powerful learning experiences that could provide a possible learning of less aggressive alternative to conflict resolution. In this sense, the role of prosocial behaviour and non-aggressive means of dealing with issues as modelled by family and peers would not exert any influence on the individual. Therefore, the model does not specify the mechanism that ensures that the individual is only affected by the learning from video games.

An updated version of the General Aggression Model was designed as way to address arguments that the theory was not explicitly developmental in nature, and therefore did not enable a full understanding and prediction of change across time (Anderson, Gentile & Buckley, 2007). The adapted model, named the General Learning Model (Buckley & Anderson, 2006), attempted to incorporate the key developmental concepts of risk and resilience. The inclusion of these concepts was based on a recognition that recent developmental perspectives consistently attempted to explain individual development as a consequence of a combination of different vulnerability (risk) and protective (resilience) factors within a child's life. Anderson, Gentile and Buckley (2007) have therefore argued against the idea of vulnerable people but suggest that a mixture of risk factors and/or a lack of protective factors in a child's life may result in a child being vulnerable. In this context, the impact of violent video games on an individual child may be considered one risk factor for the development of specific outcomes

in relation to aggressive behavioural, cognitive and/or affect. . The model also differed from GAM in that the learning processes it describes are not specific to aggression.

The revised model also included a consideration of the individual developmental level that a child is at when exposed to video games. Similar to stage theorists of development (Erikson, 1963; Piaget, 1951), the theory argues that the age that the child is at, dictates the specific developmental task that a child is required to achieve. Depending on the task that the child is facing, it is argued that the effects of media will have a greater or lesser effect. The General Learning Model (GLM) thus suggests that during adolescence, young people face the task of developing a strong, coherent personal identity (Anderson, Gentile & Buckley, 2007). In a similar way, Wood, et al., (2004) have also noted that individual differences in attraction to games will vary according to individual preferences or length of playing.

Gerberner (1969) argues that heavy media viewers are more likely to perceive the world in ways that reflect the view of that media. In a similar fashion, the effects of violent video games can be explained through an understanding of theoretical models of media as socialisation agents (Brown, 2006; Arnett, 1995). These theories argue that people use media as a form of socialisation. Brown's media practice model (2006) suggests that who we are affects what media we use, and how we incorporate this knowledge into our lives. The media we choose will also then exert an influence on our behaviour and our view of the world. Arnett (1995) argues that adolescents and emerging adults use the media as a form of socialising and as this time is a key stage of identity development for young people the media can have a significant effect on our personalities and behaviours. This developmental perspective that explores the different effects of media at different developmental stages can be seen to be similar to the age related tasks of children as highlighted in the adapted version of GAM. In further consideration of GLM (Anderson, Gentile & Buckley, 2007; Arnett, 1995), the effects of media on children will vary at different ages, and the effects of violent media can therefore be seen to be affected by the stages that a child is facing. The research on video game usage has provided consistent findings that young people during adolescence are using communication media increasingly as a form of developing and particularly of maintaining friendships (Valkenburg & Pee, 2007; Gross, 2007). As peers are of significant importance to young people at this stage of development, it appears that gaming within these media forms may also

continue to develop in the future, as young people employ various gaming environments in order to maintain their friendships (McLean & Griffiths, 2013c) and extend the networks they are developing through gaming (Reinecke, 2009).

Structural characteristics of violent video games

Through recognising the factors that attract people to games, and the reasons they continue to play, we can begin to also develop a greater understanding of the effects of video games. Yee (2006) has argued that video games are similar to work platforms that they train players to become better workers and this can be seen to be accomplished through use of changes in difficulty/levels, over learning, automatic skills develop, rewards and the reward schedules used, and through active learning (Gentile, 2005).

Wood, et al., (2004) also found that over three-quarters of player's rated rapid advancement in games as a main characteristic that attracted them to a game. The fact that games and success within these games are available to all can also be seen as an important characteristic in the attraction to play). Other structural characteristics of games that King, Delfabbro and Griffiths (2010) term manipulation and control features, such as the built in breaks and the lay-out of save features, may also be important in facilitating on-going playing.

Gentile and Storm (2005) have used a dimensional approach to factors within games that may explain the effect of video games on players, arguing that the effects of video games may also be explained in relation to the use of distributed practice that games often employ, while.the form of the game can also have a role to play in explaining the effects of video games on players. Violent video games have primarily been researched in relation to their violent content and their effects on aggressive behaviour, affect and cognition that Gentile (2005) has described as unintentional effects. Gentile (2009) argues that the distribution of time that is spent on video games is a central aspect in explaining the effects of video games.

Carnegey and Anderson (2005) conducted research exploring the effect of rewarding violent actions in video games on aggression related variables. The research suggested that rewarding adult participants in a video game for killing pedestrians in a car racing game increased hostile emotion, aggressive cognition and behaviour. In addition, the researchers found that punishing violent acts in the game resulted in an increase in hostile emotion. The researchers argue that rewarding violent actions in video games increases aggression through increasing violent thinking. The competitive hypothesis argues that competitive situations will stimulate aggression. Research has indicated that the increased aggression observed in violent video games is not due to the competitiveness, and suggest it is due to the aggressive content of the games (Carnegey & Anderson, 2005; Anderson & Carnegey, 2009). In these experiments, adult participants played competitive games, and differences were manipulated in the versions of the games such that participants were randomly assigned to either competitive violent games or competitive non-violent games.

Barlett, Harris and Bruey (2008) suggest that in present forms of media, the levels of visible blood is increasing and often the presence of blood is used to indicate greater violence in a scene. Farrar, Krcmar and Novak (2006) explored the effect of different levels of blood in violent video games. The researchers reported that the presence of blood in a violent video game predicted more physical aggression amongst a group of adults. A similar finding has also been reported by Ballard and West (1996). Barlett et al., (2008) reported that adult players (n=74) playing a violent video game, increased levels of blood within a game led to an increase in participant hostility and physiological arousal. The researchers reported that the participants used the characters weapons more often, than those in the low blood condition of a violent video game. The researchers conducted a second smaller study with 31 participants and suggested that violent video games with high levels of blood may lead to more aggressive thought activation, than in violent video games with less blood. The participants in the first study were frequent video game players, playing an average of 16.5 hours per week. The desentitisation hypothesis (Carnegey, Anderson & Bushman, 2007) could explain that these players were desensitised to the violence and so the low blood levels in the conditions would not be considered a violent game and this may explain the lower arousal with these participants. The authors conceded that the small number of participants over four

conditions in the initial experiment may also be a limitation of the study, although the use of within game experimental design and the use of a suspicion questionnaire were important strengths of the study, which may result in lower social desirability effect in responses given.

Individual Characteristics

Much of the recent research on the effects of video games has explored the factors that may explain the different effects of violent video games observed with different people. This research has also focused on the identification of individual factors that may help explain differences in this effect. Guimetti and Markey (2009) argue that it is crucial to develop an understanding of any individual factors that may moderate the effects of violent video games in order to understand and address any observed negative effects of playing such games. The internal state of person has also been discussed as important in determining the effect of violent video games on a person (Sigurdsson, 2006). The downward spiral model argues that exposure to violent media may reinforce or exacerbate aggressive behaviours, feelings, and cognition the player already exhibits (Slater, Henry, Swaim & Anderson, 2003).

Anderson and Bushman's General Aggression Model (2002) argued that anger moderates the effects of violent video games and that this may be because anger reduces people's inhibition against aggressive acts, may energise people to act or may prime aggressive thoughts. Guimetti and Markey (2007) reported that those that are angry were affected by violent video games to a greater extent than those that are not. The study used story stems to assess aggressiveness, and the authors acknowledge that this can only measure the participant's views of what they believe others would do, rather than their actual aggressive behaviour.

Markey and Sherer (2009) have argued that violent video games may affect individuals adversely if they have elevated levels of psychoticism, and a similar effect has been reported in research on violent media (Lynn, Hampson & Aggi, 1989; Zillman & Weaver, 1997). The researchers conducted a study with 118 adults who played one of two video games. They reported that those high in trait of psychoticism experienced higher levels of hostility and more aggressive cognitions than those that played the non-

violent sports game. Rubin (1986) has argued that children engage with media for different reasons such as to alleviate boredom, to provide entertainment or to mix with other people. The previous discussion on the reasons for attraction to video games has highlighted all of these points as key motivational features for playing to both adolescents and adults. Dubow, Huesman and Greenwood (2003) have proposed that individual motivating for playing a particular genre of games may play a role in moderating the effects of that game play.

Unsworth, Devilly and Ward (2007) have proposed the immersive media prediction theory as a method of explaining the short-term effects of violent video games, with emphasis on individual state and trait. The model predicts that aggressive temperament predicts short-term changes in an individual following exposure to violent video game. The prediction of these changes depends on how the person is feeling prior to the game playing incident, with children who are not angry prior to playing expected to show an increase in post-game state anger. There are a number of limitations of the study that that relate mainly to the measures of gaming that was employed and the measurement of state anxiety as a behavioural indicator of aggression. In addition, the children played only one game in this study and there was not a control group for comparison.

Mehroof and Griffiths' (2010) research suggests a role for sensation seeking, neuroticism, aggression, and state and trait anxiety with online gaming. This research was based on suggestion that people have particular personality traits that may make them more prone to addiction (Griffiths, 2009). Chumbley and Griffiths (2006) found that impulsivity scores were not significant predictors of player's likelihood of continuing to play, although the authors argue that the measures used in their research may not be sufficiently reliable to conclude that personality factors do not play a role in explaining the effects of video game playing.

Research has explored the effect of hostility on violent video game play, with hostility indicated as a possible effect of playing (Lynch, 1994, 1999; Anderson & Dill, 2000). Gentile, Lynder and Walsh (2004) have explored the effect of violent video games on adolescents level of hostility. The research indicated that hostility correlated with three measures of violent content, the amount of video games that

participants stated that they liked in games, the amount of video game exposure reported and whether participants stated if they liked violence. The authors suggest a bi-directional relationship exists between an adolescent's video game playing and level of reported hostility with more hostile youths playing more video games than their peers. Hostility was therefore found to mediate the amount of play and of violence exposure on grades and on aggressive behaviour. The design in this study may be one of the reasons for the finding as the research relied on self-report of arguments and fighting from the adolescents and this may have been affected by the participants wish to provide a positive view of themselves. It would be interesting to consider parental and teachers views of aggressive behaviours and parental limits on video game exposure. Whilst there is huge value in the study of video game effects on young people, there are ethical and often practical difficulties with conducting this type of research with adolescents. This study offered a possible solution to these difficulties as the measures in the study were administered by teachers in the classroom, teachers were trained prior to administration but there may be an effect on the participant's responses due to the fact of the teacher delivering the questionnaires, as the students may have answered in a particular manner due to the teacher being involved rather than an unfamiliar researcher.

A study by Przybylski, Weinstein, Ryan and Rigby (2009) applied the motivational approach of self-determination theory and the dualistic model of passion, to understand the motivational features and effects of video game playing. Similar research has demonstrated that video games can provide player satisfaction, thereby fostering positive short-term shifts in well-being and enhancing game enjoyment (Ryan, Rigby & Przybylski, 2006; Przybylski, Ryan & Rigby, 2009). Przybylski et al., (2009) suggest that the ways in which players approach games, either as a volitional, enhancing or compulsive pursuit, can be as a result of the psychological need supports players experience in their lives. Players whose lives are more need satisfying are more likely to pursue games with a harmonious passion, accompanied by experiences of choice, energy, and enjoyment from playing and thus this may account for positive effects of video games such as research indicating that video games can be a source of socialisation, means of relaxing, and coping mechanism for young men in college (Wack & Tantelff-Dunn, 2009).

Lafreniere et al., (2009) also argue that in contrast to harmonious playing, obsessive passion for gaming is an important predictor of the negative outcomes of gaming. Obsessive passion is characterised by an uncontrollable urge that forces people to partake in the activity they view as important. Feeling compelled to engage in the activity, people with an obsessive passion are likely to neglect other areas of their life. Consequently, with obsessive passion, people risk experiencing conflicts with other life domains. In relation to video game play Griffiths, Davies and Chappell's (2004a) research indicated that whilst adults were more likely to sacrifice social events to play games, adolescents were more likely to sacrifice education and work commitments. This and other similar findings in relation to the research on video game addiction, may suggest that gaming could have a significant effect on those playing excessively. Hussain and Griffiths (2009) found that more than half of the online gamers they sampled had incorporated gaming into their lives without any negative effects of sacrificing significant aspects of their lives in order to play.

Character identification and game involvement

Anderson, Gentile and Buckley (2007) have argued that video games, due to their interactive nature, are more strongly related to violent behaviour than non-interactive violent media such as television and film violence. Markey and Sherer (2009) explored the effect of direct involvement in video games through the use of game console controls that allow the participant to act out the actions of the characters. The research found that motion controls did not intensify the effects of violent video games on aggression. Participants who played a violent video game with motion controls did not exhibit significantly different levels of aggressive hostility or cognitions, compared to those who played same game with traditional controls. The authors acknowledge that the effect of the motion controls may be more apparent on the exhibiting of aggressive behaviour. Nowak, Krcmer and Farrar (2008) explored the effect of immersion and involvement on players of violent video games. The gamers who reported more frequent play also reported higher levels of immersion, whilst those that reported higher levels of identification exhibited more physically aggressive intentions. Those who felt more presence felt more hostility and were more verbally aggressive than those who felt lower levels of presence. Higher levels of immersion and identification were also found to increase physically aggressive intentions.

Research has indicated that players prefer realistic video games rather than unrealistic ones (Griffiths & Hunt, 1995; Wood, Griffiths, Chappell & Davies, 2005). However, technological advancement has been reported as not intensifying the negative effect of video games (Ivory, 2007; Tamborini, 2004). Players who were asked to play a more advanced version of a video game did not therefore demonstrate more aggression than the group asked to play a less advanced version of the game. However, advancement in video games was found to increase player's feelings of involvement and excitement but not to have a significant effect on aggression (Ivory & Kalyanaraman, 2007). Konijin, Bijvank and Bushman (2004) found that boys were more likely to identify with characters in a violent video game when the games were realistic and the players reported that they felt immersed in the game.

Research on violent television characters suggests that identification with violent characters can lead to aggression in short-term (Funk, Baldacci, Pasold & Baumgadner, 2004) and in the long-term (Huesmann et al., 2003; Huesmann & Eron, 1986). Fischer, Kastenmuller and Greitemeyer (2009) found that players who used their own personalised characters in a violent video game exhibited more aggressive behaviour, compared to those that used non-personalised default characters. The research suggested that players who used a personalised character experienced more arousal and self-activation. The researchers argue that the use of personalised characters can be seen to amplify the effects of violent video games with the personalisation of gaming characters increasing self-activation that in turn may increase aggression. The research used a version of a boxing game as the violent game and the authors acknowledged that this form of aggression can be seen as an acceptable version of violence and thus future research could explore the effects on other forms of violence. As previously discussed, research has additionally found that playing violent video games may lead to increases in automatic violent associations with the self (Uhlmann & Swanson, 2004).

Konijin, Bijvank and Bushman (2007) reported that boys who identified more strongly with violent characters in video games were more likely to act aggressively, as measured by a willingness to administer loud noise to another. The authors highlighted the fact that the boys were administering this noise to another boy with no provocation and they were led to believe that the noise was loud enough to damage the other person's hearing. The researchers argued that the results of the study suggest that

identifying with violent video game characters may make players more aggressive. However, the research suggested that aggression does not predict identification with violent characters as the correlation between trait aggression and wishful identification was not significant. The scales used in the study to measure identification, immersion, and realism were made up of only three and four items and although this research was conducted with boys of 14 years of age, the reliability of short scales may be an issue. The authors concede that further research could include a group of children from different backgrounds and of different ages to allow for a consideration of different factors that could influence the findings. The researchers argue that adolescent boys with lower educational ability, as measured by grades, are more likely to consume violent media but as the current study did not include a measure of exposure to other violent media forms it is difficult to attribute that the observed effects to violent video game exposure alone.

Researchers have argued that the ability to identify with a character and to develop an attachment to this character allows for a greater immersion whilst playing (King, Delfabbro & Griffiths, 2010). It can be argued that the ability to personalise a character can encourage greater identification with the character, a finding that the gaming industry is eager to encourage in more recent games (Klimmt, Hefner & Vorderer, 2009). In terms of identification, research has highlighted a possible relationship between levels of identification with videogame characters and aggressive behaviour (Konijin, Bijvank & Bushman, 2007). Similar research conducted by Fischer, Kastenmuller and Greitemeyer (2010) found that players who used their own personalised characters in a violent videogame exhibited more aggressive behaviour, compared to those who used non-personalised default characters.

Parental monitoring and cultural factors

Hopf, Huber and Weib (2008) argued that a lack of parental monitoring of video game playing, together with frequent exposure to violent media can lead to a significant risk of child demonstrating antisocial behaviour during adolescence. Research on the effect of parental monitoring has provided clear evidence for a beneficial effect of such monitoring and mediation of media messages (Austin, 1993; Strasberg &

Donnerstein, 1999; Dorr & Rabin, 1995; Austin, Pinkleton & Fujioka, 2000). Anderson, Gentile and Buckley (2007) suggest that active parental monitoring of the usage of media may moderate the effects of violent video games. Research conducted with Japanese children indicate that they are less likely to have own television sets and games consoles (Anderson et al., 2010), and thus are more likely to play video games in a public place where monitoring of inappropriate games may be possible. Some research has also emphasised the context of the violence viewed and the role of adult guidance in ensuring children develop an understanding of the costs and consequences of the violence (Strasburg Wilson, Jordan, 2009). In this context, the authors argued there would be a difference in the viewing of a film that portrays the sadness and loss associated with violence rather than the glorification of violence that is often found in today's media.

Cultural factors have been put forward as a possible moderator of the effects of violent media. Anderson, et al., (2007) have argued that particular cultures such as Japan have high levels of media violence but there is actually low levels of crime and suggest that this may indicate a difference in the context of the violence portrayed and the understanding of the violence. The authors also suggest that this finding may support the notion of exposure to violence as only one risk factor for aggression. Cultural factors have also been discussed in relation to the effect of violent video games on children with low educational ability or from disadvantaged areas. Lemmens and Bushman (2006) have argued that a violence cycle can be observed in the exploration of video game moderators and attraction to violent games. Aggressive children from lower educated backgrounds were found to be more attracted to violent games and this in turn increased aggression, which in turn leads to an increased appreciation and use of violent games. Similar research has explored the link between intelligence and attraction to video games amongst children in the Netherlands (Weigman & van Schie, 1998). Konijn, Bijvank and Bushman (2004) argued that Dutch low education ability boys were more vulnerable to consume more violent media, however, they did not test directly for this hypothesis. Hopf, Huber and Weib (2008) have explored the effects of video games on German adolescents with particular interest in children who are enrolled in the basic school system in Germany. The authors argued that this group of adolescents were particularly relevant to study as the majority of violent adolescent criminals were found to have low educational ability.

Slater, Henry, Swaim and Anderson (2003) conducted an extensive study over a two-year period with 2,550 children aged 11- to 13-years of age. The authors suggest a downward spiral effect can be observed that may be relevant to the effects of violent video games on young people. This effect is seen in the increased aggressive cognition and behaviours after longitudinal exposure to such violence, and this can increase young people's interest in, and desire to access increased amounts of violent media and this can again lead to increased aggression in these young people. It could be that these young people are then more attracted to violent video games that are interactive and engaging after prior long-term exposure to violent media. Despite the apparent strength of this study in terms of number of participants and the time period, the study has been criticised for the insensitive measures used.

Conclusion

Ferguson (2007) has argued that a publication bias exists within the research that is published in the area of violent videogame effects. He has argued that many of the studies that have reported significant effects of videogame violence have used unreliable methodologies and that the convenience samples of college students used in the majority of studies do not allow for a full consideration of the effects of violent games on real-life aggression. In contrast, Anderson et al. (2010) have argued there was no publication bias in their own recent meta-analysis of the videogame violence literature, and that the inclusion of methodologically weak studies in their meta-analysis had little effect on the conclusions that could be drawn from the studies indicating a link between violent video game play and aggression. Other criticism of research exploring the effects of violent videogames has highlighted a number of general methodological difficulties with the research such as the use of small sample sizes and the games employed, that are not always matched in terms of additional structural and other factors (Gentile, 2005). Similarly, Anderson, et al., (2010) have argued that the amount of time that participants are asked to play videogames in an experimental condition is often for a far shorter time than participants would play for if choosing to play the game themselves while Ferguson and Kilburn (2010) and Ferguson (2013) have

argued that much of the research in the videogame violence field have used unstandardised measures of aggression that can inflate effect size estimates.

Despite the criticisms by Ferguson (2007; 2010) of meta-analysis conducted on studies exploring the effect of violent video games, one cannot ignore the comprehensive reviews that indicate violent game play has a significant effect on aggressive behaviour, affect, cognition and empathy across work conducted with over 130,000 participants. It does appear that while there are some methodological weaknesses in some of the studies in this area, the effects have consistently been reported as significant findings with various age groups and in a number of different cultural settings. Following on from these findings, the issue of monitoring the amount and content of videogames young people are exposed to may then be seen to be a key consideration. Roberts, Foehr and Rideout (2005) argue that young people's access to media is a major determinant in the amount of time spent accessing various media. Children who have a videogame console in their bedroom spend at least 32 minutes more each day playing console videogames than those without one in their bedroom. Gentile (2009) recently explored young people's game playing of American 'M' (Mature: 17+ years) rated videogames, and questioned how children were able to get access to these games. Almost half of those aged between 8 and 18 years got the videogame as a gift, and only 5% of those questioned stated that their parents did not know that they had purchased or received this game. In addition, Bijank, Konijin, Bushman and Roelosfma (2009) argued that age labels and violent content labels increase attractiveness of videogames, for all age groups, and across gender.

In addition to observed effects of videogame exposure, the issue of addiction to videogames and online videogames is also a concern as children and adults spend longer amount of time playing these increasingly sophisticated games. The role of structural characteristics of games that allow for a greater attraction to play and for increased learning are considered key elements in an understanding of excessive playing of videogames. Researchers have discussed the role of psychological processes that may be involved in explaining the effects of videogame play include changes in cognition or arousal, whilst moderators of the effects may include developmental stages of players, cultural factors, and key individual factors such as levels of psychoticism, individual differences in anger prior to playing, and a

person's motivation for playing. In a similar vein, moderators of videogame effects allow for an explanation of the individual differences in the effects of videogame exposure. In this sense, the arguments of cause and effect in relation to videogame exposure needs to be extended, to consider the role of additional factors peripheral and/or in addition to the videogame playing. When working with young people in particular, the development of protective factors, and reduction of any identified risk factors can be a constant challenge. Gentile (2004) discussed this additive effect, as the effects of video game play cannot be reduced to cause and effect of playing video games leading to one direct effect. The research discussed in this thesis aims to extend this research by exploring such mediators of violent video games (developmental stages and cognitive distortions while also exploring gender and identification with characters as moderators of any effect of such game play.

In terms of future research in the area of video game research, researchers have called for more rigid methodology and consistently highlighted the need for standardised measures of key variables such as aggression (for example, see Barlett, Anderson & Swing, 2009; Ferguson, 2013). The studies discussed in this thesis aim to address some of these issues by drawing on reliable measures and using a mixed methods approach to exploring the experience of video game playing with a wide sample of players. The key disagreement in the video game research relates to the impact of violent content on players and more long-term research which is needed in this area in particular, with a focus on different age groups. It can be argued that more research is also needed on the possible mediators of such an effect of video game play on the players, exploring factors that may facilitate the learning or any behavioural, cognitive or affective changes in players. This may be a field of study that is particularly relevant in the field of violent video game play as researchers are in agreement on the multidetermined origin of aggression and as such the research in this field can focus on the various processes involved.

An interesting argument recently been put forward by Weber, et al., (2009) has suggested that it is important to consider the individual experiences that people have playing violent video games. Their research indicated very distinct experiences of 13 German males playing FPS games. Here, individuals will create their own story lines within the games they play, and depending on these story lines the level

of violence that they are exposed to, may vary for each individual and each time that they play the game. The authors argued that there is a need for research to look beyond the idea of content of video games as a whole and consider the individual player's experience as unique and varying according to how they are playing. The research suggests that comparing video game effects based on the main content of the games (violent and non-violent) may not provide an overall understanding of these effects, as people are effected by different factors within a game and this can often depend on the choices that they have made. DeVane and Squire (2008) have argued that video game players create their own interpretations of violence and representations in their play, and as such there is a need to consider different cultural groups in future research. There may therefore be an argument to consider the compare the content analysis of game play and compare the amount of violence that individual players have created or been involved in. In addition to this, Chumbley and Griffiths (2006) argue that player's experiences of playing a game can be a significant predictor of affective responses to computer game play. One of the studies in this thesis is designed to explore individual experiences of a sub-group of gamers (female gamers) with a view to considering their experience of playing violent video games and exploring any gender differences that may exist in game play, if one considers that players will experience this differently based on how they play and interact within the game.

In a consideration of any possible impact of playing violent video games on attitudes it is important to explore the impact of these attitudes on behaviour, but also to consider any factors that may be associated with the development of specific attityudes of game players. In the current studies thesis the studies are all discussed in relation to the playing of violent video games and the possible factors that may represent risk factors for the development of specific attitudes towards victims of crime. A consideration of mediators and moderators of such an effect may allow for the development of a model of how the effect of violent video game occurs, whilst accounting for individual differences.

The research is designed to explore the impact of violent video game play on people's attitudes towards victims of crime. The studies discussed were designed to explore the "what" of attitudes, in relation to any observed relationship between violent video game play and attitudes towards victims of crime. The

studies are also designed to explore the "why" of such an effect, in exploring how this effect may occur. Mediators and moderators of the effect are discussed with mediators taken as factors that can explain any observed effect of violent video game play on attitudes towards victims. The mediators in the current research relate directly to developmental stages and cognitive distortions that players may engage with while they play video games (such as attribution of blame and moral disengagement). Moderators in the current study relate to the exploration of any factors that may explain why people may differ according to the effect of violent video game play and may explain individual differences in the effect of video game play on attitudes towards victims. In the current study the moderators explored relate mainly to gender and to a lesser extent to the concept of identification and immersion of players in their game play.

Chapter three outlines the initial study in this thesis, exploring the relationship between violent video game play and attitudes towards victims of crime, within a general population of adults and young people. Chapter four describes a study which further explored this concept, but also considered the mediators that may explain this relationship, allowing for an exploration of developmental stages and cognitive distortions that may explain this relationship. Chapter five outlines a study that was designed to explore female violent video game players and thus consider gender as a moderator of the effect of playing such games and to explore identification and immersion in game play with this particular group of gamers. The moderating effect of gender is also explored in chapter three, four and six. The final study in this thesis, described in chapter six is designed to explore the concept of moral disengagement as a possible mediating factor in the observation of any effect of violent video game play.

It is argued within this research that the use of moderators and mediators of any effect of violent video game play allow for a consideration of an interaction of factors. It is imperative for psychology that an understanding of any observed effect can be explained and explored in relation to possible interventions and outcomes. In this respect a greater understanding of factors that may impact on the effects of violent video game play may allow for a comprehensive understanding of the role of video games in today's society and to compensate for any difficulties that may arise due to an engagement with these games. It

is, in addition, possible to consider these factors in relation to risk and protective factors that may explain the relationship between game play and attitudes, and to consider any observed differences in effects.

Chapter 2: Justification and Rationale for Methodology

The aim of this thesis is to examine the impact of violent video game play on young people and adults, in relation to their attitudes towards victims of crime. A mixed methods approach was adopted to allow a thorough exploration of this topic, with four separate studies completed. The studies were designed to build on the findings of previous studies in the field of video game research and to address any identified gaps in the research in this field. In particular, the research was designed to explore any relationship that may exist between attitudes towards victims of crime and violent video game play, and this represents a new area of research within the field. In this respect, the research was designed using modified scales and new methods of data collection, in order to explore the topic with young people and adults. This therefore represented a challenge but also an opportunity for the research, as the area and the methods employed, have not been used in this manner previously.

The first study in this thesis uses a quantitative approach to exploring the attitudes of gamers and non-gamers towards victims of crime. The second study uses a more in-depth exploration of the attitudes of young gamers towards different types of victims, in order to explore the different components of attitudes. The study uses semi-structured interviews with male and female young people that identified themselves as violent gamers. The third study is an analysis of discussion forums on a female gaming website, designed to highlight the experiences and motivations of female gamers who choose to play violent video games. In the final study a large cohort of adults participated in a survey to explore the link between the cognitive process of moral disengagement and preference for violent game play.

A discussion will now follow of the theoretical and methodological debates concerning quantitative, qualitative, and mixed method paradigms and the rationale behind using the mixed method approach for this study. The arguments will also be highlighted to explain the rationale for the use of the different methods as a means of exploring attitudes towards victims, in each of the four studies. The difficulties which may arise when completing research online, will also be discussed with reference to similar research completed in the field of video game research.

Quantitative and qualitative research

The goal of both qualitative and quantitative research is to achieve a better understanding about how the world works. But qualitative and quantitative methodologies achieve this goal differently, starting with the actual design of the study and including the sampling frame, data collection strategies, and how the data are analysed. Qualitative and quantitative approaches have been distinguished on the basis of the type of data used whether this is textual or numeric; structured or unstructured, the logic employed (inductive or deductive), the type of investigation (exploratory or confirmatory), the method of analysis (interpretive or statistical) and the approach to explanation (Bazeley, 2002). The data in quantitative research are usually numerical, like scores on a task or totals collected from experiments, questionnaires or observations using behavioural categories or scores on a task or totals collected from experiments, correlations, questionnaires or observations using behavioural categories. Quantitative research methods are typically used to understand variation, test causal relationships and to identify the prevalence or distribution of a given phenomenon, within a representative sample of the population.

The goals of qualitative research, on the other hand, are often to understand processes, experiences and meanings people may assign to things. For the most part qualitative research focuses on how people make sense of their settings and experiences through symbols, social roles, identities, and other elements of culture and why people think and act as they do (Kalof, Dan & Diez, 2008). The emphasis in qualitative research is on individuals' own interpretations of their experiences and studying what they say and do in detail. The data can be observations of conversations and other forms of social interaction, the use of symbols, and increasingly images. Qualitative research also tends to focus on the meaning and motivations that underlie symbols (e.g. Language), personal experiences, and phenomena and on peoples understandings of processes in the social world (Kalof, Dan, & Diez, 2008).

With qualitative research it may be argued there are a number of key requirements of the researcher, that are mainly due to the nature of the data collected and the methods used to collect. In this respect, qualitative research relies heavily on the researcher and often on the level of empathy, commitment and involvement of the researcher. It can be argued therefore that a central requirement of the researcher using qualitative data methods, is to develop an understanding of the community or people being explored, in order to fully understand the inner meaning of the qualitative data (Hartley & Muhit, 2003). This can bring an additional difficulty or obstacle to the overall research process. Continuous reflection by the researcher in order to analyse and understand the data within the relevant context, may also be a key requirement in this research. Qualitative research relies on belief that as far as peoples' perceptions are concerned, there is no one single truth. In other words, different people in different places at different times, interpret things differently, and as such this approach can offer a way of exploring people's perceptions across large groups or large spaces of time (Hartley & Muhit, 2003). With this opportunity, however, can be the responsibility of the researcher to engage with the data at a deeper level, than in quantitative research. In this respect it can be seen that there is greater responsibility on the qualitative researcher to engage with their data throughout the collection and analysis process. There is consistent research within the field of social science highlighting the benefits of both types of research, and this is particularly relevant when the two types of data are combined. This will be discussed in more detail later in the chapter.

Mixed methods research

There are strong and separate traditions of quantitative and qualitative research in the social sciences, however according to some researchers, the boundaries between the two approaches are becoming more blurred (Kalof, Dan & Diez, 2008). The current research employed a mixed methods approach to exploring the topic of attitudes towards victims. The reason for employing such an approach may be related to a need to ensure the data collected is corroborated, the need for expansion, or can be related to initiation of the topic (Rossman & Wilson, 1985). There is a growing interest in the combination of qualitative and quantitative research, so called mixed methods research, not least within evaluation and

intervention research in the clinical and policy fields (Creswell & Plano Clark, 2007). This is directly related to the belief that the combination of qualitative and quantitative methods can deepen the understanding within the area of attitudes and motivations. Robson (2002) argues that the rationale for the use of one method over another usually relates primarily to the preference of the researcher, rather than due to one method being favourable for exploring the particular construct. In this respect the use of mixed methods approach allows the researcher to overcome any such limitations.

Studies may combine methods producing quantitative data with other qualitative data, with the key benefit of such an approach being the reduction of uncertainty of researchers (Byrman, 1992). This approach allows for triangulation of findings where multiple sources, methods or theories are used to reach the conclusions (Denzin, 1988). In this respect alternative methods may also be seen to *"tap different domains of knowing"* (Mathison, 1988, p.14) or encourage or allow expression of different facets of knowledge or experience. For example, people responding to interviews or open ended questions will often raise quite different issues to those provided for in a structured questionnaire asking essentially the same question. Interviews and focus groups generate different information, often able to reflect public versus private views (Morgan, 1993) and can create a space where people are willing to discuss more sensitive issues in interviews (Kaplowitz, 2000). Within a mixed methods approach, the research while initially focusing on a single question or topic may consider different topics in a complimentary fashion, within the field of interest.

Multiple methods may therefore be often used in a complimentary fashion to enhance interpretability and to develop understanding as the research process continues. While the use of parallel methods may not be seen to provide corroborative evidence, they are believed to be important for adding to the depth or breadth to a study and perhaps even hold the key to understanding the processes that are occurring (Jick, 1979; Mark, Feller & Button, 1997).

Conducting mixed methods research

The aims of the mixed methods approach in the current research was to explore the impact of violent video game play on player's views of victims of crime. The construct of interest, attitudes, was explored in a quantitative way and then qualitative approaches allowed a more in depth exploration of the attitudes of gamers in study 2 and in study 3. In this sense it was believed that the methods would complement each other and build on the previous research and allow the gathering of rich, meaningful data. The limitations of one approach may be offset by the strengths of another approach and in relation to quantitative research the ability to generalize the results is accompanied with a qualitative study allows further exploration of an element of an attitude or experience in more detail (Creswell & Plano Clark, 2007).

The concept of triangulation, recognises the value of using multiple theories, data collection strategies, data analytic techniques, and both qualitative and quantitative methods to obtain a more complete understanding of the social world. Each additional method that is used to address a particular research question provides another way of looking at a problem and can help offset the limitations of any one approach and this was the aim of using the approach in the current research. Mixed methods can be used to enhance our understanding of a topic typically studied from just a qualitative or quantitative perspective. Therefore, triangulation of methods helps us combine qualitative and quantitative approaches to a research topic, providing a richer understanding of an issue and also helps overcome the limitations of any one data collection strategy. Mixed methods can also give us greater confidence in our findings. If we use multiple methods and they reveal similar information, we can be more confident in our conclusions, and this was of particular relevance in the current research. With mixed methods the finding of different results across methods can result in the increased learning of the topic and allow a consideration of why the results may differ. Despite all these advantages, triangulation of methods can be expensive and time-consuming, that is why they are not more frequently used.

Using the internet for research

Study 3 and Study 4 used the internet for data collection, but in different ways. For study 3, an online gaming discussion forum was examined to identify the experiences and explore the motivation of female violent game players. Study 4 involved conducting an online and offline survey examining the cognitive process of moral disengagement. Griffiths, Lewis, Ortiz de Gotari and Kuss (in press) argue that online data collection is becoming increasingly common for researchers in the field of social sciences, and this may be particularly relevant to studying sensitive data and in particular gaming and gambling behaviours. This may be particularly relevant as the participants are those that are more likely to use online communication and have access to online methods of data collections.

Griffiths (2010) has highlighted different online data collection methods that can be useful in this field of research including online questionnaires, forums, observation, interviews, evaluations, as well as secondary data evaluations. The main advantages of conducting research through the internet have been summarised (Birnbaum, 2004; Griffiths et al., 2012; Reips, 2000, 2002). The main advantages of such an approach relate to the ability to attract and target particular sample populations as required, that as mentioned previously can be particularly relevant to the study of gamers (Woods & Griffiths, 2007), or of people who may otherwise be reluctant to engage in such research (Wysocki, 1998; Woods et al., 2004). Online research can be seen to very simple and efficient way of collecting data (Buchanan, 2007; 2007). In this respect the researcher does not have to be geographically in the same location as the participants (Whitty, 2004) and this fact can also allow for cross cultural comparisons to be conducted simply (Buchanan, 2000).

Data that are collected in an online manner can be explored qualitatively or quantitatively and can facilitate long-term research (Kraut, et al., 2004). It can also be argued that one can have greater confidence in the validity of data that is collected in an online manner, as the disinhibiting effect of being

online can lead people to respond in a more honest manner (Johnson, Paine, Buchanan & Reips, 2008). In a similar vein, Griffiths et al., (2013) argue that the use of online data collection can be of particular value for exploring sensitive topics.

The main disadvantages of online research methods can be similar to those found with offline research, namely the possibility of sampling bias, self-selected samples and validity concerns. Hine (2000) argues however that a particular limitation of the online data collection research methodology relates to the need for the researcher to be familiar with the technology and the virtual and actual context of the data they are collecting. A similar argument has been put forward by King, Delfrabbro & Griffiths (2009) who argues that in order to undertake research within the field of gaming a researcher should be engaging with gamers and the games in order to fully understand the process and eventually the data they are immersed in. Further to this argument, Jankowski and van Selm (2005) have suggested that in the case of online research there is a need for interrater reliability when analysing data, and as such there is a strong argument for the use of teams of researchers working together with data collected in an online manner to ensure this.

Advantages and disadvantages of surveys

Scales were employed in study 1 (attitudes towards crime) and study 4 (moral disengagement) . There is a lack of research directly in the area of attitudes of young people towards victims of crime. In this respect it was important to complete an initial survey of young people's attitudes towards victims of crime with specific interest in the attitudes of gamers. The aim of the study was to examine any differences between gamers and non-gamers concern for victims of crime. The Victim Concern Scale (Clemments, et al., 2006) was used in the present study. This scale was designed to assess levels of concern for diverse types of crime victims. This research method investigates two variables measured on ordinal, interval or ratio scales to look for a relationship between them. Some of the limitations of correlation studies relate to the argument that correlational analysis cannot indicate whether a relationship is causal. If a correlational relationship is found this may be due to one of the measured variables or to

another, unknown, variable and so the use of a mixed methods approach may allow us to try to overcome some of these difficulties, in the current study.

Hutton (1990; p.8) defined survey research as *"the method of collecting information by asking a set of pre formulated questions in a predetermined sequence in a structured questionnaire to a sample of individuals drawn so as to be representative of a defined population."* A survey method was used in the current research in both Study 1 and Study 4. Some of the sources of potential biases within surveys relate to the sampling technique used to obtain a representative sample of participants, the questionnaire itself and the wording used and the effect of social desirability on participants. The primary concern with questionnaires is the need for reliable and consistent answers from participants (de Vaus, 2002). In this sense, participants may answer questions in a particular way in order to present themselves in a positive light. In the present research the researcher attempted to overcome some of these potential biases by asking participants to answer as honestly as possible and highlighting full confidentiality with all participants, and by using scales that have been used in previous similar research, and thus have reported reliability and validity scores.

The advantages of surveys relate primarily to their straightforward and easy approach, particularly relevant to the study of attitudes and beliefs, and their ability to generate high amount of data responses (Robson, 2002). The limitations of surveys relate primarily to the design of the questionnaire, in terms of people's ability and desire to complete the questionnaire correctly and the ability of the researcher to ensure they have a correct sampling of respondents. Robson (2002) also notes that one of the difficulties with this type of research methods is that often respondents may not treat the process correctly, and this argument can be particularly relevant to the current study as the respondents were primarily young people, who may be less inclined to engage in the process fully. The researcher attempted to overcome this by approaching participants in a classroom setting, but it can be noted that during Study 4, there was a high number of participants who did not complete the questionnaire fully.

Semi-structured interviews and vignettes

This study was designed to explore three aspects of attitudes towards victims (victim helping, victim blaming and victim liking) and to examine attitudes towards perpetrators. Cresewell and Plano Clarke (2007) argue that a mixed methods approach to research allows the researcher to build on the strengths that may be inherent in each method of investigation. In this respect the use of quantitative research may be seen to allow a general understanding of concern and attitudes towards victims, as was in Study 1, while the qualitative study develops a more detailed understanding of these attitudes.

The study involved the use of semi-structured interviews with 50 young people, using vignettes and open ended questions and scales to explore the variables of interest. A vignette can be described as a *"short, carefully constructed description of a person, object or situation representing a systematic combination of characteristics"* (Atzmuller & Steiner, 2010; 128). Semi-structured interviews are sometimes referred to as respondent interviews, as the interviewers intention is to remain in control of the interview process (Powney & Watts, 1987). In this respect, the interview is structured by the interviewer, although one of the key advantages of interviews is that they allow some flexibility in terms of the content discussed.

The vignettes were specifically designed to resemble common scenes in violent video games, and a pilot study with young gamers was used as an indicator of the similarity of the vignettes to these scenes. The use of one-to-one interviews with vignettes is particularly useful with young children, and adults with literacy difficulties, as it ensures full understanding of vignettes and questions asked. Recent qualitative research on video games has focused mainly on exploring the reasons for playing video games (Olsen et al., 2007; 2008), and the current study was therefore designed to allow the exploration of specific variables related to victims of crime.

Hughes (1998) argues that *"vignettes highlight selected parts of the world that can help unpackage individual's perceptions, beliefs and attitudes to a wide range of social issues, and as such can offer a valuable way of measuring people's attitudes"* (p.384). Renold (2002) argues that vignettes can be a useful way to explore sensitive issues with young people, as it can be easier for the participants to discuss

personal issues through the discussion of what has happened to another person. In this sense, the use of vignettes allows the participants to reflect on the issues presented to them without having to consider their own actions and responses. This was of particular relevance in the current study as the research was conducted with young people.

The research on attitudes to victims has used the method of vignette presentation in numerous studies to date (e.g., Barter, & Renold, 2000; Corser & Furnell, 1992; Cawson, Berridge, Barter & Renold, 2001; Faia,1979; Finch, 1987; Hazel, 1995; Hughes, 1998; Poulou & Rahman, 1996, Morisset, Terrade & Somat, 2010) and offers an interesting and useful way to present real life vignettes and to facilitate the discussion of sensitive issues (Renold, 2002). One of the main strengths in the use of vignettes in social sciences research can be seen in their ability to present several contextual factors at once within a scenario (Atzmuller & Steiner, 2010) Research using vignettes to explore the effects of violent video games has been conducted in previous research (Funk et al., 2003), in particular with children.

While exploring attitudes in research, the person perception method has been put forward as a way of studying immediate perceptions towards different types of people and characters. This method involves participants reading a vignette and their immediate impressions are assessed through rating characters described in the vignette on bipolar adjective scale (Rayburn, Mendoza & Davison, 2003). Previous research (Asch, 1946; Jones, 1979; McKinney et al., 1987) has suggested that this method may address social desirability difficulties, as it does not require participants to focus on conscious, deliberate decision-making processes. The method can therefore be used to help researchers explore sensitive issues such as attitudes towards victims and perpetrators of hate crimes and non-hate crimes (Rayburn, Mendoza and Daviso, 2003). In the current research this method was used to examine attitudes towards perpertrators of crime as described in the vignettes.

Semi- structured interviews

The main advantage to interviews relates to their ability to allow the researcher to be flexible and to adapt to the information that is given by the respondents, and this is true regardless of the structure of the

interview. Robson (2002) highlights one of the real benefits of face to face interviewing as the ability to modify one's line of enquiry and follow up on interesting responses that would otherwise be impossible to do. This was particularly relevant for the current qualitative study as the research was completed with young people and the researcher was able to address any misunderstandings with them as the interview took place and ensuring that the vignettes were read correctly.

The main limitations of interviews relate to the skills and involvement of the interviewer in the process. Interviews always involve some form of interaction between the investigator and the respondent, and this factor distinguishes the technique from self-administered questionnaire methods in which respondents sometimes never see, much less interact with, a researcher. The interactive nature of the interview, and its dependence on verbal or linguistic responses, constitutes at one and the same time its major strength and its major drawback as a method of social research. Some researchers have argued that it is almost always easier and cheaper to use written questionnaires completed by respondents than it is to expend the time and effort necessary for an interview (Bartholomew, Henderson, & Marcia, 2000).

Crano and Brewer (2002) argue that a common use of the interview is in assessing people's attitudes and intentions, arguing that interviews can also be important when exploring private beliefs and opinions, or implicit attitudes. Sometimes, the focus of an investigation is on behaviour that is of a highly personal, secretive, or illegal nature. People engaging in such actions usually are not willing to be observed; however, surprisingly, they often are quite willing to discuss their experiences, especially if they can be assured of anonymity or confidentiality.

Some of the main limitations with such qualitative research methods relate to the generalizability of the findings of these studies to broader populations that can be limited by small sample sizes, the unique characteristics of the population being studied, and even the researchers' subjective interpretation of the populations' responses (Mills et al., 2005). The role of the researcher in the interview process can be seen as a key determinant of the reliability of the interview process, as their skills in reading the respondents

replies and determining the steps to take are crucial, although it can be argued that the interviewer skills may be less in semi-structured interview process.

In relation to samples used in qualitative research Coleman, et al., (1996) argue that random samples are not usually required and subjects are chosen in the hope that they will allow investigation of particular aspects of the attitudes or behaviours that are under scrutiny. The researchers further argue that as there are no concrete guidelines that state how sampling should be undertaken for qualitative studies, researchers have to decide for themselves which methods are most appropriate to the questions they hope to answer. In this respect, the use of quantitative data is believed to be able to allow stronger generalizability to the larger population.

Method of analysis

Thematic analysis was used to analyse the data in Study 2. The term content analysis broadly describes a wide-ranging and diverse domain of techniques designed to describe and explicate a communication or series of communications in a systematic, objective, and quantitative manner. In many ways, the data in most common types of content analyses resemble those obtained in open-ended, exploratory interviews.

The exploratory interview imposes no restraints on the questions of the interviewer or the allowable responses of the participant. The researcher has little or no control over the stimuli giving rise to the specific response or the particular form in which the response is framed. Similarly, in most content analyses, the investigator is concerned with a communication that (a) was not elicited by some systematic set of questions chosen by the analyst, (b) probably does not contain all the information he or she would like it to contain, and (c) is almost invariably stated in a manner not easily codified and analyzed. In research contexts, the interview or content analysis, the investigator must transform these qualitative unstructured messages into useful data for scientific, quantitative analysis.

Discussion forum and solicited discussion forums

The third study focused on the area of female gamers who chose to predominantly play violent video games. With increasing numbers of female gamers the need to explore the experiences of these gamers appears to be a gap in the field and this is particularly evident in the lack of research within the field of violent video games. Griffiths, Lewis, Ortiz de Gotari and Kuss (in press) argue that online forums can potentially contain a rich and complex resource of textual material. This may include a person's experiences, perceptions, beliefs and feelings, and as such is of particular relevance to the current study that involved the exploration of motivations and experiences of female gamers. This was particularly relevant for the exploration of female gamer's experiences and motivations, the use of a non-formal setting for the discussions of experiences and beliefs may offer a more comprehensive understanding of the experiences of these gamers.

The data were collected from a public online discussion forum intended for female gamers. After surveying various different online gaming forums, one particular website was chosen for analysis is it was predominantly used by female gamers who played a variety of different genre of games, but the most common games that the female gamers highlighted as favourites were First Person Shooter games and Role play games, followed by action games, horror games and platformers.

Qualitative research typically follows an inductive process, while quantitative research usually follows a deductive approach. With an inductive approach, data are collected and theoretical insights are derived from the data. In this respect, the theory is 'induced' from the data rather than having conclusions about what the data should look like if the theory is true. (Kalof, Danz & Thiez, 2008). The research was therefore conducted within an inductive thematic analysis approach, which can be described as a method of observing themes from the data without having a particular preconception of the various themes that would emerge (Braun & Clarke, 2006).

The benefits of adopting such an approach can be related to the fact that some research topics do not have an existing theory on which to draw and the data can help generate theoretical insights in such cases. In other instances though, the decision to use qualitative methods is based on the epistemological orientation

of the scholar. It can be argued that by allowing the theory to emerge from the data can yield a more accurate view of reality than emerges from refining theories in the light of data. They argue that theories can be biased and limited, and by looking at a research question from a particular theoretical lens this can lead the researcher to have tunnel vision. It is possible the researcher would miss some important insights by not being open to possibilities beyond the existing theory, as they are only considering one theoretical perspective.

Thematic analysis was chosen to analyse the data collected because of its flexibility and depth in allowing for an exploration of participants' feelings and motivation (Braun & Clarke, 2006). Following initial familiarising of all data, the discussions were read and responses were collated under main themes, and allocated provisional labels. Responses were then re-read and further sub-themes were identified, and the initial themes redefined. The responses were explored for both actual and semantic meaning, allowing for the development of more meaningful and rich data to be analysed. The semantic approach to data analysis examined the themes that were observed and at times looked beyond the observations and theorised possible reasons and implications for the themes, in order to allow a more comprehensive exploration of the female gamers' experiences of (and motivation to) playing violent video-games.

The advantages of conducting research with online discussion forums can be related to the efficiency of the cost and time to conduct the research, the ability to target specific populations, the ease that people can participate at their own convenience and the potential to use rich and complex resource of textual material that can be revisited after the event. In terms of reliability of the data collected. Griffiths et al., (2013) argue that there may be more willingness and openness to discuss issues in discussion forums online, rather than in face to face discussions. Edmunds (1999) highlights participants' openness and anyonminity in such forums as a key advantage of the approach.

The richness of the available data in online discussion forums necessitates that the researcher is able to set predefined variable boundaries to help them to decide when the collection should cease. As with all online data collection methods Griffiths et al., (2014) argue that researchers must also be aware of the

context of the data they are collecting, in particular taking note of the possibility that some of the communication may have been removed, or elements of the communication may have taken place elsewhere or privately. Im and Chee (2006) argue that researchers make very apparent in the research process the language and jargon used as this may not be immediately obvious to the reader.

Ethical Issues

Ethical issues in qualitative research

The ethical issues in qualitative research can be the same as those in quantitative research, (confidentiality, anonymity, right to withdraw, assessing risk of harm, researcher safety, deception, need for debriefing and the use of incentives). However, within qualitative data collection there can be a need to deal with some of these issues in more depth than in quantitative research (King, 2010). In terms of the more personal and possibly longer nature of qualitative research there is an argument for the need for on-going consent to participate throughout the process (for instance at the start, during the process and at the end) (Ramos, 1989). Confidentiality should be approached differently due to the reduced number of participants and the increased possibility of identifying people's participation. These limitations to confidentiality can make the risk of harm to participants more of an issue in qualitative research (King, 2010).

When conducting research conducted with children who are old enough to understand language, the researcher should also try to inform them of the nature of the study, explain what they will be asked to do during the study, and tell them that they do not have to participate and can request to end their participation at any time (Jackson, 2009). This was particularly relevant in Study 2, with some of the young adolescents. The question remains, however, whether children really understand this information and whether they would feel comfortable exercising these rights. Thus, when doing research with children, the researcher must be especially careful to use good judgment when deciding whether to continue collecting data from an individual or whether to use a particular child in the research project. In

the current study, young people were approached in youth service settings and all materials were piloted and shown to key adults in the services prior to showing the young people, to ensure that the material did not present any sensitive or disturbing material for the young people involved. Additional safe guards put in place in the current study included the distribution of questionnaires and interview material to youth workers and teachers to ensure that the material was not particularly sensitive to the children being interviewed and surveyed. The articles used in the vignettes were taken from newspaper articles from outside of Ireland and all names and identifying information changed in order to safe guard against the possibility of the participants being presented with information on crimes that were relevant to them. The piloting of the questionnaires and interview topics was also used as a method to address any issues with the sensitive nature of the material to be used in the studies.

Ethical issues in online research

King (2010) argues that the use of the internet and online communication brings a new dimension to ethical considerations and has led to the publication of dedicated guidelines from professional bodies for this type of research. One of the key ethical concerns in this type of research can be related to the participant's initial expectations when they engage in online communication. It has been argued that participants in online forums cannot have expectations of privacy as they are freely accessible to the public (Hurley, Sullivan & McCarthy, 2007). All of the postings in the Study 3 were on an online forum in the public domain and usernames and passwords were not needed to access the site. However, similar to previous research with online discussion forums (Maratea, 2011), measures were included to protect individuals' anonymity. Specific details of the website are not disclosed and the comments made are identified by a pseudonym only. The researchers did not participate in online communication or online interviews on the site. All names and identifying information have been changed to ensure confidentiality of all people who posted on the site.

In relation to Study 3, Griffiths and Whitty (2010) argue that although informed consent can easily be obtained online for online surveys, there is much debate over whether it is required when people use postings on public online forums (Sveningsson, 2004). Withdrawal of consent in online studies it not as

straightforward as in other situations. For instance if a participant does not complete a survey it is difficult to determine the motivation for withdrawing, so the researcher must consider if the participant exited deliberately or was their online connection terminated? (Buchanan & Williams, 2010; Whitty, 2004). Confidentiality can also be a major concern given that many online surveys are hosted on insecure sites and so it can be difficult to confirm complete anonymity to all respondents (Reips, 2002). Online surveys give researchers the opportunity to collect larger samples, but there are difficulties with this also. The collection of data from ethnically diverse samples may sometimes make research findings more difficult to interpret (Ess & Jones, 2004).

Another concern that is more unique to studying online interactions is the participant's perception of the online space. Although online interactions are often observed by many other people, the person online may not perceive their interactions as public, and this may be particularly relevant in online discussion forums. A public space is much more obvious in face-to-face settings. Whitty (2004) argues that although interactions take place online in public spaces, this does not mean that the intended audience is a social science researcher. In relation to sensitive issues, she warns that researchers need to think about how the participant would feel if they were included in their studies without giving any consent.

Another issue in the use of online data collection, relates to the issue of researchers lurking while they collect their data. It is argued that researchers should only observe people in a situation where they would ordinarily expect to be observed, such as a public space. However, in cyberspace these boundaries become blurred as it is often difficult to ascertain what, exactly, is a public domain and, what constitutes a private domain (Wood & Griffiths, 2007). The current research relied on data that was collected from a public discussion forum that had been in the public domain for over a year, and as such the researcher was not lurking in the discussion forum.

The current research therefore involved a mixed methods approach to data collection, combining the use of quantitative and qualitative research methods to explore violent gamer's experiences of gaming and attitudes towards victims. By considering and reflecting on the strengths and limitations of previous

studies in the area, and the methods adopted in other studies to explore the constructs, the present research adopted a triangulation approach in order to explore gamer's attitudes in a comprehensive manner. By exploring online discussion forums, using scales and semi-structured interviews it is believed that the research is developing (i) an understanding of different groups of gamers experiences, (ii) the different components of attiudes towards victims, and (iii) an exploration of possible mediators and moderators of these attitudes.

Chapter 3: Violent video games and attitudes towards victims of crime: An empirical study among youth (Study 1)

Introduction

Attitudes

Azjen (2005) argues that attitudes can be described as *"dispositions to respond favourably or unfavourably to an object, person, institution or event"* (p.3). Attitudes can be described as key descriptor people use to describe themselves, but can also play a role in the identification of other people, through an examination of their attitudes towards certain events and objects (Bohner & Wanke, 2002). Attitudes often serve another function of facilitating the categorisation of others according to the attitudes that they hold, and allow for a degree of predictability regarding others behaviour and attitudes that they may hold. As human beings are constantly processing large amounts of social information, the ability to categorise and predict future behaviour is a key process that is relied on to allow the processing of this vast amount of social information.

Ajzen (2005) further argues that attitudes are assumed to be relatively stable constructs that are resistant to persuasion, are reliable predictors of future behaviour. Social psychologists are interested in the impact of attitudes on behaviour and in particular the impact of attitudes of different strengths on behaviour. The MODE model of attitudes (Fazio, 1986; 1990;; Fazio & Towles-Schwen, 1999) argues that attitudes are learned associations in memory and that the strength of attitudes has a bearing on their influence on our perceptions and our judgments regarding the information we process. The theory argues that the stronger the attitude, the more influence this attitude may have on a person's behaviour. Psychologists are interested in attitudes as they argue that they influence directly on our thoughts and on our behaviours. The strength of attitudes, the accessibility and the origin of the attitude all play an important role in determining their impact on our thoughts and our behaviour. The study of attitudes and their relationship to violent video game play may therefore be of particular relevance if we can explore the strength of these attitudes and their relevance. In the present research violent video game play and a possible

relationship to attitudes towards victims of crime is explored. The engagement with violence within a violent video game is hypothesised to be associated with specific change in attitudes towards victims, as the content of the games and the portrayal of victims in the game has an impact on overall attitudes towards victims in real life. The research is designed to explore the attitudes of adults and young people who regularly play violent video games, with a group who do not play such games in order to explore both groups' attitudes towards victims of crime.

Attitudes towards victims

Attributions are constantly made about people who are victims, and regarding the level of responsibility of the victim for the crime of which they have been a victim. Research on attitudes towards victims has explored the types of victims that appear to elicit higher levels of blame or a lack of empathy and understanding from others. Victim blaming can be described as a devaluing act that occurs when the victim of a crime or an accident is held responsible for the crimes that have been committed against them (Andrew, Brewin & Rose, 2003).

The research on attitudes towards victims of sexual violence has focused on three main explanations that have been proposed to explain this tendency to attribute higher levels of attribution of blame to victims. The rape perception framework (Anderson, 2004; Pollard, 1992; Krahe, 1991) relates to the finding that victim, situational, and perpetrator factors are often used as the main factors when attributing blame to victims of sexual violence. Factors such as the clothing of the victim (Workman & Freeburg, 1999) and the level of victim resistance to the crime (Wyer, Bodenshausen & Gorman, 1985; Yescavage, 1999) have been found to be key factors that people consider to be salient when attributing levels of blame to victims of sexual violence. Mulder and Winkel (1996) contend that the overall attitudes towards victims, in cases of sexual assault and rape, are often formed through extra-evidential factors, which are often used to form an opinion on the creditability of the person's statements.

The research in this area has also explored the use of defensive process people will use to protect themselves, while explaining the action that has occurred to victims of rape. The just world theory

(Lerner & Matthews, 1967) and the defensive attribution hypothesis (Shaver, 1970) explain how people can distance themselves from the plight of the victim, and through this process attribute higher levels of victim blame, than expected, while simultaneously comforting themselves that they are safe/exempt from this type of occurrence. The just world theory (Lerner 1965, 1981), argues that people can find it difficult to understand a world that is chaotic and where people get hurt who do not deserve it. The theory states that to overcome this difficulty people can argue that victims may have somehow deserved the fate that occurred to them. The defensive attribution hypothesis (Shaver, 1970; Thornton, Ryckman & Robbins, 1982; Muller, Caldwell & Hunter, 1994) argues that we attribute positively to people who are similar to us, which can have an additional benefit of protecting us from negative attributions if we were in a similar situation in the future (Anderson, 2004).

In exploring attitudes towards victims, the relationship between gender and victim blaming has indicated key gender differences. White and Robinson Kurpius (1999) reported that men hold more negative attitudes towards rape victims than females in their research with undergraduate students. Bryant and Spencer (2003) found that male university students were more likely to blame victims of domestic violence for provoking their husbands than female participants, who were more likely to blame the perpetrator of the violence. In research conducted with prisoners, older offenders and female offenders were found to hold more positive attitudes towards victims than male younger offenders (Ireland, 1999). Male students have been found to make more negative judgements about victims of intimate violence (Kaneker et al., 1985; Thornton & Rickman, 1990), and to attribute higher levels of blame to female victims than to male victims (Holcomb, Holcomb, Sondag, & Williams, 1991; Muehlenhard & Linton, 1987).

Research conducted with children has focused on the perceptions that young people have on victims of bullying and has explored any prevalent attitudes associated with a positive or negative attitude towards this form of peer aggressive behaviour. Rigby and Slee (1993) found that a positive attitude towards victims correlated negatively with bullying behaviour in an Australian sample of children aged 6-16 years of age, while Boulton and Hawker (2000) argue that attitudes towards bullying was found to

significantly predict involvement in bullying with a group of 13-15 year olds. Similar research has found that one of the main predictors of readiness to support victims of bullying was having a positive attitude towards victims (Rigby & Johnson, 2006). In relation to gender differences primary school students have been found to be more accepting of females use of violence and the boys were more accepting of violence overall than girls in the study (Price et al., 1999).

Positive attitudes towards aggression and violence have been found among aggressive children and adolescents, as compared to their non-aggressive counterparts (e.g. Perry, Perry, & Rasmussen, 1986; Slaby & Guerra, 1988). More recently, results of several studies have shown that children who bully others also express more positive attitudes regarding the use of violence and aggression in response to social difficulties (e.g., Bentley & Li, 1995; Bosworth, Espelage, & Simon, 1999; Olweus, 1997). Hymel, Rocke-Henderson and Bonanno (2005) set out to examine the processes by which student attitudes and beliefs contribute to their involvement in bullying behaviour within the framework of moral disengagement. The researchers argue that young people often justify their behaviour through social cognitive strategies that permit moral disengagement during the school years as a means of justifying and rationalising bullying behaviour. Researchers have argued that in order to explain and protect ourselves people can attribute blame to victims and this can then leads to a less positive view of victims. In research with children Fox, Elder, Gater and Johnson (2010) have found that a strong belief in a just world in children is associated not only with high self-esteem but also with increased sympathy for victims of bullying.

Video game research

There has been a considerable amount of research exploring the impact of violent video games on desensitisation to violence. The research on long-term and short-term violent video game playing has suggested a link between this game play and the loss of aversive responses to violence and aggression, and a decrease in empathy. (Fanti, Vanman, Henrich & Avraamides, 2009; Bartholow et al., 2005, Funk et al., 2004). Physiological desensitisation has also emerged in recent research with people following violent video game play (Staude Muller, Bliesener & Luthman, 2008; Carnegey et al., 2007; Bartholow,

Bushman & Sestir 2006). Recent research has argued for a neural marker that accounts for the desensitisation that follows exposure to violent video games and an increase in aggression (Engelhardt, Bartholow, Kerr & Bushman, 2011).

Ladas (2002, cited in Hartmann & Vorderer, 2010), suggested that violent gamers have reported that the opponents that they harm and/or kill in video games are often viewed as objects or obstacles, and as such are not viewed as real crimes and/or harm being done to another person. The key question that may be considered in relation to this argument, is if this idea stems from the playing of video games, if this cognition is important for distancing oneself from the violence in gamesand as such come about as a result of game play and experience, or is a necessary framework to allow gamers to continue to justify the behaviour to themselves as they play. In this sense the level of disengagement players may experience can be viewed as a result of playing violent video games, or as a strategy to allow the continued playing of such games.

Hartmann and Vordere (2010) reject the view that gamers do not see their opponents in these games as social beings. They argue that in order to do this the gamer would be decreasing their ability to immerse themselves in the game, and thus reducing some of the potential enjoyment of the game playing experience. The researchers also argue that the process of recognising computer generated figures as a social being may be an implicit process that has previously been found as humans have the tendency to anthropomorphise game characters (Mar & Macrae, 2006). In addition, the researchers point to key research conducted on video game engagement, that indicates humans can develop empathy towards animated characters (Morrison & Ziemke, 2005), will report feeling that they are in a social setting when such characters are presented (Hartmann, 2008), and generally will generally behave towards these characters as if they were human (Yee, Bailenson, Urbanek, Chang & Merget, 2007).

Klimmit, Schmid, Nosper, Hartmann and Vorderer (2006) have reported that gamers will describe feelings of moral concern during their game playing, while being aware that the game was fantasy. It can be argued that if participants are feeling moral concern for their actions in a game, yet they are still

conducting this type of action (i.e. hurting people), then a social dilemma exists for the person. Hartmann and Vorderer (2009) argue again, that this may reduce the level of pleasure that the person is getting from the games they are playing. Festinger's (1954) theory of Cognitive Dissonance argues that a level of anxiety results from a person acting in a way that is inconsistent with their beliefs and attitudes about an attitude object. In this sense, the gamer may be motivated to change their attitude and/or their behaviour in order to justify the actions that they are involved in during their violent video game play, in order to reduce this level of discomfort. It therefore follows that if players do not change their behaviour, and continue to engage in violent game play, it would be necessary for them to change their attitudes towards victims in order to reduce dissonance and and this could be achieved through a reduction in concern for victims.

Bandura (1999; 2002) offers a similar theory of moral disengagement with four major categories of psychological mechanisms by which 'good people do bad things', including the cognitive destructuring of harmful behaviour, obscuring or minimising one's role in causing harm, disregarding or distorting the impact of harmful behaviour, and blaming and dehumanising the victim. According to Bandura, moral disengagement serves to disinhibit individuals, making negative and inhumane acts more likely, as the individual is freed from self-censure and potential guilt (Bandura, 1999; Bandura et al., 2001). In this sense, it can be hypothesised that violent gamers may alter their view of victims in order to reduce their perception of harm that they can cause to virtual victims.

Klimmit et al., (2010) have argued that players try to avoid moral concern when playing violent video games as this can reduce their enjoyment of the game they are playing. The authors argue that players will dehumanise the characters in the video games that they are playing, in order to morally disengage from the apparent harm that they are causing as they play these games. Hartmann and Vorderer (2010) argue that there are two key mechanisms that allow players of violent video games to morally disengage as they play. One of the mechanisms is an inner reflection or rationalisation technique that the users will use to remind themselves that they are just playing a game, or are fighting for justice, if they experience

any unpleasant internal emotions as they are acting in a violent way in the game towards another character (Klimmit et al., 2006).

It has been argued that the structure of violent video game may play a key role in framing the violence in these games as acceptable (Hartmann & Vorderer, 2010). This may occur through the portrayal of violence as acceptable which is seen in particular cues in the games such as the requirement to save the world or partake in other general justified violence. Recent research conducted by Hartmann and Vorderer (2010) explored four key cues they argue are implemented in video games to facilitate gamers to morally disengage from concern about virtual violence they are involved in, justification of violence, neglect of consequences, dehumanisation of opponents and condemning opponents actions. The researchers argued that their results indicate that less negative affect was reported by participants when the game contained condemnable action of opponents or justification of violence. The researchers acknowledged that their research was conducted with people who had little interest in video games and thus can be seen as less frequent players of video games.

The structure of video games may therefore be a key element in the reduction of gamer's feelings of conflict or anxiety as they engage in behaviour that they feel is contrary to their attitudes regarding appropriate behaviour and towards victims of crime. Viera and Krcmar (2011) argue that the structure of violent video games limit children's abilities to develop perspectives of victims and does not encourage affective sympathy in children, as any negative effects of being harmed or killed in the games are minimised ignored, or even rewarded. The graphics and realism in games has increased substantially in the past twenty years and Hartmann and Vorderer (2010) argue that research has shown that game designers will use key cues in the development of characters in games that can increase our perception of the virtual characters as real, such as the displays of emotions, natural facial expressions and breathing and the use of natural sounding vocal tones. However, it can be argued that in violent games such as war games, the opponents in the game often have their faces hidden by masks and may not speak, thus the person playing the game may not be aware of these elements of the enemy characters that they are facing and as such these factors may not play a role in this genre of games.

Previous researchers have argued that children have difficulties drawing appropriate distinctions between aggression in fantasies and in reality, and that this may affect their ability to comprehend the appropriateness of the use of aggressive solutions portrayed in violent video games (Smith & Donnerstein, 1988; Huesmann 1998). Recent research by Viera and Krcmar (2011) has led the researchers to argue that violent video game playing in children (aged 7-15 years) is negatively related to the ability to take others' perspectives and to sympathise with others. One hundred and sixty-six children completed questionnaires related to perspective-taking and sympathy. The children then read four scenarios where the character used violence to solve a problem and answered questions regarding if they felt the violence was right or not, as a measure of moral reasoning about violence. The stories used on the study were short and described cases where adults used either unjustified or justified violence. It could be argued that the ability to perceive the justification of the violence in these cases would be difficult for the younger children in the study.

While most of the research on video games has explored the impact of playing games and being responsible for the aggression in the games, recent research has explored the impact of also being a victim of such virtual aggression. The research has reported the impact of experiencing violence as a victim in a video game can affect player's subsequent social cooperation and player's judgments of trust in others (Rothmund, Gollwitzer & Klimmit, 2011). The researchers have argued that the impact of experiencing virtual aggression in a video game as a victim, can lead to people developing a more suspicious mind-set, and this is increased for people who have what they term higher levels of victim sensitivity. The sensitivity to mean intentions (SeMI) model argues that a particular personality trait (e.g., victim sensitivity) indicates a readiness of people to respond to cues that suggest to them that others may be attempting to exploit them and this leads them to engage in behaviours to reduce the opportunity of people to do this. This results in a reduction in cooperative behaviour and trust in others.

In their research, Rothmund, Gollwitzer and Klimmit (2011) argue that experience of virtual aggression against participants' own character in video games led to a decrease in trust in partners actions and in co-

operation, after playing these games (for an undisclosed amount of time in a laboratory setting). People with high victim sensitivity were more affected by the experience of virtual aggression. The research used only male participants and explored short-term effects of video game play only, and it is unclear from the research if the male participants were long-term players of these games (as the girls were excluded due to lack of familiarity with the controls). As Weber, Behr, Tamborini, Ritterfiekld and Mathiak (2009) note, there are significant differences to be found in video game research, in the amount of time that researchers have required participants to play violent video games for their research, and argue that this is important if we consider that each player's individual experience of playing a similar game can be very different as their in-game choices create their own specific game content.

The present study was designed to explore the potential impact of playing violent video games on young people's attitudes towards victim of crime, and to add to the literature in the impact of violent video games on attitudes. It was hypothesised that long-term playing of this genre of video games can lead to a less positive attitude towards victims of crime in young people. Attitudes can be defined as a disposition a person may have to respond favourably or unfavourably to an object, person, institution or event. (Ajzen, 2005, 3). They are beliefs and feelings that predispose us to respond in a particular way to objects, people and events. As attitudes are hypothetical construct that are inaccessible to direct observation, they must therefore be inferred from measurable responses, and are often explored through the use of methods that ask people to describe their feelings and their behaviours in certain situations. The present research is designed to explore concern for victims of crime, as a measure of different components of attitudes towards victims. In addition developmental stages are considered as a possible mediator of any effect of violent video game play, whilst exploring gender as a possible moderator of any effect of game play on attitudes towards victims of crime. Any relationship observed between violent video game play and attitudes towards victims may be seen to suggest violent video game play as a possible risk factor for the development of reducedconcern for victims of crime.

Variables Explored in the Present Study

Hypothesis 1: There will be a negative relationship between exposure to violent video games and concern for victims.

Exposure level: The previous research on the effects of video games has used different levels of video game play, with some research using participants who were long-term players and others who were light or novice players of violent video games. The current research was designed to explore the impact of long-term exposure to violent video games, with participant's level of violent video game exposure reported and explored in relation to their attitudes towards victims.

Different Victim Types: The present research is interested in exploring the attitudes people may have regarding different types of victims. The research on attitudes has mainly focused on victims of particular crimes (for example victims of rape, bullying, and domestic violence). The present study was designed to explore the level of concern that gamers may have towards four different types of victims: (i) general victims, (ii) culpable victims, (iii) vulnerable victims and (iv) victims of property crimes. These victims relate to both serious and less serious crimes, and it can be argued that this allows for the consideration of any impact of violent video game play on attitudes towards differnet types of vcitms of crime.

Hypothesis 2: There will be a significant gender differences in attitude towards victims' scores, with boys reporting less concern for victims.

Gender

Previous research has looked at the effect of video games on males and female gamers. Anderson and Dill (2000) found no reliable gender difference in the effects of this type of video game play on college student participants. Bartholow and Anderson (2002) found significant gender effects of playing violent video games on aggression for male and female undergraduate students who were light users of video games (categorised by having played less than once a week during the preceding six months). The

researchers argued that young men may be more affected by the playing of these games than the young women who participated. The researchers contend that the choice of game in the research and the measure of aggression may have a confounding influence on the effects found.

It has been argued that the effects of violent video game may have very different effects on children than on adults (Smith & Donnerstein, 1998; Huesmann, 1998), and so it is interesting to consider the possible differneces in gender in research with children and young people. Cooper and Mackenzie (1986) found that young girls 9-11 years of age, were more aggressive in their free play, after playing a high violent game, than a matched group of girls who played a low violent game. Other research with children has reported an increase in aggressive play after exposure to violent video games in both boys and girls (Anderson, Gentile & Buckley, 2007; Konijin, Bijvank & Bushman, 2004; Funk et al., 2003).

The genre of violent video games has changed dramatically over the past 20 years in terms of content and graphics of the video games. Consequently, Bartholow and Anderson (2002) argue that the results of early gaming studies may not be generalised to current violent video games. The measures of aggression used in these early studies with children were ratings of aggressive behaviour during free play and this may also have an effect on the results. However, these studies did not generally allow for a consideration of previous level of play and as such the gender effect may actually be confounded by the effect of previous exposure to these games, that it can be assumed would be higher for males than females (Fling et al., 1992). Recent research on the effects of violent video game playing with girls has reported that co-playing these games with a parent can lead to a positive outcome for girls, but suggested no apparent effect for boys (Coyne, Padilla-Walker, Stockdale & Day, 2011). The outcomes for girls may be related to the level of connectedness that the girls feel with a parent and the dialogue and relationship that can develop between the two as they share a common interest.

It is important to consider the research exploring gender differences in general aggression, before considering any gender differences that may be due to violent video game play. Bettencourt and Miller's (1996) meta-analysis of studies in this area led them to conclude that gender differences in aggression are

reduced when the aggression is preceded by provocation. The measures used in the research, such as Coyne et al., (2011), were related to aggression and pro-social behaviour towards family members and this may be something that displays key gender differences without the effect of any video game playing. Viera and Krcmar (2011) found that girls aged seven to fifteen years were more likely to report higher levels of perspective taking and ability to sympathise, than boys of a similar age. The researchers argue this may be related to social conditioning, family environment and general societal reinforcing of stereotypical views of girls (Viera & Krcmar, 2011, 126).

Hypothesis 3: As children get older they will report less concern for victims of crime.

Developmental Aspects: The research reveals that victim-liking decreases as children get older, and the current research is interested in exploring the impact of age on attitudes towards victims, with age as a possible moderator of the effect of violent video games on young people and adults. Viera and Krcmar (2011) found that age is negatively related to perceptions of unjustified violence, and as children develop their ability to understand others' perspectives increase, although younger children seemed to sympathise more, as measured by children's responses on a four-item scale developed for the research. The scale asked children to agree with statements such as *"I get upset when I see someone hurt."* Three of the items were related to people being upset, alone, and hurt while one referred to feelings when animals get hurt. The researchers argue that their findings in relation to age differences suggest that that older children play more video games and are more likely to see violence as a retaliation and self-protection as justified, *"much like the view of violence presented in video games"* (2011; p.127). The literature on bullying suggests that victim-liking decreases also with age (Menesin et al., 1997; Rigby & Slee, 1991, 1993) and pre-pubescent students in particular report more favourable attitudes towards victims, than younger pupils (Gini et al., 2008). The research therefore suggests a picture of reduced concern and general positivity towards victims as age increases. It is therefore interesting to explore the role of developmental stages as a possible moderator of any observed effect of violent video game with adults and young people.

Method

Participants: The sample comprised 206 participants (129 males and 76 females) from four different second level schools and one third level education institution, in Dublin. Ten school principals in Dublin were contacted by email and telephone and four schools agreed to participate. The participants were aged between 12 and 24 years (mean = 16.85 years; SD = 2.57 years).

Materials: All materials were self-report surveys. The following measures were used in this research to explore attitudes towards victims and video game playing habits.

Victim Concern Scale

The Victim Concern Scale (VCS) was designed to assess levels of concern for diverse types of crime victims (Clemments et al., 2006). The researchers argued that few studies have explored attitudes towards different types of victims of crime, and (as previously discussed) the only relevant research has focused on particular types of victims (e.g., victims of rape and bullying). In their design of the scale. Clemments et al., (2006) chose items that represented different domains of victims and victim characteristics, for example to represent a wide range of victim demographics, types of crime, victim vulnerability and culpability. The scale was used in the current research as it allowed for a consideration of attitudes towards victims of crime overall, but also because it allowed a consideration of attitudes towards specific types of victims that it can be argued represent the main classifications of crimes in society. The scale also allowed for a consideration of a wide range of victims, and with adaptations made to the scale allowed for a consideration of attitudes towards victims that were culturally relevant. It can be argued that the scale also allows for a consideration of attitudes towards victims of a wide range of crimes, from very severe to less severe crimes. As it is generally assumed from the research that attribution of blame is a common mechanism for distancing oneself from the reality of such crimes it is interesting to consider this with varying degrees of crime severity. The scale also includes a range of male and female victims, thus reducing any possible bias towards a specific type of victim. As violent video games would primarily

include victims of more severe crimes, it is interesting to explore not only these victims, but also the less severe victims and any relationship between attitudes towards these victims and violent video game play.

Clemments, et al., (2006) use of the VSC scale found that participants expressed the greatest concern for vulnerable victims and victims of violent crime. However, across all victim clusters, female respondents reported higher mean levels of concern than did men. Furthermore, there was also no relation between victimisation status (self or family member) and VCS scores. This therefore suggests that the experience of being a victim did not lead to an increase in victim concern.

The Victim Concern Scale (VCS) is a 21-item scale asking participants to rate their concern for different types of victims. The items in the scale can be seen to be related to four main factors, or four main types of victims.

Factor 1: General Concern (Items 3, 8, 9, 10, 15, 17, 19, 20)

Factor 2: Vulnerable or Violent Crime Victims (Items 1, 2, 7, 13, 18, 22)

Factor 3: Property Theft Victims (Items 5, 11, 14, 21)

Factor 4: 'Culpable' Victims (Items 4, 6, 12, 16)

The initial questionnaire was designed for use with young adults. The questionnaire was adapted in the present study for use with younger adolescents, following a pilot administration of the original questionnaire to a small sample of young people (n=10) and adults (n=8). Earlier versions of the questionnaires were piloted in a secondary school (not part of the sample for this study), and feedback on their construction was sought from the pupils, teachers and support staff who completed them. As a result of the feedback received from this pilot phase, the questionnaires were revised to form the versions described in this study.

Revision of the Victim Concern Scale for the present study: Four items were deleted from the scale due to lack of understanding for some of the younger children in the pilot study. Three items were from the General Concern Victim Items and the remaining one was deleted from the Vulnerable/Violent Crime Victims. The item 'Caucasian victim' was changed to adult victim. The word 'billfold' in item 21 was changed to wallet. The final revised scale contained 18 items.

Factor 1: General Concern (Items 3, 8, 9, 15, 17)

Factor 2: Vulnerable or Violent Crime Victims (Items 1, 2, 7, 12, 16)

Factor 3: Property Theft Victims (Items 5, 10, 13, 18)

Factor 4: 'Culpable' Victims (Items 4, 6, 11, 15)

The layout of the questionnaire was also changed to use a Likert scale to indicate level of concern felt for the victims, rather than putting a number in a box to indicate level of concern. The questionnaire also contained a definition of the term concern, stating *"This questionnaire is interested in your **concern** for different people. 'Concerned' means to be worried about, disturbed or troubled by something".* A demographic survey was administered asking participant's age and gender.According to Clemments et al., (2006), the Victim Concern Scale has a good internal consistency with Cronbachs alpha coefficient of .97. In the current study the Cronbachs alpha coefficient was .89.

Video Game Questionnaire: The video game questionnaire was based on one devised by Anderson and Dill (2000) to determine the participants video gaming habits and to assess violent video gaming exposure. The questionnaire comprised an initial page that asked students to indicate if they played any of the following games consoles, *Playstation, Xbox, Wii,* mobile phone games, and/or computer games. The questionnaire then asked participants to name their five favourite games. For each of these five games, students were then asked to indicate how often they played these games during the past week, on a Likert scale from '1' (indicating rarely) to '7' (indicating often). Students were then asked to rate how bloody

and gory the content of the game was on a similar Likert scale and then to classify the game as either sports fantasy, educational, skills, fighting, or other. On the initial page, participants were asked to tick a box if they never played video games and to place their questionnaires in the envelope provided.

Participant's scores for exposure to violent games were calculated by summing the participants' ratings of how violent each video game was with how bloody/gory the game was and multiplying this by the score of how often they had played the game in the last week. These five scores were then (mean) averaged to give an overall violent video game exposure score for each participant. A higher score on this scale indicates a higher exposure to violent video games. Anderson and Dill (2000) have reported a reliability alpha of .86 for this measure.

Long-term exposure to violent video games was calculated for each participant to ensure that participants had played these games for at least one month previous to the research, and thus could be seen as long-term video game players. Participants' scores were summed for each of the video games and then divided by five to give a mean average overall long-term exposure score for each participant.

Procedure

The researcher provided initial details of the study by letter and then met with principals and teachers in the four schools to provide additional information on the study. The students who were under 16 years of age were then given consent forms to ask their parents for permission to partake in the study. One week later, the researcher returned to the school and conducted the research within a classroom setting with the teacher present in the classroom. The students from the third level institution were enrolled on a variety of first year Business and Humanities courses, and were approached within lecture and class time to ask if they wished to participate in the research.

Participants were initially asked if they wished to participate by their class teacher and the researcher gave them a brief summary of the requirements (e.g., how long the questionnaire would take and how many questions they would be expected to answer). Each of the classes participating were in a mandatory class (i.e., not elective) at the time of research taking place to reduce the likelihood of self-selecting bias.

All participants were informed that participation was completely anonymous and on a voluntary basis. Each student was given unique identification number and told that they could contact the researcher with this identification number if they wished to withdraw from the study, following their participation. Each group were then given information sheets and consent forms to sign. The participants were informed that names and identifying information were not required and asked to complete the questionnaire as honestly as possible. They were informed that there were two questionnaires to be completed.

The students were given a large A4 envelope to place their completed form into. Each envelope contained a participant's number and all participants were asked to place this number on the top of their questionnaires. The Victim Concern Scale questionnaire was then administered to the students. A member of the researcher explained the procedure to each group of students and explained how to complete each questionnaire, including reading aloud the printed instructions for each of the questionnaires. Participants were asked if they had any questions regarding the questionnaires and these were addressed prior to starting the questionnaires. Participants were encouraged to ask for assistance with any difficulties they had while completing the questionnaires. Once participants had completed this questionnaire they were asked to place this in their envelope and given the video game questionnaire to complete. Participants were also informed that video games referred to any games played on computers, game consoles, and handheld devices.

Once all questionnaires were completed and participants had returned their envelope, a short question and answer session took place regarding video games and the resources and supports available to participants if they wanted to discuss any issues that had arisen from taking part in the research. This information was individual to each of the school settings, with specific contact people highlighted on each sheet specific to the school/college (e.g. school counsellor). The participants were reminded that they could contact the researcher to withdraw from the research in the future by quoting their unique participation number. All participants were given an information sheet containing information on the study and contacts for the researcher and thanked for their time.

Results

Exposure to Violent Video Games

It was hypothesised that there would be a correlation between exposure to violent video games and concern for victims (Hypothesis 1), and that gamers would exhibit less concern for the four types of victims (Hypothesis 2). All correlations relating to violent video game exposure were carried out using Pearson's product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasity. Results showed there was a significant negative correlation between increased exposure to violent video game play and: (i) overall concern for victims (as measured by the Victim Concern Scale) (r = -.167, p<0.05). indicating that high levels of violent game play were associated with lower levels of overall victim concern; (ii) concern for general victims (r = -.302, p<0.05), indicating young people who played more violent video games reported less concern for general victims iii) concern for vulnerable victims (Factor 2) (r =-.154, p<0.05), indicating young people who played violent video games reported less concern for vulnerable victims; and (iv) a reduced concern for culpable victims (r =-.238, p<0.05), young people who played violent video games reported less concern for culpable victims.

Gender Differences

It was hypothesised that there would be a significant gender differences in attitude towards victims' scores, with boys reporting less concern for victims (Hypothesis 3). An independent samples t-test was conducted to compare the attitudes of the male and female participants towards the victims of crime. There was a significant difference in the scores for males (M=60.51, SD=11.17) and females (M=63.97, SD=12.17) in relation to overall concern for victims (t(205) =2.07, p=.039). The scores were split and the male and female scores were compared. A Pearson's correlation was conducted to explore the relationship between exposure to violent video games and concern for different types of victims. When the male scores were considered only, there was a significant negative relationship between exposure to violent video games and concern for general victims (r = -.285, p<.001), and for culpable victims (r =.03, p<.05). There was a significant positive relationship between female participants exposure to violent

video games and their concern scores for vulnerable victims (r = .279, p<.05). There was also a negative relationship between girl's exposure and concern for general victims, although this was not significant (r=.062, p=.59).

As there was a significant relationship found between violent video game exposure and concern for victims, it was decided to explore this further while controlling for gender. A partial correlation was used to explore the relationship between concern for victims and violent video game exposure while controlling for gender of participants. The results showed there was a significant negative correlation between violent video game exposure and: (i) general victim concern, controlling for the effect of gender of participants in the study (r= .238, p<0.05); and (ii) culpable victim concern, controlling for the effect of gender of participants in the study (r = .151, p<0.05).

Age

It was hypothesised that as children get older they would report less concern for victims of crime (Hypothesis 4). One-way between groups ANOVAs were conducted to explore the impact of age on scores of concern for victims. Results showed there were significant differences between groups in relation to: (i) overall victim concern (F(8, 197) = 2.67, p=.008). The highest level of concern was reported by 20-year old students (mean = 67.23; SD=11.08) and the lowest level of concern was reported by 12-year olds (mean = 56.4; SD=21.6); (ii) general victims (F(8, 197) = 2.65, p=.009). The highest level of concern was reported by 20-year old students (mean =21.53; SD=4.08), while the lowest level of concern was reported by 16-year olds (mean = 17.61; SD=4.28); and (iii) vulnerable victims (F(8, 197) = 9.12, p=.000). The highest level of concern reported by 14-year old students (mean = 21.09; SD=3.36) whilst the lowest level of concern reported by 20-year olds (mean = 17.46; SD=3.03).

As there was a significant differences found between groups in relation to the effects of age, it was decided to explore this further. The relationship between attitudes towards victims (as measured by Victim Concern Scale) and violent video game exposure (as measured by Violent Video Game scale) was investigated using Pearson's partial correlation while controlling for the age of participants. Results showed there were significant negative correlations between violent video game exposure and: (i) overall

victim concern, controlling for the effect of age of participants in the study (r = -.138, p<0.05); (ii) general victim concern, controlling for the effect of age of participants in the study (r = .250, p<0.001); and (iii) culpable victim concern, controlling for the effect of age of participants in the study (r = .171, p<0.05).

Discussion

The present study examined the impact of violent video game playing on young people's attitudes towards victims of crime. The results suggest that young people who play more violent video games had less concern for general victims and for culpable victims, and these effects could not be explained by gender or age differences in the participant sample. The findings indicated age and gender differences and varying levels of concern reported for different types of victims. Young people who played violent video games also reported less concern for victims overall and for vulnerable victims and this effect was not due to age differences. However, there may be an effect of gender in the study as when gender was controlled for, the relationship between these attitudes and violet video game play was diminished. By further exploring the gender specific results, there was a significant relationship found between males and exposure to violent video games and their reported victim concern with those who played more violent video games indicating significantly less concern for culpable and general victims than other male participants who did not play such games.

With regards to age, the oldest participants in the study reported the most concern for overall victims, culpable victims, and general victims, while the younger participants reported the greatest concern for the vulnerable victims and the victims of property crimes. The literature on bullying shows that victim-liking decreases with age (Menesin et al., 1997; Rigby & Slee, 1991; 1993) and pre-pubescent students in particular like victim's less than younger pupils (Gini et al., 2007). The number of students who dislike victims for being weak has also been found to increase over time (Rigby & Slee, 1991). However, it should be noted that in the present study an increase in age may also be associated with an increase in

exposure to violent video games as children may be able to play (or allowed to play) these games for a longer amount of time.

The research on attitudes towards victims of crime is of particular interest when considering the possible impact of attitudes on behaviour. This study is the first to directly explore young people's exposure to violent video games and their concern for victims of crime, which it can be argued, they are exposed to in the scenes that they are playing in the video games. Previous research has indicated that attitudes are more likely to be strong when they are formed through personal experience or when we are committed to them and have strong arguments for such attitudes. Researchers have argued that these attitudes are also more likely to predict our behaviour (Holland, Verplanken & Knippenberg, 2002). This argument may be of particular relevance in the current study, if it can be argued that the gamers are developing strong attitudes through personal experience with "virtual" victims of crime, and this may lead to the development of stronger attitudes and to the development of attitudes that may be more likely to impact on their behaviours.

The general victims in the current study were described as adult victims, grandparents who were victims, female victims, and male victims. When taken together with the research on desensitisation effects of violent video games on gamers, it appears that although the gamers attitudes towards all types of victims of crimes were not significantly different to the nongamers, they do appear to have less concern for what could be considered the less serious crimes or those who they may believe may be less affected by crime. It is interesting to consider the role of cognitive processes in explaining the perception of young people towards victims of crime. It could be argued that following video game exposure young people are more likely to engage in defensive attributions or to attribute higher levels of blame to victims as a means of reducing any cognitive dissonance. Further research is needed to explore this further, and the additional studies in this thesis aim to address this gap by exploring cognitive distortions that video game players may induce in order to allow them to reduce any cognitive dissonance, related to acting in an aggressive manner whilst holding an attitude that aggression is not an appropriate act.

Previous research has explored the impact of this genre of video games on young people's attitudes towards criminals (Lee et al., 2010) and towards crime. Interestingly, the present study suggests that increased exposure to violent video games was associated with a less positive attitude towards culpable victims, and this it can be argued is in contrast to previous research. The research by Lee et al., (2010) suggests that violent gamers would be more sympathetic towards perpetrators and thus it could be argued towards culpable victims. But this was not the case in the present study. This, it can be argued can be seen to be related to the fact that the perpetrators in the current study were also victims, rather than perpetrators only.

The nature of the current study does not allow for determination of causation, however, it is interesting to consider the impact of playing violent video games on young people's attitudes towards culpable victims as it may offer an insight into attributions made about victims generally and the attribution of blame. In this sense, long-term exposure to violent video games may be believed to lead to people developing particular views of culpability and levels of blame, with higher levels of culpability(and therefore less concern) evident as young people played more violent video games. More research is needed to explore this further.

It could be argued that the playing of violent video games enhanced attitudes that already existed, with gender differences found in the current study seen to be related to an increase in the magnitude of attitudes amongst the male violent gamer sample. Clemments et al., (2006) found that women reported more concern than men for all victims described in the scale. It is interesting that recent research (Coyne, et al., 2011) has indicated a positive outcome of playing video games, along with a parent, for female players while this effect was not found with male players. In the present study when only the girls were considered, there was a significant relationship found between exposure to violent video games and attitudes towards vulnerable victim groups. This may be linked to levels of empathy, as the literature indicates gender differences in levels of empathy (see for example Baron-Cohen & Wheelwright, 2004; Davis, 1996).

Rigby and Johnson (2006) argued that students are likely to be motivated to help individuals that they feel a level of sympathy or compassion towards. In the current study the participants may not have felt real sympathy towards the victims as they were perceived as adult victims. Future research should explore the impact of video game play on attitudes towards peers. Recent research (Rotmund et al., 2010; Weber et al., 2011) suggests that individual experiences of violence in video game play may be experienced differently and may affect people differently, based on their personality characteristics. Further research should consider the individual interpretation of gamers as they are playing different scenes in video games, and the impact of this on their attitudes towards victims.

The present study is the first to explore attitudes towards victims of crime and to explore attitudes towards different types of victims, similar to types of victims that can be observed in video games. (Viera & Krcmar, 2011) argue that the structure of violent video games may result in the development of particular attitudes towards victims in children, as any negative effects of being harmed or killed in the games are minimised ignored, or even rewarded. In this sense, the impact of video games can be seen to result in the development of a less positive response to victims and to link in directly to the findings from the current study.

The main limitations of the present study can be related to the scales used. The Victim Concern Scale (VCS) used in the present study was modified for use with young people, and as such this could impact the results obtained. The revised VCS used in this study had acceptable reliability but further analysis of the factor structure was not undertaken, and so it can be argued that the results and any conclusions should be treated with some caution. Future research could explore the concept of attitudes towards victims in more detail and with specific scales designed for use with adolescents. In addition, the scale used related to "concern" that participants stated that they had for victims. It may be argued that the questionnaire relates to one element of attitudes only (victim concern) and so further research is needed in the area to explore attitudes of gamers in more detail. The video game survey used has been used in previous studies of video game exposure but the calculation of exposure to video game violence is based on self-report measures of violence and their classification of how bloody/gory the game is. It may be

argued that participants may intentionally reduce their rating of these games, or that desentisation to the material through long-term exposure may reduce their perception of these games as being blood and gory. Olsen et al., (2007) argue that the use of correlation studies in the area of video game research does not develop confidence in terms of causality of an effect, and as such the present study does not allow for a consideration of the other factors in a person's life that may impact on their attitudes towards and concern for specific victims.

The findings from the current study can be seen to add key elements to the research on the effects of violent video game play and desensitisation on gamers. The argument that violent video game play may represent a risk factor for individuals to develop less positive attitudes towards victims would be a concern for players of such games as well as to society as a whole, and as such a consideration of these findings in conjunction with similar findings of with desensitiation of players is an interesting area for the gaming industry and psychology as a whole. Future research is needed to explore different elements of attitudes, such as beliefs about victims and levels of victim blaming with young people who are playing violent games to explore the impact on a wider element of attitudes. The impact of these games on different groups such as female gamers would also be an interesting perspective to explore and the levels of identification and immersion that girls experience while playing these games. A consideration of mediators and moderators of the effect of violent video game play is an important way to consider both risk and protective factors that may explain individual and group defences in any effects observed. The following chapter outlines a study designed to extent the findings from the current findings and to further explore some of the possible mediators (developmental stages and cognitive distortions) and moderators (gender) that may further explain the relationship between violent video game play and less positive attitudes towards victims of crime.

Chapter 4: Gamer's attitudes towards crime: An interview study using vignettes (Study 2)

Introduction

The tripartite (three component) view of attitudes (Katz & Stotland, 1959; Rosenberg & Havland, 1960) maintains that an attitude is an unobservable psychological construct that manifests itself in beliefs, feelings and attitudes, whereas more recent research has suggested that an attitude may exist as a result of just one of these three components (Fazio & Zanna, 1981; Tykler & Rasinzki, 1984). However, the three components of attitude formation through cognition, affective processes and behavioural processes remain a key element of more recent theories..

The literature on attitudes to victims has focused mainly on attitudes to adult victims of rape (Whately & Rigio, 1993; Davies, Pollard & Archer, 2001; Wakelin & Long, 2003; Doherty & Anderson, 2004), domestic assault (Sugerman & Frankel, 1995), and victims of bullying (Baldry & Farrington, 2004; Rigby, 2006; Gini et al., 2008). Similar findings on attitudes in children and young people can be seen in the research on attitudes towards bullying, although there is some research that has explored empathy as a form of attitudes and feeling children report towards other types of peer victims (Funk et al., 2003, 2004; Porter & Starcevic, 2007). The research indicates that in general, children do express positive, prosocial and supportive thoughts towards victims of bullying (Menesini et al., 1997; Pervin & Turner, 1998; Smith & Levan, 1995), while indicating that children are generally upset by (and dislike) bullying and fighting (Mooney, Creeser, & Blatchford, 1991; Rigby & Slee 1991,1993; Whitney & Smith, 1993). Horgan, Muhlau, McCormack and Reider (2008) in their research on attitudes towards domestic violence in Ireland, have argued that norms regarding tolerance for abuse can manifest themselves in attitudes similar to these three compnents namely in attitudes related to victim empathy, victim blaming and willingness to help. The present research was designed to explore attitudes towards victims of crime and the possible impact of violent video game playing on the attitudes of young people and adults. Attitudes towards victims are explored thorough a consideration of the three elements of attitudes, the cognitive element that can be seen to be related to victim blaming, the affective element that is related to the variable victim liking, and the behavioural element that is seen to be related to victim helping.

Victim Liking and Victim Helping: There are various theories exploring the reasons for people deciding to offer help to victims and these are related to internal motivations, empathy and feelings of discomfort. External factors can also play a role, such as the impact of others as seen in the bystander effect where the presence of other people is likely to reduce the likelihood of people helping victims (Darley & Latane, 1968), as well as other characteristics related to victim liking (Shaw, Borough & Fink, 1994), attribution of cause and exposure to prosocial models (Bryan & Test, 1967).

Laner, Benin and Ventrone (2001) conducted research with 700 college students to examine intention to intervene on the behalf of three different types of victims. The researchers reported that there was a significant interaction between the gender of bystanders and the type of victim described in the vignettes. In other research, Clements, et al., (2006) explored adults concern towards victim of crime and level of advocacy in the development of the Victim Concern Scale (VCS). The adult participants in the research were presented with three victim vignettes that were designed to represent a wide range of crime and victim characteristics and circumstances. Concern for violence and for the more vulnerable victims described in the research was found to correlate with victim empathy. Rigby (2006) argued that children are likely to be motivated to help individuals for whom they feel some compassion or sympathy. It has been consistently reported that intervening to support victims and the development of positive feeling towards victims decreases with age (Gini et al., 2008; Henderson & Hymel, 2002; Menesini et al., 2003; O'Connell et al., 1999; Salmivalli, 1999), and their negative attitude towards bullying also appears to decrease with age, with children developing more tolerant attitude towards bullying and less positive attitude towards victims of bullying (Gini et al., 2008).

Victim Blame: In exploring attitudes towards victims, one of the key areas of research is the attribution of blame towards victims, and the level of blame attributed to the victim for the incident that occurred. Weiner's attribution theory (1986) argues that people are constantly attempting to determine why people behave as they do and thus attribute cause to behaviour. Heider's theory of attribution (1958) and Kelley's attribution theory (1972) argue that people often assume that behaviour that is purposeful is the

result of internal characteristics. Attribution is regarded as a three-step process through which people will often perceive others as causal agents of the action, and this can explain why they will often attribute an amount of blame to the victim. The displacement attribution theory argues that people will defend against a threat by distorting their perceptual judgments of the victim's causal role in their victimization (Thornton, 1984). In addition, the Fundamental Attribution Error (Ross, 1978) or Correspondence Bias (Jones, 1979) suggests that there is a tendency to attribute others actions to dispositional causes, and to ignore possible external causes for people's behaviour. This tendency, it is argued, may explain why certain categories of victims will elicit higher levels of victim blaming than others (Clements et al., 2006). The key element in these theories of attribution is that people are unaware of these unconscious attribution processes, and so it falls to the researcher to explore these attributions and subsequent attitudes of which they may not have explicit awareness of.

By attributing the cause of perpetrators' actions to internal characteristics of the victim, the observer can be seen to distance themselves from such occurrences happening to them, as they believe that the incident occurred because of the particular internal characteristics of the victim. This can have the added benefit of allowing the person to distance themselves from discomfort and the suffering of others. The Just World Theory (Lerner, 1970, 1980) is based on the belief that most people tend to believe that peoples' fates and fortunes are contingent on their actions and their character. In this sense, bad things are seen to happen to bad people. This allows people to consider themselves safe from negative occurrences as they will believe themselves to be a positive person. Research with children has indicated a relationship between these beliefs and bullying behaviour aimed towards others. Children with a high belief in just world (BJW) are less likely to act aggressively or to break rules or bully other children (Otto & Dalbert, 2005; Sutton & Winnard, 2007; Correia & Dalbert, 2008; Fox, Elder, Gater & Johnson, 2010). Fox et al., (2010) found that young people (11- to 16years of age) with a high BJW showed more sympathy and exhibited greater support for victims of bullying, which has been reported in previous research (Bierhoff et al., 1991). However, Correia and Dalbert (2008) failed to find a correlation between BJW and advocacy for victims of bullying in an Italian sample of 12- to 18-year olds, leading the authors to argue

that adolescents' views of a just world may motivate them to avoid any involvement in anti-social behaviour or difficulties.

Ireland (1999) has reported that prisoners who had engaged in bullying would often describe attitudes rejecting victims and attributing blame to the victim for the bullying that had occurred, with similar findings found in attitudes towards bullying in children (Eslea & Smith, 2000; Menesini, Codecasa, Benelli, & Cowie 2003). The research on young people and bullying also suggests that students tend to attribute higher levels of blame to the victims in the case of direct bullying (Gini, et al., 2008), rather than in situations of indirect bullying. This may be of importance when interpreting the results of the present study, as the vignettes are comprised of cases of direct crimes, with a clear offence committed against the victim.

Research on Video Game Playing and Attitudes

Attitudes towards Perpetrators and Crime: In relation to aggression, researchers have argued that an association exists between attitudes towards violence and an increased risk of aggression (Anderson & Bushman, 2002; Anderson, Benjamin, Wood & Bonacci, 2006). Ireland, Power, Bramhall and Flowers (2009) argue that the ability to understand attitudes towards violence (and presumably crime and criminals) can allow for a greater understanding of aggressive behaviour and its causes. Relevant research on the impact of violent video games suggests that playing violent video games can encourage fantasizing about aggression and cognitive rehearsal of aggressive acts that may serve to strengthen pro-violence attitudes (Guerra et al., 1994; Funk, 2005). In one survey of 8- to 20-year olds, long-term exposure to video game violence predicted stronger pro-violence attitudes on the Attitudes towards Violence Scale, Child Version (ATVC; Funk, et al., 2006). Anderson, Gentile and Buckley's (2007) study on 14- to 19-year old adolescents found greater violent video game play correlated with more positive attitudes towards violence in wars, intimate partner violence, and general normative aggressive beliefs. Krahe and Moller (2004) found that German children's violent video game exposure correlated significantly with an acceptance amongst the children of physical aggression.

There have also been studies reported where the researchers have found no such effects from violent media. Sigurdsson, et al., (2006) found no significant correlation between empathy and exposure to violent media, such as violent films and video games, while Bosche (2009) claim that their research found no evidence of short-term video game play on empathy. Lee, Pen and Klein (2010) have argued that due to the nature of violent video game activity (i.e., where players are required to perform violent behaviour continuously in order to gain rewards and finish the game), that playing of these games can lead to greater tolerance towards violent crimes and criminals. The researchers employed the use of four comparable real life crime scenes after playing a violent video game. The results indicated that the participants who had played violent video game and role-played a violent police officer were more likely to indicate less punitive attitude towards criminals and crime. As the participants in this study were novice or only occasional video game players, the researchers suggested that this effect of violent video game play on players is evident even after a short time of playing such games. Other relevant research with children suggests that when considering victims of bullying, children generally say they do not like peers who bully. However, there appears to be a small number of children who do hold positive attitudes towards these bullies and research suggests these children might be positively impressed by them because they are perceived as brave, strong and self-confident (Olewus, 1979; Baldry, 2004).

Violent Video Games and Attitudes towards Victims: Desensitisation refers to a decrease in negative emotional responses that has been argued can be due to the increased exposure to violent media, and in particular can be due to the playing of violent video games. Funk (2004) argues that desensitisation relates to *"changes in emotional responsitivity are seen in the blunting or absence of emotional reactions to violent events, which would commonly elicit a strong response"* (p.25). Desensitisation has been measured in video game research by conducting research on gamer's levels of empathy, attitudes towards violence, and by measuring cardiovascular responding to aversive stimuli (Engelhart, Bartholow, Kerr & Bushman, 2011; Carnegey, Anderson & Bushman, 2006; 2007).

Funk et al., (2003; 2004) conducted research with children between ages of seven and ten years and found that violent video game play was associated with lower empathy scores and more acceptance of violence. Sakamoto (1994) also identified a negative relationship between frequency of violent video game use and empathy with children, while Barnett et al., (1997) found that adolescents (15- to 19-years of age) who played violent video games had lower empathy scores. Staude, et al., (2008) have argued for a downward spiral hypothesis similar to that put forward by Slater, Henry, Swain and Anderson (2003) where increased exposure to violent content led to weaker reactions to aversive stimuli, and thus can be seen as desensitization of cardiovascular responding after playing violent video games. Bartholow, Bushman and Sestir (2006) and Carnegey, Bushman and Anderson (2005) have explored desensitisation in terms of physiological and behavioural effects in relation to violent video game play. More recently, Engelhgart et al., (2011) have claimed that their research was the first to link violence desensitisation with increased aggression and to argue for a specific neural connection than can explain the impact of violent video game playing on aggression.

Recent research exploring cognitive processes (perspective taking) and affective responses (sympathy) towards individuals has suggested that these factors can be affected by violent video game play through modelling of violent behaviour (Viera & Krcmar, 2011). Similar to the research related to desensitisation of violent video game players, the researchers argued that the playing of violent video games does not allow gamers to develop affective sympathy for the victim in the game, and *"pain to others is largely minimized or ignored"* (Viera & Krcmar, 2011; p.126). Greitemeyer, et al., (2011) have recently explored the concept of "dehumanness" as an effect of violent video game playing, with the research suggesting that those who played in the violent game condition associated less positive human-uniqueness and human-nature traits to others. Bastian, Jetten and Radke (2011) have demonstrated that engaging in violent video game play may diminish players' perceptions of their own human qualities. Taken together, this research suggests that violent video game playing may have a significant effect on players' views of others, and this may be related to their attitudes towards victims in particular.

Use of Vignettes

Rationale for using Vignettes: The use of vignettes in the current research study allows for a consideration of attitudes towards victim and perpetrator simultaneously, that has not been utilized in previous research studies. The vignettes used are directly related to video games scenes and in this respect they allow for particular conclusions to be drawn with regards to gamers' attitudes towards victims similar to the type of victims they are familiar with through gaming. The use of open-ended questions allows for further consideration of topics presented in the vignettes that would not be possible by only using scales.

Vignettes have been used in research with young people to explore bullying (Nesdale & Scarlett, 2004; Gini et al., 2006). Harrop and Tattersall (2010) used written responses to vignette-based questionnaires, while other researchers have presented vignettes to participants through headphones (Hirsch, Hayes & Mathews, 2009) or stories that were read out to participants (Batson et al., 1997). Vignettes have been used with adults to explore attitudes towards victims of rape (Sleuth & Bull, 2011; Jimenz & Abreu, 2003), to measure self-efficacy and risky driving behaviour (Morisset, Terrade & Somat, 2010), and to explore attitudes towards other health and social related aspects of care (Hazel, 1995; Hughes, 1998; Poulou, 2001; Rahman, 1996).

Vignettes have also been used to explore the effects of violent video games in children (Funk et al., 2003), with findings indicating lower levels of empathy in children who played violent video games The present research aims to address some of the limitations noted in previous research using vignettes, by using video game content specific vignettes. The vignettes used in this study were chosen to mirror scenes of similar victim scenes to those found in common video games. Previous research using story stems (similar to vignettes) have explored gamers' hypothetical responses to different general situations in life to explore the influence of gaming on aggression (Greitemyer & Oswold, 2009; Guimetti & Markey, 2007; Bushman & Anderson, 2002).

In the current research it was hypothesized that the violent gamers would differ significantly from the non-violent gamers in their attitudes towards perpetrators of crime and to the victims of crime, with violent video gamers having more negative attitudes towards victims. The research also aimed to explore gamer's attitudes towards victims in terms of their attitudes towards victim blaming, attitudes towards victim helping, and general victim liking**.** The exploration of attitudes towards victims in this way allowed for a consideration of factors that may explain any difference between violent gamers and nonviolent gamers in terms of attitudes towards victims, by exploring cognitive distortions and developmental stages as a possible mediator of any relationship observed. The vignettes in the present study allow for a consideration of attitudes towards different types of victims. This can be interesting to consider in relation to the previous study discussed and other related research which has indicated a significant difference between victims concern reported by gamers and nongamers in relation to less serious crimes and those that the victim may attribute blame to for the crime.

Method

Participants

A total of 54 participants from youth service, recreational clubs (summer projects, dance clubs, and sports clubs), and from an educational institution were recruited for the research. The students from the educational institution were enrolled on a variety of first year Business and Humanities courses. All participants were resident in Ireland at the time of participation. The age range for the participation was 12 to 35 years of age with a mean age of 19.18 years (SD=0.49). The participants were categorised as violent gamers if they played violent video games for more than three hours per week. Consequently, there were 27 violent gamers and 23 non-violent gamers who participated. There were 19 female gamers (4 violent and 15 non-violent), and 31 male gamers (23 violent and 8 were non-violent). Four participants started the interview but decided midway through the process that they did not wish to continue, their data was not included in the final analysis. The final number of people included in the research was therefore 50 participants.

Measures

As previously discussed, there is a limited amount research in the area of attitudes towards victims, and this is particularly the case with published scales used to explore children's attitudes towards victims. Within the research on video game effects, there is a small amount of research on attitudes towards criminals (e.g., Lee et al., 2010) and on attitudes towards crime and on levels of empathy (e.g., Bartholow, Sestir and Davis, 2005; Anderson et al., 2004; Bosche, 2009; Funk et al., 2004; 2003; Krahe & Moller, 2004). As a consequence, this study aimed to explore attitudes with young people and adults using a semi-structured interview format, with a combination of structured questions answered on a Likert-style scale, and open-ended questions to allow participants to reflect on the victim and provide an overall impression of the victim in their own words.

Vignette Design There were three sets of vignettes describing different types of victims. Vignettes were constructed around a set of scenarios using common types of victim crime. This was broken down into three types of victims, as outlined in Table 1. The vignettes used were adapted from newspaper articles of crimes committed in U.K. and U.S. during May 2010 and May 2011. In order to ensure that the material would not hold any specific relevance to any of the participants, newspaper articles were chosen from outside of Ireland, where the study took place, and the identifying information (names of victims and places) were changed in each of the vignettes. Ten adolescent and adult gamers rated the vignettes according to their similarities to scenes in violent video games they have played. The participants rated these on a Likert scale with a score of '5' indicating 'very similar' and a score of '1' indicating 'not at all similar'. Table 2 shows the ratings given to the 12 different vignettes used in the research.

People's willingness to contribute (WTC) more resources to save the lives of identified victims than to save anonymous or statistical victims is known as the identifiable victim effect (IVE). In considering this, the vignettes used in the present research described each of the victims by name in each of the vignettes. Each of the vignettes also had a picture related to an aspect of the crime, which portrayed one key aspect of the crime committed, such as a picture of a car, a hospital department or a set of keys, depending on

the vignette. The pictures were used to indicate that the vignette was similar to how a newspaper article might portray a crime.

Attitude Towards Perpetrator In recent research, Lee, et al., (2010) used a Likert scale to explore participants' evaluations of a perpetrator after playing violent video games. The adult participants were asked how well three different adjectives described their feelings towards a perpetrator in two criminal cases. The adjectives provided to the participants to describe the perpetrator were 'harmful', 'horrible' and 'intolerable'. The present study employed the 'person perception method' (PPM) for assessing participants' initial attitude towards the perpetrator of the crime in the vignette. Rayburn, Mendoza and Davidson (2003) used the PPM of measuring participant's attitudes towards a perpetrator following presentation of a crime vignette to adults. They argued that by having participants provide immediate perceptions of the perpetrator by rating the person on bipolar adjective scales, it could *"reduce participant social desirability and therefore enhance uncensored responses to a sensitive and highly charged topic"* (2003: p.1066). This method has also been used by others (e.g., Asch, 1946; Collins & Brief, 1995; Jones, 1979; McKinney, 1987). Participants in this study were asked to rate the perpetrators of the crime on a five-point Likert Scale, using six adjectives, in order to explore attitudes towards the perpertrators of crimes described in the vignettes. The adjectives used are described in Table 3. Each participant's scores were summed to give an overall attitude towards perpetrator score with a higher score indicating more negative attitude towards perpetrators. The participants were also asked if they believed the behaviour was characteristic of the perpetrator on a five-point scale with '1' indicating 'no' and '5' indicating 'yes'.

Victim Helping*:* Laner and Benin (2001) conducted key research on helping behaviour, exploring different victims of crime to assess which types of victims of different crimes that people were more likely to help. As the present study was interested in exploring young people's attitudes towards victims of crime, it was not possible to explore young people's willingness to help as their ability to help in these situations would be limited in real life situations. Therefore, the questions used to explore the variable of 'victim helping' related to participant's views of others helping the victim. Clements et al., (2006) used

three victim vignettes to represent a wide range of crime and victim characteristics and circumstances in their research with adults. The research aimed to investigate the level of advocacy for each type of victim by asking participants to rate statements on each vignette such as *"I would like to help the victim"* and *"The victim should have medical expenses paid for by the state",* on a Likert Scale. The present study used two questions, similar to those used by Clements et al., (2006) to explore victim helping with participant's attitude towards helping victims. The participant's scores on these questions were given on a Likert scale and the scores combined to give an overall victim helping score for the participant, with a lower score indicating that participants believed the victim was deserving of and would receive help from others.

Victim Blaming*:* Research on victim blaming with children has mostly focused on children who are the victims of bullying. Gini, et al., (2008) used bullying vignettes with participants asked to answer the following questions, *"Do you think X was to blame for what happened?", "Should X Blame themselves for what happened?",* and *"Do you think X should be blamed for what happened?"*. In the present study, six different questions and statements were used to assess the level of blame participants attributed to the victim for the incident that occurred. Table 4 outlines the statements and questions used. These responses were given on a Likert scale with an overall victim blame score calculated for each participant in each of the victims described in the vignette, with a lower score indicating that participant had attributed higher portion of blame to the victim in the vignette. The participants were also asked to describe why this incident had happened to the victim. The data from these questions were analysed using thematic analysis.

Victim Liking: Victim Liking was the third variable investigated in this research and relates to participants' affective attitude towards victim of crime. Gini, et al., (2006) measured victim liking for victims of bullying with young people, by asking participants to rate if they would like to spend time with the victim, do their homework with the victim, and would like to be the victim. The present study measured victim liking by asking participants about their feelings towards the victims, using four statements. These responses were given on a Likert scale with a lower score indicating higher levels of

victim liking for the victim in the vignette. The participants were also asked to describe the victim in three words. These data were also analysed using thematic analysis.

Video Game Questionnaire: Participants were asked their age and to name three of their interests and hobbies. If the participants mentioned gaming as one of their hobbies they were asked to name three games that they played most frequently and asked on average how often they played these games. If participants did not mention gaming as a hobby the interviewer asked them if they played video games. The participants who played video games were categorised as violent gamers if they played violent games during the previous week, for three or more hours. This categorization method has been used in previous research to group participates as gamers or non-gamers (Wack & Tantleff-Duff, 2008).

Procedure

Participants were thanked for attending for the interview and the requirements for the interview were explained to the participants and they were asked if they wished to participate. The participants were then asked if they ever read newspapers and young people were reminded that they would have read newspaper articles in school (as it is part of the curriculum to study newspaper type articles at junior second level in Ireland). There were three groups of victim vignettes in this study; (i) the general victim group, (ii) the culpable victim group, and (iii) the soldier/police victim group. There were four different vignettes in each of the three groups of vignettes. All participants were given two vignettes (i.e., a general vignettes and a culpable or soldier/police vignette). The first vignette given to all participants outlined a general victim who had an offence committed against them or their property. The participants were given a second vignette that was about a culpable victim or a police/soldier victim.

Participants were given a vignette to read alone initially and then it was read aloud to the participant and ensured that they had fully understood it. The participants were then informed that the questions they would be asked to consider related to the two people mentioned in the vignette, the victim (referred to by name) and the person who had shot, hurt, stolen something from the participant (based on the particular vignette they had read). This was obviously different for each vignette and the researcher only referred to

the victim by name and the perpetrator as the person who had committed the particular offence, thus avoiding the use of the word victim and perpetrator. The researcher then read each of the questions aloud to the participant and asked them which point on the Likert scale they felt represented their answer. Further probes were given on various questions by asking the participant why they felt this was true, why they had given this response. There were 17 questions with Likert scale responses.

The participants were asked to complete the vignette as they would expect to read it in a newspaper. Probes were given to the participants such as including items such as the witnesses to the incident, people who help, if arrests were made, and what had happened to the victim. To ensure participants wrote as much as they felt comfortable doing, the researcher offered to write for the participants and assured them that there were no right or wrong answers, and that there were no marks awarded for writing or spelling, etc. Once participants had finished this, they were asked to complete demographic questionnaire asking them about gender, age and activities they enjoyed doing. Participants were then given the second vignette to read and completed the questions as with the first vignette. The second set of vignettes was randomly chosen by the participant by asking them to choose from eight numbers, each of which represented a particular vignette. The procedure for the second vignette was identical to that in the first vignette, with participants answering the same 17 Likert scale questions and three open-ended questions. Participants were then given the video game questionnaire. This was given last to provide as little suspicion to the participants regarding the study and to ensure the researcher was unaware of the gaming habits of the participants during the interview. Participants were then debriefed and given an information sheet, and thanked for their participation.

Results

Attitude Towards Perpetrator

An independent samples t-test was conducted to compare the violent gamers and non-gamers scores on attitudes towards the perpetrator of the crimes. There was no significant difference (t (48)=1.2, *p*=..24), in the scores for violent gamers (M=29.19, SD=3.81) and non-gamers (M=30.52, SD=4.08). Therefore, the

non-violent gamers were not significantly different to the violent gamers in terms of their attitudes towards perpetrators of the crimes.

Victim Liking

This variable was assessed using a scale and one open-ended statement (i.e., *Describe the Victim in three words*).

Soldier/Police Vignettes: Three main qualities emerged from the participants' descriptions of the soldier/police victim vignettes and these can be described as brave, loyal, and compassionate (e.g., kind, caring, helpful, and good to family and children). Both violent gamers and non-violent gamers described these victims mainly in terms of positive attributes (kind, caring) and positive behaviours (good to family and children, and being helpful). For example, Participant 3 (non-violent gamer) described the victim as *"good policeman, kind, loving to children".*

All of the non-violent gamers described the victim in a positive manner. The only negative descriptions of the soldiers and police victims were given by violent gamers in the sample (n=6). One of the violent gamers described the victim as *"bossy and mean"* (Participant 1), while Participant 36 suggested that the victim may *"have upset someone".* A small number of the violent gamers' sample (n=4) described the victims as lower in intelligence and lacking ability in relation to their role as a soldier/police officer. In relation to the soldiers' level of intelligence, Participant 17 stated that the victim in the vignette *"follow(ed) commands, without question, therefore is not clever, should ask questions [and] not just do what he is told".* Additionally, Participant 7 stated that the victim was a *"bit stupid as should have been looking around for this bomb/landmine",* and Participant 37 stated that a police man *"should be able to do more with training they have".* In contrast, none of the non-violent gamers made reference to the victim's level of intelligence or decision-making skills in relation to their role.

Culpable Victims: The main descriptions of the culpable victims were not positive, with participants mainly describing the victims in terms of negative personality traits (e.g., greedy, dishonest, clumsy, devious, sly) and negative behaviours (e.g., not very nice to people, pleaser, reckless, harmful). There

were four positive descriptions of the victims (i.e., clever, kind, harmless, nice) and two neutral comments (i.e., rich, lucky), and all of these comments were made by violent gamers. More non-violent gamers (n=6), than the violent gamer sample (n=4), described the victim as *"foolish", "stupid"* or *"naive*, with Participant 10 (non-violent gamer) stating that the victim was *"stupid because he shouldn't have robbed the car"* and Participant 7 (non-violent gamer) stating the victim was *"a fool for owing so much money".*

The non-violent gamer sample more frequently described all three types of victims as *"unlucky"* (n=10) although both groups equally described the culpable victim as *"unlucky"* (n=8). The violent gamer sample mainly described the culpable victims in more negative terms (e.g., dangerous, crazy, mad, violent and cruel; n=9) than the non-violent sample (n=3). The non-violent gamer sample were more likely to describe the victims as *"poor", "unhappy", "clumsy"* and *"not very nice"* or *"innocent",* with Participant 33 (non-violent gamer) stating that the victim was *"Innocent, misguided, [and] naive to be involved in drugs".* The non-violent gamer sample therefore gave more mixed and less negative descriptions of the culpable victims, while the violent gamers were more likely to give negative descriptions of the victims.

General Victims: The descriptions of the general victims were mainly in terms of positive attributes by the non-violent gamer sample (n=13), in comparison to the violent gamers (n=6). Violent gamers (n=13) were also more likely than non-violent gamers (n=4) to refer to internal characteristics of the victims stating that the victims were foolish, silly and careless. Therefore violent gamers described victims in terms of negative personality characteristics to a greater extent, than the non-violent gamers. Non-violent gamers described these victims as unlucky and of being *"in the wrong place at the wrong time"* (Participant 28, non-violent gamer) (n=11) more than the violent gamers (n=7). Eight violent gamers also stated that the victim was cowardlyor was scared, while only two non-violent gamers mentioned this in their description. While none of the violent gamers described the victim as courageous, three of the non-violent sample described the victim as brave.

i) Victim Liking Scales

An independent samples t-test was conducted to compare victim liking scores for violent gamers and non-violent gamers. There was a significant difference (t (48) = 1.98, *p*=.053) in scores for violent gamers (M=11.37, SD=4.72) and non-violent gamers M=8.91, SD= 3.91). Therefore, non-violent video game players reported higher levels of victim liking, than the violent video game players

Victim Blaming

This variable was assessed using a scale of victim blaming and one open-ended statement (i.e., *Describe why this happened to the victim*).

Soldier/Police: All the participants from the non-violent gamer sample (n=11) and the majority of the violent gamer sample (n=9) stated that the reason for the victim in these vignettes being hurt was related to their profession. For example, Participant 26 stated *"because he was policeman, goes with the job",* while Participant 27 said *"he is a soldier at war, had a weapon and is part of the job of being a soldier, it is always a risk".* Two of the violent gamers stated that the victim was in the wrong place at the wrong time, Participant 16 stated that the victim was *"not a nice guy,* [but] *in wrong place, wrong time".*

Culpable Victims: All of the participants in both the violent gamer sample and non-violent gamer sample referred directly to the previous negative behaviour of the victim when asked to provide reasons for the culpable victim being treated in this way. The participants referred to the victim owing money (n=7), breaking the law and having a criminal record (n=5), and of working with drugs and other criminals (n=3). The violent gamers consistently pointed to the fact that the victim had committed a crime, upset someone, or got involved with criminals as an explanation for why the victim had been treated in this way. Participant 29 (violent gamer) *stated "owing the men money, they had decided to punish him".* Participant 18 (violent gamers) stated that the victim was *"involved with other criminals, what does he expect?"*

Non-violent gamers (n=8) more than violent gamers (n=2) attributed the cause of the incident to the motivation of the perpetrator, with participants noting that the *"[offender] does not like authority, saw them as the enemy, [and] wants to avoid jail at any cost"* (Participant 48, nonviolent gamer) while another stated that *"the assailants were part of a gang and one of the gang got caught and this was a revenge act"* (Participant 3, nonviolent gamer). One of the nonviolent gamers referred to an internal personality characteristic of the victim, stating that he may have been *"rude"* (Participant 5), while another nonviolent gamer stated that the *"person who shot them was obviously just a very violent person"* (Participant 33).

General Victims: More violent gamers (n=11) than nonviolent gamers (n=3) attributed the reason for the victim being hurt in the general vignettes to individual victims behaviours. The violent gamers attributed the cause of the incident to victims being drunk (n=4), upsetting someone or owing money (n=3), and breaking the law and dropping their keys (n=4). Participant 35 (violent gamer) stated the victim had *"dropped his keys, bit stupid, what does he expect".* Participant 18 stated the victim *"was too drunk to react"* and Participant 26 (violent gamer) stated the victim was *"jaywalking, so kind of her own fault, what do you expect if you behave like this and break the law?".*

A greater number of nonviolent gamers attributed the victims incident to them being unlucky (n=6), and to the actions of the perpetrator (n=8). Participant 5 stated that the victim was *"unlucky (or) people were jealous of his car",* while Participant 33 stated *"I don't think it was Stephen's fault, he was just getting into his car, it was the thief's fault".* Overall, violent gamers (n=27) were more likely to attribute the cause of the incident to the victim's behaviour than the nonviolent gamers (n=16). The behaviours were directly related to something that the victim had done recently, in the three groups of vignettes. The reasons given by the violent gamers included arguments that the victim had *"done something on someone"* (Participant 2) or was *"out of control"* (Participant 21), or was *"involved with criminals"* (Participant 18).

ii) Victim Blaming Scale:

An independent samples t-test was conducted to compare victim blaming scores for violent gamers and nonviolent gamers. There was a significant difference (t (48) = 2.2, p=.028) in scores for violent gamers (M=20.15, SD=7.6) and nonviolent gamers (M=25, SD=7.51). More specifically, violent video game players indicated higher levels of victim blaming than nonviolent video game players.

Victim Helping

An independent samples t-test was conducted to compare victim helping scores for violent gamers and nonviolent gamers. There was not a significant difference (t (48) = .087, p=.931) in scores for violent gamers (M=6.29, SD=3.56) and nonviolent gamers (M=6.22, SD = 2.73) in terms of their scores on victim helping scale.

Discussion

Using vignettes as part of a semi-structured interview study, the present research suggests that both adolescent and adult participants who rated themselves as long-term playing of violent video games were more likely to report negative attitudes towards victims of crime, than those who did not play such games. More specifically, the violent game players reported less positive attitudes towards the victims in the vignettes, and attributed more blame to the victims, than the nonviolent video game players. Previous research has explored empathy towards victims (Funk et al.,2003; 2004; Bartholow, Sestir & Davis, 2005) but no previous research has directly explored attitudes towards victims of crime and it is therefore interesting to comsider any observed difference between those exposed frequently to virtual crime and victims, and to explore any reasons why this may lead to a change in attitudes towards these victims of crime.

In relation to liking of victim described in the vignettes, the analyses of the scale indicated while there was no significant difference in the scores given by the violent gamers and the nonviolent gamers, the violent gamer sample were more likely to describe the police/soldier victims and the general victims in more negative terms than the nonviolent gamers. While the entire nonviolent gamer sample described the

culpable victims in a negative way, a number of the participants in the violent gamer sample described these victims in a positive or neutral way.

In relation to victim blaming, the analyses of the scale indicated that the violent gamer sample did differ significantly from the nonviolent group, in terms of their views of blaming the victim for the crime that had occurred. In exploring the descriptions given by the participants, it was found that the violent gamer sample was more likely to attribute the cause of the crime to the victim's behaviour than the nonviolent gamer sample. This finding was particularly relevant when people were asked to consider the general victim vignettes, and non-violent gamers more likely to attribute the cause of the crime to the victim being unlucky or to the fault of the perpetrator. Attribution research has found that people are actively making attributions about the role people have played in any misfortune that happens to them. In research with Australian children, Rigby (1996; 1997) reported that between 10% and 20% of all students interviewed reported that they felt negatively towards victims, with the students reluctant to mix with the victims and referring to them in negative terms as a way of explaining why the person had become a victim.

The role of the defensive attribution (Shaver, 1970) may be considered salient in the attribution of blame in the culpable and police vignettes in the present study. This theory argues that people can be motivated to create biases and distort causality and responsibility in order to minimize their own responsibility for negative incidents. The victim's past behaviour in these particular vignettes could be seen to play a role in the cause of the crime that was committed against them. Support for this argument can be seen in the fact that in the case of both of these victims, participants often made reference to their past (in culpable vignettes) and the profession of the police victims. In contrast to this, in the general victim vignettes there was no indication that participants believed that the victim was related to the act that occurred to them.

The use of vignettes in the present study describing cases of actual offences that caused harm to identified victims offers a new area of research to the impact of video games. Previous research has suggested that young people will tend to blame victims in the case of direct bullying, rather than in situations of indirect

bullying (Gini, et al., 2008). Therefore, in the present study it might be expected that both samples of participants would attribute more blame to the victims in the general victim vignette. However, the violent gamers were more likely than the nonviolent gamers to attribute blame to these victims**.**

Exposure to violent video games has been found to be associated with more aggressive responses to ambiguous story stems (Gumetti & Markey, 2007) and it could be argued that in the current study, the descriptions of the victims given by the participants, were more aggressive in their tone, particularly in the case of the culpable victim vignettes. The violent gamers used more aggressive terms to describe the victims than the nonviolent sample, who described the victims as "*innocent", "naive"* and *"misguided".* Additionally, the violent gamers were more likely to attribute the cause of the incident to the victim's behaviour than the nonviolent gamers, while the nonviolent group were more likely to attribute the cause of the incident to the actions of the perpetrator. This may concur with recent research that found a higher level of positive attitudes towards criminals in those that played violent video games, than in other young adults (Lee, Pen & Klein, 2010).

Social learning theory points to the potential impact of media characters as role models triggering the processes of observational learning and imitation that can promote the acquisition and performance of aggressive behaviour (Bandura, 1973; Eron et al., 1972), and it can be argued this can be particularly when media characters are rewarded for their aggressive behaviour (Funk et al., 2004). Much of the previous research exploring the impact of violent video games on gamers has pointed to the importance of these role models in levels of aggression and attitudes reported by players of such games. In the current study, the gamers were less sympathetic towards the police and soldier victims than the nongamers, and suggested that these people were more likely to be ineffective in their job, with some participants arguing that the victims should not be in the situations that they were (being hurt) as they should know better with their training. This may be related to the fact that the violent gamers felt that they had some knowledge of the skills needed to be an effective soldier/policeman as they were playing these characters in the games that they were playing. It could be argued that self-efficacy levels could also play a role in this process, with gamers believing that they have a comprehensive understanding of

the role of policemen/soldier and feeling that they could complete these tasks that these characters do, and then their levels of imitation of the characters behaviour could be higher.

It could be argued that children and young people between the ages of 12 years and 20 years of age are at a key developmental stage, with identity formation linked directly to the development of attitudes. Funk, Chan, Brouwer and Curtis (2006) have argued that the impact of violent models in video games may have a more significant impact on children when they are younger as they are developing moral scaffolding. Funk (2003) has suggested that the social information processing theory may explain why children with greater exposure to video game violence may not attend to cues that trigger empathic responding, or may misinterpret such cues, suggesting desensitization. Virea and Krcmar's (2011) research with children suggest that violent video game play is negatively related to perspective taking and ability to sympathise with people. Although the research did not explore the impact of violent video game play on victims of crime directly, the research suggests that these games may impact on the affective and cognitive elements of attitudes towards others. Therefore, the present study can be seen as an extension of this study with violent video game play associated with less positive affective and cognitive attitudes towards victims in young people and adults.

The findings from the current study may have a wider societal impact and it can be argued could even be considered in relation to key decision-making processes within the judicial system. The use of peers in a jury remains a central component in the court system and it may be argued that the results from the present research study suggest a need to consider people's attitudes towards victims of crime based on increased exposure to violent video games in today's society. The research suggests that long-term playing of violent video games may be associated with a risk of developing a more negative attitude towards victims, and to engage in higher levels of victim blaming than in the general population. In terms of wider consideration, it could therefore be argued then this group may represent a particular group in society that may be at risk of developing biased views of victims of crime, than people who are not playing violent games. It may be that levels of violent video game play may therefore be a factor to consider when people are chosen to be members of as jury, although it is also noteworthy that the

researcher in the present study encountered similar difficulties to previous researchers in recruiting male nongamers. It appears that a large amount of young men have played and continue to play video games, and this may also be an ongoing consideration in relation to changes in attiudes.

Limitations and Future Research: The scales used in the present study, were those based on research on bullying and attitudes towards victims generally and may therefore not be suitable for the exploration of other attitudes with young people, that may have affected the quality of the results. This study introduced key strategies to try to control for some of these confounding variables, such as the use of interviewer reading the scales and vignettes to all young people, and the use of additional questions with the adult participants.

Gumetti and Markey (2007) argue that story stems can only assess how a person considers someone else will react to the current situation described, rather than assessing how a person will actually react and a similar argument can be made about the current research. Therfore, the use of vignettes in the current study can only be seen to assess people's attitudes towards the victim described in this vignette and not towards all victims. Previous research has also highlighted (e.g., Gentile et al., 2004; Ferguson, 2007; Porter & Starcevic, 2007), it was not possible to control for peoples' exposure to other violent and aggressive media and role models. This is a common argument when using cross-sectional studies in this area of research

There was a difficulty getting participants to take part in the study, and a number of adolescent students were excluded from the final analysis as they decided to withdraw during the study. Several of the older people who played violent video games who were approached to take part were also reluctant and they appeared defensive about the study of violent video games and the violent content of the games. A similar finding of defensiveness when asked to discuss violent content in games has been found in other research with children (Funk et al., 2006). This could mean that some types of violent game players were not representative in the current study and thus affect the generalizability of the results found.

The present study was interested in exploring the concept of helping behaviour in relation to attitudes towards victims of crime. Open-ended questions were used with the participants asked to indicate if they believed the person would be helped by others and an open-ended question asking participants to complete the newspaper vignette, indicating the level of witnesses and help that the victims in the vignettes would have received. This was difficult for some of the young people to understand, and the varying levels of answers and willingness to answer this question meant that the overall results on this section of the study were extremely mixed. Therefore, it was felt by the researcher that there was no benefit to include this aspect of the data in the overall analysis. It would be interesting for future research to explore the concept of helping behaviour in relation to victims of crime, in an age appropriate way. The difficulty with the concept of helping within the present research related to the lack of feasibility of the young person being able to help the victim in the vignettes and as such the exploring of participants' willingness to directly help the victim was not possible.

Kutner and Olsen (2008) argue that the difficulty of completing research with children can be related to the confidence researchers can have in children's abilities to answer honestly or accurately, as often they may get bored and make things up or misremember information. The present study employed an interview methodology in an attempt to address some of the comprehension difficulties children may have with the vignettes and questions used, although the authors' acknowledge there may still be difficulties with this methodology when completing studies with younger children. It could be argued that the use of questions related to the perpetrator of the crime and in relation to the victim could have caused comprehension difficulty for the participants. However, specific strategies were used by the researchers in an attempt to overcome these possible difficulties, with the names of the victim made clear when discussing them and the interviewer making clear to the participant who the questions was making reference to at all times.

Future research in this area may consider exploring the area of attitudes with younger children and consider different elements of participants' attitudes towards victims, in both children and adult settings. It would be of use to have an instrument to allow the exploration of general attitudes and to explore the

relationship between males and female gamers in relation to empathy and other general and specific elements of attitudes. The present research findings could be extended through further design of specific scales to assess participant's attitudes towards victims, particularly victims of crime. By extending the research in this area of attitude formation and violent video game play, researchers should consider female gamers and the possible impact of playing these violent games on this gamer sub-group. In the current study there was a gender imbalance. As with similar studies, it is difficult to address this as most males aged 12 to 20 years play violent video games. It could be argued that the present findings indicating a significant difference between the violent gamer and nonviolent gamer participant scores could be explained by the lack of females amongst violent gamers. Future research exploring any gender differences in video game play and attitudes towards victims could allow for a consideration of this.

Overall the results of this study suggest a difference between violent gamers and nonviolent gamers in relation to their reported attitudes towards victims of crime. Any such association between violent video game play and less positive attitudes can be related to both the cognitive and affective components of people's attitudes towards victims of crime, with violent gamers found to report lower levels of victim liking (affective) and higher levels of victim blaming (cognitive), than the nonviolent gamers. Further research is needed to explore this concept and to consider the mechanisms through which these attitudes may develop. The role of any cognitive distortions in such a relationship can be seen as a risk factor for the development of such attitudes and the research conducted in the further studies in this thesis allows for a further exploration of such cognitive distortions as a possible mediator of the risk of the development of such attitudes. As the current study explored the relationship between attitudes towards victims in male and a small number of female gamers, the following study aims to explore female violent video game player's experience of playing this genre of games. While gender may be considered a moderator of any effect of violent video game play on attitudes, the identification of gamers with game characters may also be considered a moderator of any such effect and as such research is needed to explore these possible risk factors in more detail. As the initial two studies in this thesis have indicated a difference in expressed attitudes towards victims of crime, the following two studies were designed to explore further any moderators or mediators of this effect. Chapter 5 describes a study with female

gamers, specifically exploring moderators that may explain individual differences in any relationship between violent game play and attitudes observed. Chapter 6 was designed to explore futher the role of cognitive distortions as a possible mediator of the relationship between violent video game play and less positive attitudes towards victims.

Table 1: Three types of victims described in vignettes in Study 2

Vignette Type	Victim Described
General Victims Vignettes	- business man who had his car stolen - a woman held hostage

	- a woman hit by a car - a witness to an assault
Culpable Victims Vignettes	- drug addicts - people with previous criminal history - were known to police - owed crime bosses money.
Specific Victims Vignettes	- victims who where police officers - army personnel injured in the line of duty

Table 2: Ratings for the Vignettes used in Study 2

Vignette	Category	Mean Average Rating
1. Man shot in drug row	Culpable	3

2. Hit and Run	General	3
3. Drug	Culpable	3.8
4. Soldier	Soldier	3.4
5. Restaurant Worker	General	2.9
6. Police	Soldier	3.1
7. Police	Soldier	3.5
8. Witness	General	2.9
9. Car stolen	General	3.8
10. Criminal	Culpable	3.4
11. Soldier	Soldier	3.6
12. Criminal (shooting)	Culpable	3.2

Table 3: Attitude towards Perpetrator Bipolar Adjective Scale in Study 2

Non-violent	Violent
Gentle	Forceful

Kind	Cruel
Blameless	Blameworthy
Dependable	Undependable
Harmless	Harmful

Table 4: Questions used in Study 2

Variable	*Corresponding Questions & Statements*
Victim Blame Scale	What percentage of blame would you attribute to X for what happened to him?

	Should X blame them for what happened?
	I believe X was responsible for what happened to him
	I believe the incident was X's fault
	I believe somebody else should be punished for what happened to X *
	Do you feel X was innocent? *
Victim Blame	Describe why this happened to X (victim)
Victim Liking Scale	I believe that X (victim's) family and friends would be upset by what has happened to them
	I believed X (the victim) was liked by many people
	I believed X (the victim) was unlucky
	I feel that what has happened to X (the victim) was sad
Victim Liking	Describe X (the victim) in three words
Victim Helping	I believe X deserves help from others
	I believe people would stop and help X if they observed this incident.

** These scale items were reverse scored*

Chapter 5: Female Gamers: A Thematic Analysis of their Gaming Experience (Study 3)

Introduction

International research has consistently found that compared to females, males play video-games more frequently, are attracted to different games, and play for longer (Rideout, Roberts & Foehr, 2005; Anderson, Gentile & Buckley, 2007; Olsen, Kutner, Baer, Beresin, Warner & Nicholi, 2009; Coyne, Padilla-Walker, Stockdale & Daly, 2011). Further research is therefore needed to explore these gender differences in relation to motivation to play, and experience of playing. The current research is designed to explore the motivation and experience of female gamers who choose to play a specific genre of games (violent video game play) in order to explore gender factors in relation to violent video game play. The current study is therefore designed to build on the previous studies in this thesis, by exploring the experience of violent video game play. In the current study a specific subgroup of gamers (female violent video game players) experience of playing this genre of games will be explored, in order to consider both the general experience of gaming and in particular identification of these gamers with game characters. This may be interesting to consider in relation to other research in this thesis, as gender may be a moderator of any observed effect on game play.

Researchers have argued that the gender differences reported in gaming may be related to (i) socialisation factors (i.e., females not being socially rewarded for playing video-games in the same way as males), (ii) video-games typically being designed by males for other males, and (iii) males having better spatial ability skills than females thus aiding gaming (Krahe & Moller, 2004; Griffiths, 2007; Olsen et al., 2009). However, *Entertainment Software Association* (2012) reported females now represent 47% of US gamers, with females aged over 18 years representing the fastest growing gamer demographic. The current research is interested in exploring any gender specific experiences of female gamers in order to fully explore any relationship between violent video game play and attitudes towards victims. The previous studies have indicated a relationship between violent video game play and less positive attitudes towards victims. In the current research gender is explored as a moderator of such an effect, whilst the experience of playing and identification and immersion in game play is explored as a possible moderator

of any effects, and to explain the individual differences in gamers experience of playing and/or any effects that could be seen to be related to violent video game play.

Motivation to play violent video-games

In exploring gamer's motivation to play, research has indicated various factors that make games more attractive to MGs than female gamers. Hartmann and Klimmit (2006) research with female gamers indicated that females disliked the violent content of games, and stereotypical game characters. In a second study, they conducted an online survey and argued that female gamers were less attracted than MGs to the competitive element in violent video-games, similar to previous research with female gamers (Griffiths, Davies & Chappell, 2004; Lucas & Sherry, 2004). The researchers argued that if competing and winning were not appealing incentives to female gamers, then other incentives identified as important to mgs may not be as relevant for female gamers.

Olsen, Kutner, Warner, et al., (2007) study indicated that adolescent's key reasons for playing video-games related to emotional regulation, relaxation, and the ability of gaming to reduce loneliness. Similar findings have reported gaming offers a means of escape from everyday stress and relaxation by adults and adolescents (Klimmt, Hefner & Vorderer, 2009; Padilla-Walker, Nelson, Carroll & Jensen, 2009; Snodgrass, Lacy, Denagh, Fagan & Most, 2011). Hussain and Griffiths (2009) reported online gaming alleviates negative feelings of loneliness, boredom, and/or frustration. Online gaming studies indicate that social elements of gaming are a key attraction of gaming (e.g., Cole & Griffiths, 2007; Griffiths, Davies & Chappell, 2003; Griffiths, Davies & Chappell, 2004a; 2004b; Yee, 2006). One study reported one-fifth of online gamers preferred to socialise online, rather than offline (Hussain & Griffiths, 2008).

In online gaming, gender differences are evident in the social interactions, but females may place a different emphasis on these interactions (Taylor, 2003). Cole and Griffiths (2007) reported over 70% of mgs and female gamers made what they described as good friends online, and 42% had met them offline. Males made more friends in online games than females, but females were more likely to discuss sensitive issues online and meet them offline than MGs. Yee (2006) argued males are motivated by achievement

and manipulation factors in online gaming, whereas females are motivated by relationship, immersion, and escapism factors. In relation to Massively-Multiplayer Online Role-Playing Games (MMORPGs), Cole and Griffiths (2007) noted that MMORPGs were highly social interactive environments providing opportunities to create strong friendships and emotional relationships. Furthermore, female gamers were more likely than male gamers to share and confide with people they met while playing online.

Reinecke (2009) reported gaming as being used as a means of developing friendship and support systems. This study found adults who received less social support from colleagues and supervisors played games at work more frequently than did individuals with higher levels of social support. Lucas and Sherry (2004) argued that while social elements of video-game play explain the motivation to play, they also explain the lower numbers of female gamers attracted to such play. The study argued that fewer females were playing video-games due to recognised social norms of gaming being a gender-specific activity.

Social interaction in gaming has also been explored from other perspectives. Coyne, Padilla-Walker, Stockdale and Day (2011) suggested that while gaming is associated with heightened aggressive behaviour and reduced prosocial behaviour in adolescents, when considering female adolescents alone; gaming was associated with an increased prosocial behaviour for girls when they played video-games with others. However, it may be significant that the prosocial measure used in the study related directly to prosocial behaviour directed towards the adolescents' family members (adolescent and parent reporting), and as such it could be argued that co-playing with a parent could lead to an increase in prosocial behaviour towards people they are playing with, rather than being related to the influence of gaming.

Character stereotypes in video-games

Various studies have used a content-analytic approach to analyse how video-game characters are portrayed in the media (Dietz, 1998; Beasley & Standley, 2002; Janz & Martis, 2007). Dill and Thill's (2007) content analysis of characters in gaming magazines led them to argue that over 80% of male video-game characters were portrayed as violent, while female characters were more likely to be portrayed in a sexualised manner. In a second study, the researchers asked undergraduate students to

describe a typical male and female in video-games, and the majority (gamers and non-gamers) described the male characters as aggressive and females as being sexually objectified.

In terms of the impact of stereotypes on people's behaviour, various studies have explored potential this concept. Dill, Brown and Collins (2008) explored the impact of exposure to sex-typed video-game characters on attitudes towards violence against women in undergraduate students. The participants were exposed to images of sex-typed video-game characters, that were argued would serve the function of a stimulus or a prime, as the researchers had argued that young people are aware of these gaming stereotypes. Using the sexual beliefs scale (Meuhlenhard & Felt, 1998) to explore people's attitudes towards female aggression, results indicated that long-term exposure to violent video-games correlated with greater tolerance of sexual harassment and rape myths. Violent video-games have been found not only to portray women in a stereotypical manner (Dietz, 1998; Beasley & Standley, 2002; Janz & Martis, 2007), but characters who are minority females are virtually absent in video-games (Burgess, Dill, Stermer, Burgess & Brown, 2011). This stereotypical portrayal of female characters may be a reason why fewer females are attracted to playing video-games (Lucas & Sherry, 2004; Ivory, 2006).

Character Identification

The ability to identify with a character and to develop an attachment to this character allows for a greater immersion whilst playing (King, Delfabbro & Griffiths, 2010). The ability to personalise a character can encourage greater identification with the character, a finding that the gaming industry is eager to encourage (Klimmt, Hefner & Vorderer, 2009). The use of personalised characters in video-games is becoming more common with many games encouraging players to try out different character types. Research has indicated that many gamers value the opportunity to do this (Anderson et al., 2010, Fischer, Kastenmuller, & Greitemeyer, 2010; Konijn, Bijvank, & Bushman, 2007).

Griffiths, Davies and Chappell (2004) found that 60% of online gamers had gender-swapped and 72% had role-swapped (Griffiths, Davies & Chappell, 2003). Hussain and Griffiths reported 50% of online

gamers had gender-swapped, with more females than male players enjoying this aspect of online gaming. Female gamers have also reported motivation to engage in gender-swapping when playing to avoid male approaches to them while playing online (Hussain & Griffiths, 2008). Klimmt, Hefner and Vorderer (2009) described video-games as possible identity laboratories allowing people to experience different identities. In contrast, one study suggested that gaming may inhibit identity exploration with male gamers and female gamers (Padilla-Walker et al., 2010).

Game immersion can be of significant value to players (Wood, et al., 2004; Ivory & Magee, 2009; Hussain & Griffiths, 2008; 2009; King, et al., 2010). Some authors (e.g., Wood, Griffiths & Parke 2007, Snodgrass, Lacy, Denagh, Fagan & Most, 2011) have reported time loss while playing video-games occurs for both male gamers and female gamers, and was perceived by gamers as a positive benefit of gaming that allowed them to fully relax. Hussain and Griffiths (2009) reported less than one-third of gamers experienced detachment from all other concerns during online gaming, however, for some online gamers, the ability to immerse oneself helps facilitate an escape from offline-life (Frostling-Henningsson, 2009). In Hussain and Griffiths' (2009) study, less female gamers reported feelings of detachment than male gamers. In relation to female gamers, greater levels of immersion and identification have been reported by females playing violent video-games when playing as a female character, rather than a male character (Eastin, 2006).

Lewis and Griffiths (2011) carried out a qualitative analysis of female casual gamers. They examined key experiences and motivations of female gamers through thematic analysis of online discussions and interviews with 16 female adult gamers. The key themes identified were similar to previous research with female gamers discussing motivating factors of games (mood modification, escaping reality, and allowing social interactions). Findings suggested that identification (emotional connection) with characters and games was a strong motivating factor for female gamers, while also valuing the ability to act competitively and to customise the games played. Although the study examined casual gamers, some played other game genres (e.g., MMORPGs), Recent research with online gamers suggests female gamers are more likely to play role-play games rather than other online game genres, with almost 20% of

players female, compared to 5% of those playing First Person Shooter (FPS) players and 1.3% of those playing Real Time Strategy (RTS) games (Ghuman & Griffiths, 2012).

The present study was designed to explore the experience of gaming, and the attraction to (and experience of) gaming and to further consider the identification and immersion of female gamers with game characters. This is an interesting area to consider as previous research has studied male gamers in this context. In addition, the role of character identification may be relevant in explaining any individual difference in terms of an observed difference in any observed relationship between violent video game play and less positive attitudes towards victims of crime. As with all areas of psychological research, it remains important to identify both possible causal (e.g., mediators) and moderating factors of any relationship observed, in order to reduce risk factors, and to increase any protective factors. The study used discussions made by female gamers on an online public discussion forum. Previous research exploring secondary data from online gaming forums, has primarily focused on players of just one or two online games such as *EverQuest* (e.g., Chappell, Eatough, Davies & Griffiths, 2006; Griffiths, Davies & Chappell, 2003). It has been argued that this method of data collection in the field of gaming research can be invaluable as it offers opportunities to consider new insights unavailable with other data collection methods (Griffiths, Lewis, Ortiz de Gortari & Kuss, in press)

Method

Data collection

The data were collected from a public online discussion forum intended for FEMALE GAMERs. After surveying various different online gaming forums, one particular website was chosen for analysis is it was predominantly used by FEMALE GAMERs who played a variety of different genre of games. The discussion forum contained approximately 24,315 posts in the general discussion area of the gaming website during May 2012. The posts reviewed were those made during the period of May 2011 to May 2012. The total number of discussions made during this period was 409. The majority of the forum participants were female and played a variety of game genres (MMORPGs, first person shooters, real time strategies, fighting games, war games, strategy games, platform games and adventure games). The

most common games that the female gamers highlighted as favourites were FPS and RPGs followed by action games, horror games and platformers.

Ethical Issues

It has been argued that participants in online forums cannot have expectations of privacy as they are freely accessible to the public (Hurley, Sullivan & McCarthy, 2007). All of the postings in the present study were on an online forum in the public domain and usernames and passwords were not needed to access the site. However, similar to previous research with online discussion forums (Maratea, 2011), measures were included to protect individuals' anonymity. Specific details of the website is not disclosed and the comments made are identified by a pseudonym only. The researcher did not participate in online communication or online interviews on the site. All names and identifying information have been changed to ensure confidentiality of all people who posted on the site.

Process of identifying themes

Thematic analysis was chosen to analyse the data collected because of its flexibility and depth in allowing for an exploration of participants' feelings and motivation (Braun & Clarke, 2006). The initial coding of the data led to identification of four main discussion types. These were coded as (i) *social* (introductions by female gamers and recruitment for guilds and clans) comprising 110 discussion threads (ii) *computer game/platform specific* (new games, features, discussions of particular games, suggestions, advice, tips and game trivia) comprising 205 threads, (iii) *miscellaneous* (non-gaming topics) comprising 51 threads, and (iv) *attitudes and opinions* (in depth discussions of female gamers thoughts on their experience of gaming) comprising 43 threads.

Following the identification of the main categories of the discussions, the researchers focused on the *"attitudes and opinions"* category and discussions within this category. The researchers worked within an inductive thematic analysis that can be described as a method of observing themes from the data without having a particular preconception of the various themes that would emerge (Braun & Clarke, 2006). As noted above, this category comprised 43 discussions, with 1,559 posts. These discussions were

coded into four categories based on their title and content as: (i) playing online, (ii) characters, (iii) gaming habits and (iv) male vs. female gamers (see Table 7).

Following initial familiarising of the data, the discussions were read and responses were collated under main themes, and allocated provisional labels. Responses were then re-read and further sub-themes were identified, and the initial themes redefined. The responses were explored for both actual and semantic meaning, allowing for the development of more meaningful and rich data to be analysed. The semantic approach to data analysis examined the themes that were observed and at times looked beyond the observations and theorised possible reasons and implications for the themes, in order to allow a more comprehensive exploration of the female gamers' experiences of (and motivation to) playing violent video-games .

Results

The analyses of posts on the general discussion forum identified four categories (playing online, characters, gaming habits, male and female differences). These discussions were explored and three main themes emerged from the analyses: identity, social and motivation. Each of the themes comprised various sub-themes.

(1) Identity: There were four 'identity' sub-themes, and these related to gamers' introduction to gaming, their identity as a gamer online/offline, and their identification with gaming characters.

Family *"We all play games in this family, guess the family that games together stays together LoL"(ET2).*

The majority of the female gamerss started to play video-games aged 6-7 years, and the vast majority were introduced to gaming by parents (usually a father), followed by siblings/other close family members (e.g., grandparents, uncles, cousins). The theme of family influences on the development of an interest in gaming was seen in frequent discussions about the gamer's now introducing gaming to their younger siblings, own children, nephews and/or nieces. The female gamers often spoke of a continued passion

within their families for gaming, and at times of a disappointment when they no longer shared this experience with family members:

"As young children my brother and I played video-games nearly every day, but now I am the only one who does which kinds sucks, that's what me and my bro would kinda bond over" (BA1).

Others spoke proudly of continued interest in gaming within their family, with game nights, playing online with family members, and playing with partners commonly mentioned.

'Girl Gamer' Label *"I'm a gamer who just happens to be a girl"* (L1)

The posts ranged from discussions about the merits of the labels of female gamers versus male gamers and what this offered to gamers, to the experience of female gamers whilst playing. In terms of what the female gamers defined a 'girl gamer', there were mixed opinions on what game genre gamers had to play to be considered. Many of the female gamers argued that certain game genres played (i.e., casual games, *Facebook* games, and *Wii* games) were not girl gamers. The key elements classifying a girl gamer were spending large amounts of playing time, being competitive, and being passionate about their gaming. In relation to feelings about the label 'girl gamer', some liked the label but the majority talked about the importance of just being a gamer:

"I'm proud of my gaming heritage, I've grown up my whole life playing...All I can say is a gamer is a gamer" (Z2)

Others talked about how the label can lead to further differentiation between males and females who are gamers:

"Calling ourselves girlgamers does reinforce that divide on some level" (T1).

Some of the female gamers were proud of their gaming habits and the identity of being a gamer:

"I've grown up my whole life playing and have committed a lot of my time to learning about games as well as playing them" (Z2).

Virtual Identity

The identity that female gamers chose to explore and disclose online were directly linked to their experience of playing and others' attitudes and behaviours towards them while playing. This was a very common theme, with many threads linked to the experience. Male gamers and female gamerss discussed the treatment of female gamers as they played online games, including references to sexism, abusive language, unwanted advances, and threats experienced. Gamers talked about their experiences of having to block people, ignore friend requests, and getting inappropriate emails/pictures sent to them after playing online as a female gamers. At least five females disclosed that they had made official complaints about the behaviour of other Male gamers. One female talked about being *"stalked"* by a person she met online who followed her around online for over a year. Two participants talked of being extremely afraid and giving up gaming as a result of the way they were treated online by others:

"*Problems started when they found out I was a real girl, the only one in the guild at that time. I pitched in with key info or anything people would deliberately talk over game and ignore everything I said…I cried and was so devastated I actually quit gaming for almost two years"* (C1)

In response to this online behaviour, the majority of discussions focused on how female gamers chose not to identify themselves as females when playing with others, as they felt alienated and treated differently to Male gamers:

"*[I] usually keep my gender to myself when playing online due to stuff like this, makes for a much more relaxed playing experience"* (Z1)

"I had to hide my identity and pretend to be a guy, if the players knew there was a girl playing there would be endless harassment (especially if you were better than them!)" (C1).

One gamer gave an account of where she disclosed her identity as a female gamer:

"I had not spoken out loud at any point 'cause I am not one to talk to strangers....and they were all like 'you're a girl' and I said 'ye'" and they voted and kicked me out of the game. I had the highest amount of points on my team" (V1).

A number of females felt the only option available to avoid negative experiences was to hide their identity, with the majority stating that they did not talk to others when gaming online:

"I don't talk, I let my guns do the talking" (RS1).

Others talked about a strategy they used of being rude back to rude and abusive Male gamers. Female gamers were unhappy about having to deal with this behaviour online and meant they only played online with friends and family:

"It's annoying, can't I just be me, without having to hide behind other non-gender related gametag?" (MJ1).

The majority of the female gamers attributed negative behaviour encountered to the Male gamers being adolescents. Some female gamers talked about how they sometimes acted aggressively online. For instance, one gamer said: "*I am generally very nice, but when I'm gaming I work off other people in the lobby respect" (G2),* with discussions making reference to cursing and throwing controllers and being *"snarky and aggressive" (T3),* during competitions and times of battle.

Identification with Characters *"Bikini Clad girl with an arsenal of weapons and big boobs...beside a guy in a suit!" (LT1)*

In terms of character identification, the data indicated that the majority of FEMALE GAMERs preferred to play as a female character in games they played, and disliked that in certain games this was not possible. The FEMALE GAMERs discussed the elements of characters they liked and disliked. The most popular theme about preferred characteristics of FEMALE GAMER characters was in relation to the character's personality in games (e.g., being *"cool", "sarcastic" "independent", "brave", "tough", "loving"* and *"sweet"*). One gamer wrote:

"Independent strong beautiful girl that does whatever she wants!..Fierce chick, also does whatever she wants and seems to be very courageous after" (M1)

Gamers described the characters' physical characteristics portrayed in games and highlighted the way they were attractively dressed:

"She's smart and sexy and has an awesome, beefy partner. Plus she gets to own zombies in a mini skirt" (V1).

Realistic storylines and characters were important for some gamers:

"Because she's so realistic, she's just your normal teenager…she doesn't have huge boobs or skimpy clothes and I think she's a pretty good runner" (A12).

"She's tough, and actually seems like she could be a real person" (T1)

Discussions also focused on the relationships that characters had with other characters in-game, and was a characteristic making characters attractive to female gamers (i.e., characters being good friends or being in a relationship). Fighting ability was a key factor for gamers with mention of characters being:
"Tough…kickass…balanced attack and defense styles" (U1)

The female gamers talked about the characters in the games being role-models or providing inspiration:

"*I've always looked up to her as a kind of role model"* (GK 1)

"*She's my hero, and we look alike"* (B2)

Some discussions focused on how characters made a direct impact on the players making the gamers wanting to change:

"Playing her has inspired me to get in better shape" (U1)

"I want to be her" (voiced by a number of different female gamers)

Gamers identified with the characters in various ways, highlighting how similar they felt characters were to themselves. Discussions linked to two key areas of self-identification (i.e., physical characteristics and personality characteristics). One gamer noted that she identified with a female gamer character as *"I could see my husband having to carry me"* (J1), while another stated that she played one game with a particular character frequently during a period in her life "*because I was blonde at that time, so it worked"* (GK1). Others talked about how they had taken characters' elements and brought these into their own lives *"dressed up for Halloween last year, everything in my costume was exact"* (Z3). Another talked about how she "*once bought a gold dress for cocktail party, just like one she worse in that iconic scene"* (S2). In terms of personality characteristics, the female gamers highlighted certain female characters' elements in-game that they identified with. They talked about how a character was:

"*Shy and feminine character, whom resonated with me when I was young and shy…she is like a representation of me"* (V2).

Others identified with characters because *"She is kind-hearted and soft spoken, kinda like me"* (T2), while another noted *"We both have the same personality"* (I2).

(2) Social: There were two 'social' sub-themes (i.e., gamer's online play, and gaming with significant people in their lives).

Online Interaction

The negative experience that female gamers experienced when playing online was a prevalent theme in all discussions. There were ten discussions on this topic yielding 297 posts from members over the year analysed. As previously discussed, female gamers talked about experiencing abusive language, unwanted advances, threats, and racism while playing online with strangers. One commented:

"Not everyone should be allowed to use their mic online, there should be some sort of test for people to pass before they are allowed" (TR1)

While most discussions related to negative treatment of females by Male gamers online, some discussions focused on the treatment of females by other females, and noted that sometimes other female gamers did not like having other females playing with them:

"*Another girl turns on her mic and starts acting hatefully towards me and says things like 'Ugghh another girl' in a rude tone…I didn't provoke her...It's like it's a hassle for some girls to play with other girls"* (L1).

"So far most of the girls I've met are rude" (G1)

Some female gamers discussed the possibility that females already playing (and accepted by the males they play with) want to appear tough and so reject other female gamers when they play:

"I suppose they want to appear 'tough' online" (P1).

Others argued that some who play like to be the only girls playing to receive attention:

"*They must just want to be the only girl in gaming"* (S1)

Other gamers wondered why females highlighted that they were girls, as gender did not matter if playing well:

"If you need to point out you're a girl and you play, then their [they are] obviously going for the attention factor" (Z2)

Playing with significant others

female gamers talked about playing in online/offline settings with others, while significant mention was made of playing with partners, friends, sisters and brothers. Comments suggested that female gamers liked to play with others but also alone. The dominant theme was of female gamers playing online with known people, rather than people they had met online. Some female gamers talked about the game requirements: "*Most of the games I play require a strong team"* (H1), or the need to play with others as part of a campaign. Gaming's social element was a strong theme that emerged with one female gamer

stating that playing with others *"adds a social element, a sense of team work"* (R3). Others mentioned the role of mood, determining who they played with:

"A little bit of everything, Sometimes I'm in the mood for playing alone, other times I'd rather play with friends...really depends on my mood and who's online etc" (R2).

The discussions indicated a predominant theme of flexibility in female gamers' preferences and routines, with the majority of gamers stating they played alone and, at times, with others:

"I like all of it, although big groups can sometimes get out of hand with everyone talking at once" (F2).

Some of the female gamers highlighted the importance of female only websites and discussion forums, as a way to meet other female gamers:

"*It's great to know that these ladies share the same interest because I personally know few girls who game,"* (N1).

A number of times, female gamers mentioned they did not have friends to share their passion for gaming with and so discussion forums enabled finding people they could share experiences with:

"*This girl gamer site is good [cos] it's really hard to find girls I have things in common with on the internet"* (W1).

Similarly, there were many introduction threads with female gamers introducing themselves to other female gamers (61 over the year). These discussions led to 5.8 replies (mean average), as other FEMALE GAMERs welcomed new members.

(3) Motivation: There were three main 'motivation' sub-themes, and these related to the enjoyment of gaming, the use of gaming as way to escape reality, and immersion in gaming.

Outcomes: *"It helps me to unwind from a long day at work, a stress reliever, mood enhancer and for fun"* (LL1)

Female gamers discussed the games they enjoyed playing and their intrinsic benefits (e.g., relieving stress):

"Gaming keeps my mind off things" (ER1)

Discussions also related to playing video-games to unwind and facilitate mood change:

"*When I play it is like and extension of my mood"* (HE1).

Gamers used games as an escape from reality, with references to "*getting away"* and going "*into another reality"*, while others used gaming for relaxation (e.g., *"I play to wind down from the day"*, GT1):

"*I feel I have had a little break from the day to day issues we all face, its a chance to shut down and think of nothing"* (R4)

Some female gamers discussed the skills they had and the sense of power they felt when gaming (e.g., *"I play because I feel a sense of power. I'm able to show off my skills"*, HE1), or "*because I realised I have an insane skill for a girl, even sometimes for a guy"* (SB1). Discussions also highlighted the importance of gaming's social element. Games facilitated a social interaction need and also a chance to play co-operatively in order to achieve common goals. Another predominant theme was the interactive nature of video-games :

"I have a greater love for video-games than I do other forms of entertainment because of the interactive nature....you get involved, you get to feel the emotion and the intensity" (CC1).

Discussions also related to the storylines, use of narratives/graphics, and music. This made gaming more interactive than other media forms (e.g., *"Feeling like you are part of a story instead of just watching it is engaging", R1)*. Playing for fun and general entertainment was a popular reason for playing:

"*Because its fun!! And exploding heads are also pretty satisfying"* (SF1).

Realism versus Escapism *"Giant boobs do not make for a good female lead in any game"* (H2)

Female gamers' discussions were often related to stereotypical characters in violent video-games and how they felt about this. They argued there was a predominance in terms of female characters being represented in a stereotypical manner in violent video-games, with only *"a handful of games that aren't filled with poorly clad women"* (S2) and that "*even in war games where women are not players, there is usually a woman as a victim".* Female gamers particularly mentioned their dislike of "*silly and giggly"characters*, and there was a general feeling that the games were designed for Male gamers rather than female gamers. This reduced gaming enjoyment for some female gamers:

"*I don't like playing games where you play as a scary, whiny girl, these games annoy me and are not worth playing"* (R5).

Discussions highlighted beliefs that female game characters were not designed for fighting:

"A female character this skinny little body, huge boobs and barely any clothes....how am I going to protect myself in pasties and a loincloth?" (M2).

female gamers therefore argued that there were large discrepancies between male and female character portrayal, particularly in terms of clothes, as it is common to see *"fully armoured male warrior next to a scantly clad female warrior"* (W1). There was a general feeling amongst some female gamers that this is improving with more realistic female game characters becoming commonplace as the gaming world moves away from "*the bikini clad girl, with an arsenal of weapons*" (C3).

In terms of choosing characters, there was much discussion on the perceived need for female characters in games (e.g., "*I hate when you can't pick to be a girl in a game"*, C1) and dislike of having no choice

except to be a male character in many games. More specifically, many female gamers discussed a desire to customise their characters in more detail. For instance:

"If I get a chance to pick everything down to the colour of a character's toenails, I'd probably play it" (H2).

One gamer noted there may be gender differences in character choice as her male partner "*just started playing the game with the default character"* while she "*spent 30-40 minutes customizing my character down to the specifics".* Another gamer said when she customises her character, she makes the "*most ugliest character that I can possibly make because so many times you are forced to play with a female character...with huge boobs and barely and clothes"* (M2). Highlighting the characters female gamers would like to see in games, one gamer suggested all that is needed is to design characters that are "*not unattractive, just not stupidly sexualised"* (W1). Some discussions noted that in video-games, all characters are stereotypical and unrealistic, and even male characters are portrayed as *"meatheads, portrayed as raw masculinity without any kind of thoughtfulness or intelligence"* (D2, male gamer). For instance:

"Nobody complains about the way the male character looks" (W1).

There was a general feeling in all discussions that there was a move towards having stronger female game characters, and that this was a positive development. However, some gamers argued that characters are not realistic for a specific reason:

"*Yes it's not realistic, We play games to get away from reality, so why not put it over the top"* (GB1)
Here, female gamers discussed the use of video-games as an escape from reality, and highlighted the need for games to have unrealistic characters to facilitate their separation from reality as they play. Some female gamers acknowledged and appreciated the way the characters were dressed and the overall unrealistic portrayal of female game characters:
"*I don't mind the skimpy outfits; to me it's just like Halloween, pretending to be someone else"* (M2).

Immersion

When discussing gaming frequency, female gamers' times ranged from one or two hours per day to "*within the full time job range*". Discussions focused on significant incidents occurring in people's lives and impacted on gaming time. For instance:

"*If I didn't have a full time job, it'd be more like 60+[hours a week]"* (LD1).

Gamers talked about key events in life (e.g., holidays, unemployment) when they would play more, indicating flexibility in their gaming routines. Gamers also talked about incentives to play when they played new games or an engrossing game, leading to increased playing times:

"*When I had a new game to play or a game I want to beat, around 6-10 hours a day"* (CF1)

There was little indication of time loss in relation to gaming. One gamer stated: "*I played for 6 hours straight last Saturday, without realising it until I went to the restroom and noticed my eyes were burning, The games, they take over*" (LD1). female gamers frequently mentioned blocking out other things from their lives while gaming, and one mentioned she could be distracted from what she was *"supposed to be doing"* by gaming and feeling guilty afterwards. Female gamers also discussed feelings of anger and frustration when they were not doing as well as they would like to during a game and some mentioned the feelings of irritation if anything distracted them while they played.

Discussion

The predominant findings in this study related to the role of identity and social interactions in female gaming, and these were directly related to each other. The female gamers' valued their identity as gamers, and this was highlighted by the reported frustration they feel with the inability to choose female game characters. Paradoxically, in contrast to this interest in and adoption of a gaming identity, the gamers often felt the need to hide their identity when gaming online, due to the behaviour of other male gamers (and sometimes female gamers). The importance of the social elements of gaming for female gamers was a central feature related to both identity and motivation to play, and a consistent finding in previous

research (Hartmann & Klimmt, 2006; Yee, 2006; Cole & Griffiths, 2007; Hussain & Griffiths, 2008; Klimmt, Schmid & Orthman 2009). The female gamers also highlighted the peripheral communication occurring outside of actual gaming (for example, in the sharing of gaming experiences with significant people in their lives and meeting likeminded people on discussion forums).

Interestingly, playing motivations and immersion (and amount of playing time) indicated a real flexibility in female gaming, and confirmed similar findings from previous research (Lewis & Griffiths, 2011). This flexibility of how and when they were able to game suggests female gamers had control over their gaming even though they valued it as a key part of their life, rather than the gaming taking control of their lives. As previous research has proposed that video-game play can be associated with decreased success in other activities such as academic work (Anand, 2007; Anderson & Dill, 2000), a consideration of this flexibility may indicate a level of control over gaming that may not impact on other activities in female gamers' lives, and which may suggest a significant difference in female and male gaming habits.

Identity

There were a number of discussions by female gamers related to the use of the term of 'female gamer' as opposed to 'gamer' and the need for this title. There were mixed opinions, with some females emphasising the value of online discussion forums that were spaces where females could discuss gaming. This was highlighted as important for these gamers as they did not have many female friends they could discuss gaming with. However, other female gamers felt there was no need for such a term, as they were gamers first and foremost, regardless of gender and the term simply highlighted gender differences further. The female gamers' discussions of their gaming origins was often related to the theme of family gaming, with many gamers talking proudly of how their parents and other family members introduced them to gaming, and how they were now introducing the games to their younger family members. In relation to gaming alongside family members, recent research has proposed that the impact of adolescent gaming alongside key family members may to lead to an increase in pro-social behaviour for females (Coyne et al., 2011).

The most prevalent discussions under this theme were related to the need expressed by the females to hide their female identity when playing online with others, due to encountering negative experiences. There were significant discussions regarding the abuse and negative behaviours that female gamers had encountered, even after playing with people for a time before this disclosure. Some of the females outlined their reluctance to reveal their gender, to play with strangers because of this, and for some this experience led to them stopping playing games for significant periods. Previous research (e.g., Hussain & Griffiths, 2008; Griffiths, Davies & Chappell, 2004) highlighted the importance of gender-swapping and role-swapping within gaming for Male gamers and female gamers, but the present research suggests a different motivation for engaging in this behaviour, directly related to avoidance of others' behaviour. The use of female discussion boards may become even more important for female gamers, as this is the most relevant social space where they feel they can identify themselves as female gamers. The discussions that took place on the discussion forum were done so in a 'safe' environment and facilitated honest accounts of female gamers' experiences. The results also suggest that previous research may have underestimated the amount of female gamers playing online as many females may choose male identities while playing.

In terms of the negative behaviour of others while gaming, the discussion tone and words used suggest female gamers were accepting of this behaviour and believed it was inevitable. While unfair, many female gamers had adopted ways of overcoming this, mainly by not revealing their identity online and/or by only playing with known gamers. While it was something that female gamers' reported unhappiness with, for the majority of females it did not appear to present an obstacle to them playing and/or prevent them from playing.

Klimmit, Hefner and Vorderer (2009) proposed that during media exposure, users will adopt elements of the perceived identity of the target character and temporarily at least perceive or imagine themselves to actually be the media character. In this study, identification with characters was reflected in gamers' interests in taking elements of characters into their lives, despite a mixed view on the stereotypical characters found in video-games. The female gamers highlighted identification with characters

physically and in terms of personality characteristics, that allowed gaming immersion, but also to transfer game elements and characters to their own lives.

The female gamer's identification with game characters was directly linked to their discussions about characters being role models to them and/or inspiring to them in real life. This appears a surprising finding but also reveals the importance of gaming to women as an area of their lives extending beyond just a hobby, and becoming part of their personal identity. Previous research on female gamers has not explored this topic in any detail and is a potential area for future research. Klimmit, Hefmer and Vorderer, (2009) argued that video-games offer a virtual identity laboratory, and that gamers particularly value elements of their own identification with video-game characters, and particularly evident in this study. Further research could explore this finding in more detail and consider the potential relationship between varying levels of identification with characters and any related attitudes towards victims.

Social

The theme of social interaction was seen in both discussions of gaming attractions and in the discussions of forum use. Gamers talked about the importance of gaming interactions (playing with others), interactions peripheral to actual gaming (accessing gaming forums), the sharing of gaming experience with significant others (family, friends, partners), and difficulties encountered with online social engagement (with males and females). The majority of females highlighted the importance of playing with others, with many mentioning that they played with boyfriends/partners. Furthermore, many discussions mentioned joining guilds and working with others online and supports previous research highlighting the importance of social interaction for female gamers (e.g., Cole & Griffiths, 2007).

Research suggests the importance of social elements in gaming, and the use of gaming as a medium for developing relationships (Cole & Griffiths, 2007; Griffiths, Davies & Chappell, 2003, 2004; Hussain & Griffiths, 2008; 2009). In this study there appeared to be a prevalent theme amongst the female gamers

to play online with other people that they know, rather than to develop new friendships online, supporting previous research (Cole & Griffiths, 2007; Yee, 2006).

In contrast, researchers have argued that online relationships may facilitate the formation of permanent and rewarding friendships (Longman, O'Connor & Obst, 2009; Yee, 2009), with some research (e.g., Cole & Griffiths, 2007) arguing gamers make real and significant friendships online. It could be argued that the current study samples a particular group of people who are not interested in meeting others online. An alternative explanation may be related to the reported experiences from many female gamers of unsolicited male (and female) attention/abuse while playing online that may not have been as common in earlier studies. Previous research made reference to this negative experience, with female gamers reporting avoidance of male attention as a reason for gender-swapping (Hussain & Griffiths, 2008). In this study, this was an extremely common theme discussed.

Motivation

Attraction to video-games for female gamers was related predominantly to the role of social engagement, in terms of physical interaction (playing alongside significant others) and virtual interaction (playing online/discussing gaming online). Engagement and identification with characters and storylines was believed to facilitate escapism and relaxation that female gamers highlighted as important for their gaming enjoyment. This confirmed previous research on female gamers (Klimmt, Hefner & Vorderer, 2009; Lewis & Griffiths, 2011; Padilla-Walker, Nelson, Carroll & Jensen , 2009; Snodgrass, Lacy, Denagh, Fagan & Most, 2011).

The discussions indicated that female gamers identified with characters and immersed themselves in games they played. While many highlighted the need for more realistic characters to choose from, there was a predominant theme of enjoying interactive gaming, with mixed attitudes towards the stereotypical characters in games. There was a feeling that video-games are designed to be unrealistic and as a form of escapism from reality and this necessitated the characters being unrealistic forms of both females and males. Others argued that character realism has improved and that characters have graphically developed. Female characters are still stereotypical but not as *"hypersexualised"* as they were in the past and the

general feeling was that this is a positive change, in terms of control. Gamers also discussed the importance of taking control of their gaming through choice of character that they play, with many female gamers indicating frustration with (and a lack of attraction to) games that did not allow this element of choice with the characters they played. Similar findings have been reported by Hartmann and Klimmit (2006) with female gamers indicating their unhappiness with stereotypical female characters.

These findings may be interpreted in relation to Dill and Thill (2007) who argued that gamers and non-gamers are aware of the stereotypical portrayal of characters in video-games, with male gaming characters portrayed as aggressive, and the females with direct reference to sexually objectified physical symptoms. In this sense, it is not surprising that female characters may be *"accepting"* of unrealistic and stereotypical characters portrayed in video-games, as this is a portrayal that both gamers and non-gamers are aware of. An alternative explanation may be that some females, at least, are accepting of these stereotypical characters as the playing of games as a non-realistic character facilitated this escape to a greater extent, than a realistic character would do. Interestingly, research has suggested that the use of unrealistic characters may allow gamers to overcome their concern regarding the violence they are engaged with in video-games (Hartmann & Vorderer, 2010), an argument that could be relevant in this study. The female gamers attributed negative behaviour they encountered online to adolescent males. This perception is in direct contrast to previous research that has argued against a stereotypical view of male adolescents as 'typical' gamers (Griffiths, Davies & Chappell, 2004).

While previous research with male gamers has highlighted immersion in video game play as a possible moderator of any relationship with violent video game play, there was little indication of time loss from in the current study by the female gamers, although gamers did talk about gaming for extended time periods. Overall, there was a prominent theme of flexibility observed in female gamers' discussions of their gaming that was pronounced in discussions of how long people played for. Female gamers mentioned times when they had played for extended periods and these related to times when they had free time (e.g., on holiday, unemployed, weekends), rather than any discussion of gaming impacting on key activities day-to-day. This is similar to previous research (Hussain & Griffiths, 2009), that found gamers

used their time effectively when incorporating gaming into their lives. Previous research on casual female gamers noted a majority of gamers felt guilty about gaming (Lewis & Griffiths, 2011). It could be argued that the stereotypical view of gamers, and of female gamers in particular, can lead to female gamers not fully engaging in gaming as a valid pursuit due to the stereotypes associated with it and its perception within society. Therefore, it could be argued that while female gamers are immersing themselves in gaming, this may be to a lesser extent than male gamers and may have implications for the research exploring the impact of violent gaming. A similar argument has been put forward by Lucas and Sherry (2004) who suggest that the social norms for gaming means that females are less likely to play these games. The majority of this study's gamers played action and FPS games but the discussions did not emphasise any particular element of these game genres.

Limitations and further research

The primary weakness of the current study relates to the reliance on secondary data, with different samples in every discussion that was analysed. Other limitations may be related to the fact that any posts on the discussion board that were included in the analysis as female posts may actually have included postings by males. The initial analysis and familiarity with the data involved the researchers excluding any posts that appeared to be made by males, either through use of male user names or through self-identification as a male. In this sense the analysis may be missing some female gamers' opinions or including a small amount of male postings. Recently research has explored key themes that emerged in solicited interviews and online discussion forums with female casual gamers (Lewis & Griffiths, 2011). This study is one of the few conducted on female gamers, and the first to explore naturalistic discussions among female gamers. However, the findings may not generalise to all female gamers, as the qualitative nature of the study was designed to allow an exploration of some of the key themes rather than a large scale study of female gamers. It might also be argued that the participants involved in the study may be representative of a particular group of gamers who are involved in particular gaming websites, and as

such there may be a particular cohort of female gamers that it would be interesting to carry out future research with.

Overall the present study indicates that the female gamers are enthusiastic about the future of gaming and the move towards greater choice and control in relation to game character choice. The female gamers indicated a flexibility in their gaming habits, with little indication that gaming had a negative and controlling effect on their lives. The role of interaction both online and offline was noted as a predominant theme for female gamers, and this may be related to both identification with gaming characters, but also to the reluctance of female gamers to identify themselves as female while playing online. It appears that while there is a need for better female game characters to be developed, in certain gaming environments (and for some gamers), the game is more important than the character and often gamers do not wish to be identified as female while playing. Current research on gaming suggests that this is an activity that is predominantly played by males, in studies completed with children (Anderson, Gentile & Buckley, 2007; Escobar-Chaves & Anderson, 2008; Gentile & Anderson, 2003) adolescents (Anand 2007; Olson et al., 2007) but also in adulthood (Griffiths, Davies, & Chappell, 2004; Padilla-Walker, Nelson, Carroll & Jensen, 2010), although it appears this pattern of gaming may be changing. At present there is limited research on female gamers and further research in this area is needed to explore the experiences of this gaming group as the number of female gamer's increases, and it could be argued, their identity as a gamer becomes a significant consideration. The current study is interesting in the context of an understanding of the impact and experience of violent video game play on both male and female players. As the experience of violent video game play is explored in relation to any possible effects of game play, it is imperative to explore any potential risk factors that may mediate such an effect, and consequently any protective factors that may moderate such an effect and allow for a greater understanding of individual or group differences in effects observed. In this respect, as the current thesis is interested in exploring attitudes towards victims, the role of gender and differences in identification with characters according to gender, the research exploring this directly with a group of female gamers is of particular significance. In the current study the female gamers indicated the importance of identification with characters, but in addition flexibility in terms of immersion in their game play. As

previous research has indicated the significance of identification and immersion in violent game play for male gamers (e.g. Wood, et al., 2007) there may be a key gender differences in game play experience, and this may be a moderator of the impact of such games on attitudes towards victims. In this respect (as the previous studies in this thesis – Chapter 3 and 4 highlighted), gender difference in terms of attitudes of gamers towards victims of crime, the current studys findings may be seen to explain some of these gender differences. The female gamers reported an identification with game characters (and immersion in their game play), but simultaneously indicated flexibility in their game play habits, suggesting that they valued their gaming significantly but that they were able to and willing to incoperate this into other aspects of their lives. This, it could be argued, highlights a significant difference between male and female gamers as seen in previous research, and this flexibility could be a moderator of the relationship between violent video game play and attitudes towards victims. The final study in this thesis is designed to explore gender differences further, and to continue to explore cognitive distortions as a mediator of the effect of violent game play on victims of crime. Moral disengagement as a common cognitive distortion found in aggressive sports play, may also be a cognitive distortion employed when playing aggressively in a virtual setting, and may be a mediating factor in the development of less positive attitudes towards victims of crime.

Table 5: Main categories identified within "attitudes/opinions" discussions and the corresponding discussion threads and number of replies in Study 3.

Category	**Number of Discussion Threads**	**Amount of posts**
Playing Online	10	297
Characters	13	533
Gaming Habits	9	329
Male vs. Female Gamers	11	200
Totals	43	1359

Table 6: Themes identified from Study 3

Main Themes	Sub-themes			
Identity Theme:	Family	Girl Gamer Label	Virtual Identity	Identification with characters
Social Theme:	Online play	Playing with significant others		
Motivation Theme:	Outcomes from gaming	Realism versus escapism	Immersion	

Chapter 6: Exploring moral disengagement as a framework for understanding violent video game play and attitudes towards victims (Study 4)

Introduction

There has been much research exploring the impact of violent content in videogames on young people in terms of aggressive cognition, behaviour, and affect (e.g., Anderson & Bushman, 2002, Anderson, Anderson, Shibuya, et al., 2010). Social cognitive models argue that habitual exposure to violent media can lead to long-term changes in attitudes towards aggression (Anderson & Carnegey, 2009) while Konijn, Bijvank and Bushman (2007) suggest that identification with characters in a virtual world can influence adolescents to behave more aggressively against each other in the real world. Hopf, Hubert and Weib (2008) have argued that experiencing aggressive emotions (such as hate, anger, feelings of revenge) that are experienced during violent gaming are key risk factors for the development of aggressiveness and changes in cognitive and emotional states. However, Weber, Behr, Tamborini, et al., (2009) argue that players spend less than 10% of their game play involved in actual violent play during play of an average violent videogame and therefore suggest that the violence in videogames is not as much of an issue as some researchers have suggested.

Recent research has suggested that the element of competition in a game, rather than violent content, may explain the negative effects of experiencing violence in a game setting. As such, a comparison of virtual and real life competitive environments may be useful. A related field may be the use of similar antisocial acts in real life competitive environments, with research exploring immoral sport-related behaviours, including aggression, cheating, and disrespect (Bredemeier & Shields, 2006). The levels of aggression across these two settings may not be similar in content, but can represent a violation of personal standards of acceptable behaviour, and create a personal dilemma for players. Researchers have become interested in exploring mechanisms by which this behaviour may occur and the cognitive processes that people may engage to act in such a manner. In relation to both sporting environments (e.g. Boardley & Kavussani, 2007; Corrion, Long, Smith & d'Arripe Lougueville, 2009; Caliskan, 2013) and in videogame settings (e.g., Bastian, Jetten & Radke, 2012; Gabbiadini, Andrighetto & Volpato, 2012, Gabbiadini, Riva,

Andrighetto, et al., 2014) it has been argued that players may justify their behavior, in order to alleviate negative effects associated with the antisocial behavior and allow them to continue with this behavior.

Recent research (e.g., Gabbiadini, Andrighetto & Volpato, 2012, 2014; Richmond & Wilson, 2008) has explored the role that cognitive distortions (e.g., moral disengagement) may play in making media violence more acceptable to people. The present study is designed to build on this previous research and explore if Bandura's (1991; 2001) theory of Moral Disengagement provides a useful framework for understanding the willingness and ability to engage in virtual violence and to compare this process with similar process in competitive real life environment (i.e., with sports players). The research is also designed to build on recent research suggesting a link between violent gaming and less positive attitudes towards victims (McLean & Griffiths, 2013a; 2013b), with moral disengagement explored in terms of a cognitive distortion that may mediate the impact of violent video game play on players attitudes towards victims of crime. Moral disengagement (MD) may therefore be seen as a cognitive mechanism for facilitating gamers to act violently in game settings, but may also be associated with reducing concern for victims of such acts. Moral disengagement and moral considerations are key elements of Bandura's (1991) Social Cognitive Theory of Moral Thought and Action. Here, the concept of moral disengagement refers to a set of cognitive mechanisms that are part of a self-regulatory internal process. These psychosocial processes are believed to inhibit moral standards and prevent one from engaging in behavior that is contrary to one's moral behavior standards. If the process of moral disengagement can be seen to be a mediator of the effect of violent video game play on players, this may indicate a further risk factor of video game play and as such considered in relation to the other mediators explored in this thesis (defensive attribution, attribution of blame and developmental stages).

Moral disengagement

Moral standards, moral emotions, and moral justifications are important in understanding behaviours that involve aggression towards others (Perren & Gutzwiller-Helfeninger, 2012). Research indicates that people can experience guilt and unease when encountering virtual violence (Weaver & Lewis, 2012), similar to feelings people have when they experience or witness real life violence. Bandura's social

cognitive theory of human agency (1991, 1996) argues that moral standards are part of a self-regulatory process that evaluates any intended behavior in terms of potential consequences for individuals. Moral standards are key elements of the theory and any violation of these standards results in guilty feelings which can stop the intended behavior from occurring. The theory also argues that a disinhibitory social cognitive process can be employed making it easier for individuals to act in negative ways, as people are freed from censure and potential guilt (Hymel, Rocke-Henderson & Bonanno, 2005). According to Bandura (1991; 2001), cognitive mechanisms can be selectively activated to escape self-evaluations and self-sanctions and explain ways that individuals will commit acts that violate their internal standards but also explains the methods that individuals use to justify these acts.

There are eight mechanisms of moral disengagement that Bandura (2002) argues involve *"cognitive restructuring of inhumane conduct into a benign or worthy behavior"* (p.101). These are moral justification (justify one's behavior as serving societal worthy and moral purpose), euphemistic language (using language that sanitizes harmful behavior), advantageous comparison (comparing one's own harmful conduct with more harmful acts), displacement of responsibility (ascribing blame for damage to other agents), diffusion of responsibility (minimizing one's role in harm), misrepresentation of harm (distorting, minimizing or disbelieving any harmful effects), ascription of blame (blaming victim for own plight), and dehumanization (stripping people of human qualities). Some researchers suggest that these mechanisms can be categorised into four main categories: (i) cognitive restructuring, (ii) minimizing of one's own agentive role, (iii) disregarding/distorting negative impact of harmful behavior, and (iv) blaming or dehumanizing of victims (Hymel, Rocke-Henderson & Bonanno, 2005). Bandura (2001) suggests these eight social-cognitive mechanisms work by disengaging individuals from their personal agency. Individuals endorsing high levels of moral disengagement are more likely to support using violence and engage in aggressive behavior themselves (McAllister Bandura & Owen, 2006; Paciello et al., 2008).

Moral disengagement and videogame playing

As moral disengagement (MD) is a possible mechanism that allows people to act in ways that violate their personal standards, researchers are interested in the role of such strategies in violent gaming, where people are engaged in levels of violence that it could be argued violate their own moral standards. While Ladas (2002) argued that players do not report guilty feelings after committing virtual violence, research has indicated players report some level of moral concern when they conduct violent actions during gameplay (Klimmt et al., 2006; Weaver & Lewis, 2012).

Researchers argue that moral choices are now used as central plot devices in videogames (Sicart, 2009; Shafer, 2012; Weaver & Lewis, 2012), and moral decisions in videogames largely play out the same way that moral judgements in real-world interactions occur. Klimmt, et al., (2006) argue that moral disengagement may be one of the process that allows gamers to enjoy the game, as in order to play violent videogames, players must suspend judgments of their action. Researchers argue that to allow full immersion in videogames, players must be able to disengage from violence in the game. Game immersion can be facilitated by cues that are inherent in the game (Klimmt, 2006; Hartmann & Vorderer, 2010). In particular, researchers have argued that the game narratives are central to this process as they allow gamers to believe they are fighting for justice. Additionally, Klimmt, et al., (2006) argue that gamers often rely on a narrative within a game that legitimizes them as morally correct and this facilitates a justification of the violence they are using. Further evidence for this is research indicating that violent videogame players see themselves engaged in justified violence (Smith, Lachlan & Tamborini, 2003).

It has been argued that the ability to identify with a character and to develop a game character attachment allows for greater immersion whilst playing (Anderson et al., 2010; Fischer, Kastenmuller, & Greitemeyer, 2010; King, Delfabbro & Griffiths, 2010; Konijn, Bijvank, & Bushman, 2007) as it allows people to experience different identities and offers escape from everyday stresses. Furthermore, game immersion can be an element of significant value to gamers while playing (Hussain & Griffiths, 2008; Ivory & Magee, 2009; King, et al., 2010; Wood, Griffiths, Chappell & Davies, 2004). Weaver and Lewis (2012) argued that players respond to characters in games as if they were real, with players reporting

guilty feelings when they acted in an antisocial way towards game characters. Here, it could be argued that gamers are identifying with characters in a similar way to how they respond in real life.

Klimmt et al., (2006) reported that games are no longer enjoyable when they induce strong moral concerns (e.g., with non-typical victims in videogames including children, female victims or unarmed victims). Players' report feeling automatic concern for such victims. Weaver and Lewis (2012) argue that moral considerations during gameplay is cited as a reason for the avoidance of negative behavior. Enemies within videogames are often portrayed in certain ways that make them appear less human (Hartmann & Vorderer, 2010) or portrayed as holding morally inacceptable positions (Klimmt, et al., 2006). However, this appears to contrast much research indicating the identification gamers' develop, and value, with characters within videogames they are playing. Additionally, some authors (e.g., Griffiths & Parke, 2007; Kaye & Bryce, 2012, 2014; Snodgrass, Lacy, Denagh, Fagan & Most, 2011; Wood) have reported that time loss while playing and is perceived by gamers as positive (i.e., allowing them to escape/relax).

Moral Disengagement and Sports

Recent research by sports psychologists has indicated that moral disengagement strategies may be a key consideration in the use of aggressive or antisocial behavior in the sporting arena (Boardley & Kavussanu, 2007; Corrion, Long, Smith & d'Arripe Lougueville, 2009; Long, Pantaleon, Bruant & d'Arripe-Longueville, 2006). Researchers suggest that such justifications taking place in sports may have implications for the frequency of athletes' antisocial behavior (Boardley & Kavussanu, 2007). Sport MD has been found to be positively associated with antisocial behaviors such as trying to injure opponents and breaking the rules of the game, and negatively associated with prosocial behaviors such as helping injured opponents and congratulating opponents for good play (Corrion, et al., 2009). In a study of 803 youth-sport participants, nearly 10% admitted cheating, 13% admitted trying to injure opponents, 31% had argued with officials, and 13% had made fun of less-skilled teammates (Shields et al., 2005). Lucidi, Zelli, Mallia, et al (2006) also examined the association between overall moral disengagement and the use of doping substances in physical activity. Findings show sports players using these strategies such as

diffusion of responsibilities (Long et al., 2006), minimizing the transgressions used (Corrion, 2009) and displacement of fault (Corrion, 2009), and to be more common in male sports players and to increase with age of sports player (Boardley & Kavussanu, 2007).

Boardley and Kavassanu (2007) argue that among team sportsplayers, the pressure to engage in antisocial behavior relates to extensive competition for team places. The message given is to succeed at all costs, and that incapacitating players from other teams often leads to an advantage to players' teams. This message may then be further reinforced because players are usually evaluated on the outcome of their performance rather than the performance they used to get to the outcome. In relation to videogames, the impact of team play may be seen in a similar manner to impact on MD strategies. Klimmt, et al., (2006) reported violent gaming do not report guilt when engaging in virtual violence if done as part of a team. They argued that in team/cooperative gameplay, moral reasoning does not take place to the same extent as when playing alone. In a single-player situation, narrative issues and the process of identification with morally acceptable roles is of paramount importance to gamers. In the multiplayer/team environment, this is less important to gamers than if the team is good or evil.

Recent research has suggested cooperative game play reduces aggressive cognitions (Schmierbach, 2010), prosocial behavior (Sheese & Graziano, 2005) and arousal (Lim & Lee, 2009). Bastian, Jetten and Radke (2012) further explored the impact of cooperative play on gamers' attitudes towards others. In their study, undergraduate students (n=38) played a violent (first-person shooter) game or a non-violent videogame, with another person and against computer-generated programmed avatars for a short period of time (20 minutes). In relation to Self-Perception Theory (Bem, 1972), the authors' considered if the conducting of violence led to one viewing oneself as less human, as our self-perception is guided by our overt behavior. Results suggested that we reduce our perception of others' humanness if they are the targets of our violence, but not if they are playing cooperatively with us. In this sense we do not appear to dehumanise other people when playing cooperatively, or who are part of our team. Bastian, et al, (2012) further argue that dehumanization may not occur for others if we perceive that they are supporting our own goals.

In terms of moral disengagement strategies, it may be argued that group decision-making can facilitate inhumane behavior by virtue of the responsibility being shifted to the collective as opposed to individuals. It has been demonstrated that people have an increased likelihood to behave more cruelly in a group as opposed to when they are alone (Haslam, 2006), possibly due to various psychological processes such as diffusion of responsibility (Darley & Latane, 1969) or deindividuation (Zimbardo, 1969). In relation to violent gaming, Klimmt et al., (2006) argued that gamers reported no guilt or negative affect if they played within a team situation, while Bastian, et al., (2012) found no evidence of dehumanizing of co-players in a gaming setting. These findings may be related to the diffusion of responsibility attributed to the group rather than to individuals themselves.

Playing violent videogames can lead to a decreased view of our group members as possessing human-like traits (Greitemyer & McLatchie, 2011), enemies within a gameplay situation can be dehumanised (Hartmann & Vorderer, 2010), and others can be seen as less human (Greitemyer & McLatchie, 2011). Bastian, et al., (2012) found that violent gaming led to a reduced view of oneself as possessing positive human qualities. Although the sample used predominantly comprised female undergraduate participants, the researchers controlled for gender. This suggests that dehumanization of real individuals, groups, and of virtual characters, is associated with gaming, although the role of cooperation and team play may play a role. It appears that the motivation to use moral disengagement strategies may be relevant in both violent videogame settings and in team/competitive sports settings.

The impact of competition in games

Similar to films, suspense within videogames has been found to be a significant determinant of player's enjoyment of gaming with competition within videogames often regarded as a key element of a player's entertainment experience (Vorder, Hartmann & Klimmit, 2003). Recent research has suggested that competitive elements of videogames, rather than the violent content has the greatest influence on aggressive behavior. In an experimental study by Gabbiadini, Andrighetto and Volpato (2012), exposure to a particular videogame (*Grand Theft Auto*) predicted higher levels of moral disengagement. In a

related longitudinal study (Addachi & Willoughbly, 2013) higher levels of aggression were associated with long-term competitive gaming and gambling in adolescents (n =1492).

Oxford, Ponzi and Geary (2010) used violent gaming to explore the hormonal response of men involved in competitive team playing. Results indicated that men on a winning game team and perceived they had played a part in the win experienced a testosterone increase. This exhibited a similar pattern to response found during actual male-to-male competition outside of gaming. The researchers suggested that violent videogames are appealing to young men as they allow engagement in male-to-male competition (i.e., an evolutionary motivation).

According to game reasoning theory (Bredemeier & Sheilds, 1986) the sport context differs from everyday life contexts in terms of constraints of space, rules, time, and values. These differences are assumed to modify usual moral reasoning structures toward being more self-centered because of the stakes of sport (Corrion, et al., 2009). Within violent gaming, it can be argued that MD can affect gamers' attitudes towards victims as the primary aim is to score points and win, often at the expense of the other characters or opponents. Here, the use of violence and strategies that help to achieve violence, appear to be an obvious choice for gamers. In relation to sports play, there are similar motivations for engaging in behavior that is contrary to one's own standards for appropriate behavior.

Virtual Victims

Klimmit, et al., (2006) argued that violent gamers rather than just being observers of violence, are actual perpetrators of the violence, while a similar argument put forward by Bastian, et al., (2012) suggests violence in videogames can be more powerful than in other forms of media due to gaming's interactive nature that can lead to people identifying with the violence and taking responsibility for virtual violence. Research also indicates those players' report guilty feelings and negative affect after making antisocial choices within videogames (Hartmann, Toz & Brandon, 2010). This is particularly relevant in the light of research indicating that gamers often treat videogame violence in a similar way to real-world violence (Weaver & Lewis, 2012), or use real-world strategies in gaming and feel personally responsible for the

actions taken within gaming (Hartmann & Vorderer, 2010; Jetten & Radke, 2012). In similar research by Weaver and Lewis (2012), 75 adult gamers played a game and moral choices made while playing were coded as social, antisocial, or neutral. Results suggested most players avoided antisocial choices while playing, and argued it was due to engagement in moral considerations. Players that chose antisocial play reported more guilt than those who behaved morally.

In contrast, some researchers argue gamers make conscious decisions to separate virtual violence from real life violence. Bosche (2009) argues that violent game play is perceived by gamers as harmless acting out of playful fighting, and not as serious as real aggression. In this research, 50 male gamers' reaction times were measured while playing videogames, where they were required to act aggressively or prosocially towards a game character. Findings showed there was no inhibition of aggressive behavior in reaction times, and if players had been upset and/or disturbed by the aggression, their reaction times should be lower. However, there are some methodological problems including whether the game was really a violent game and the fact that players were novices.

The most researched moral disengagement mechanisms in the field of violent videogames is the possible role of dehumanization. Dehumanization refers to the process of denying humanness to a person, and Bastian, et al., (2012) argue *"dehumanization oils the wheels of aggression and violence against others"* (p.486), while Haslam, Loughnan, Reynolds and Wilson (2007) argue that dehumanization can enable and disinhibit violent acts (and may be of relevance within the study of violent videogames). Research indicates that people that provoke others in real life may be viewed as less human (Greitemyer & McLatchie, 2011). However, it may be of real interest to consider those that provoke others online or in videogames. Playing violent videogames has been found to lead to increased dehumanization of others, but not of oneself. In an experiment by Gretimeyer and McLatchie (2011), participants (n=40) played violent, neutral, or prosocial videogames and then made attributions of positive human qualities of others. Playing violent videogames was associated with fewer attributes of positive human unique qualities in others. The researchers argued that by denying uniquely human qualities to others, it made it possible to perceive the other people more like animals.

Bandura (2002) argued that personality characteristics in relation to moral disengagement may differ according to individual personality characteristics. Here, high moral disengagers are less likely to engage in prosocial behavior and report less guilty feelings over any detrimental conduct engaged in. Bandura argues that both of these individual tendencies may lessen the restraints individuals feel over acting in an aggressive manner. However, Shafer (2012) argues against this and suggests moral disengagement does not make violent gaming more enjoyable. Rather, individuals with high MD are those that are simply more likely to choose evil options within their gameplay.

The present study aimed to extend the research on moral disengagement strategies used within the field of videogame research and to compare gamers' strategies with those of people that play competitive sports. Festinger's theory of cognitive dissonance (1951) can explain the difficulties people experience when they are involved in behavior that is contrary to their internal morals and attitudes. The theory argues that individuals experience anxiety if their behavior does not match their attitudes, and this can be related to the behavior of acting aggressively (even in virtual environments). The option for the person to experience the anxiety or dissonance is to change their behavior or cognition to alleviate such anxiety. The theory of MD allows for a consideration of moral management methods that gamers may use to reduce dissonance between their understandings of morally acceptable behavior and to facilitate them to use behavior that is contrary to their understanding of acceptable behavior. Using the literature outlined, the present study tests a number of hypotheses.

Hypotheses relating to moral disengagement scores: It was hypothesised that there will be significant differences between three groups of participants (violent videogame gamers, sportspeople, and controls that neither play violent videogames or sports) on moral disengagement (MD) scores with gamers and sportspeople scoring higher than controls. It was also hypothesised that no difference would be observed between the sportspeople and the violent gamers in terms of MD scores, based on research indicating the use of these moral management strategies in both of the participant groups. It was further hypothesised that violent gamers would be more likely to use the dehumanization and minimizing of one's own action

strategies, based on previous research in the field of violent video gaming. King, et al., (2010) note that one of the difficulties with doing research in the area of videogames, is that gamers can be quite defensive about their gameplay habits, due to a mistrust and a threatened feeling about psychological research. This can often lead to gamers consciously or unconsciously underestimating the impact of gaming on others.

Hypotheses relating to gender differences: It was hypothesised that male gamers would report more MD than female gamers, due to decreased empathy and higher levels of identification with game characters. Coulomb-Cabango and Rascale (2006) argued that there is greater reinforcement of harmful behavior in males compared to females due to established views of masculinity that explain why in sports males transgress more often females (Boardley & Kavassau, 2011). A similar argument has been proposed by researchers asserting that the gender differences reported in videogame research may be related to (i) socialization factors (i.e., females not being socially rewarded for playing videogames in the same way as males) (Griffiths, 1993), and (ii) the fact that videogames have typically been designed by males for other male gamers (Griffiths, 1993; Krahe & Moller, 2004; Olson, Kutner, Baer, Beresin, et al., 2009).

Method

Participants: The sample comprised 605 undergraduate students from a third-level college in Dublin (305 females and 300 males). The survey was advertised online within the college, where a request was made for males and females to participate in an anonymous survey. The students were also approached during class and directed to the online survey and given the choice to complete a paper-and-pencil survey during class. The participants were aged between 16 years and 60 years (mean=23.6 years; SD=8.1 years).

Materials: All materials were in the form of self-report questions and scales. The following measures were used to explore moral disengagement and videogame and/or sports playing habits.

Moral Disengagement Scale: The Moral Disengagement Scale (Bandura, 1999) was designed to assess levels of MD. The MD Scale is a 32-item scale that asks participants to rate their opinion of 32

statements on a 5-point Likert scale. The items in the scale can be seen to be related to eight main subscales, the mechanisms of MD. Table 1 outlines the mechanisms of moral justification and the items in the scale related to the eight mechanisms. The initial 32-item Moral Disengagement Scale (Bandura, 1999) was designed for use with children and young people and the questionnaire was adapted for use with different adult (Smith & Wood, 2006) and child/adolescent populations (Ponari & Wood, 2010; Richmond & Wilson, 2008). For the current study, the scale was adapted for use with a young adult and adult population, with some cultural differences noted following a pilot administration of the original questionnaire to a small sample of adults (n=30). Following the pilot, the questionnaire was adapted slightly for the present study.

Revision of the Moral Disengagement Scale for the Present Study: The revisions in the questionnaire were designed to ensure that items were developmentally appropriate. The words "kid" and "child" were changed in the current study to ensure the questions were applicable to the adult population. Eight revisions were made to these words on items 4, 5, 8, 12, 13, 14, 20, 21, 24. Four items which referred directly to children were retained for the current study (Items 21, 29, 30, 32) as the items referred directly to childlike behaviors. Changes were also made to three items to ensure their relevance to the participants, "obnoxious classmates" was altered to "someone who is obnoxious" (item 10), "worm" was changed to "fool" (item 15) and "classmate" was changed to "someone" (item 19). The 32 item statements were scored on a 1 to 5 scale (1=strongly disagree; 5=strongly agree). Higher scores indicated a higher level of MD. Cronbach‟s alpha was .87 for the present scale.

Demographic Questionnaire: At the start of the survey, participants were asked to indicate their age and gender. After completing the MD scale they were asked if they played team sports for more than one hour-per-week, or if they played videogames for more than two hours-per-week. If participants played videogames, they were then asked to indicate the types of game they played (i.e., sports, war/fighting, shooting, puzzle, other, exercise, role-play, adventure, racing). When participants indicated that they played war/fighting or shooting games, they were classified as competitive videogame players. The participants were then asked if they played these games predominantly alone or with others. The gamer

sample comprised 192 participants, the sports sample comprised 185 participants, and the comparison group comprised 228 participants.

Procedure

The survey questionnaire was available to complete both online and offline. The participants were informed that all the surveys were anonymous and that participation was voluntary. Participants were asked to complete the online questionnaire and informed this would take approximately 8-10 minutes. In the offline survey, students approached in their classes. The students were enrolled in Humanities, Business Information Technology, Sports Management and Computer Science courses, and sixteen different classes were approached. Students were informed that their participation was voluntary and that all information was confidential. Students were then asked to complete paper copies of the questionnaire, or were directed towards the online survey link and asked to participate in the survey in that way. All participants were thanked at the end and given a unique identification number that they were informed they could use at any time in the future to withdraw from the study.

Results

Moral disengagement

A one-way between-groups ANOVA was conducted to explore the impact of violent videogame play on Moral Disengagement (MD) scores (Bandura, 1999). Table 8 outlines the results of the analysis and the key differences between the groups. There was a statistically significant difference at the $p<.01$ level, in MD scores for the three groups on total Moral Disengagement Scale [$F(2,602) = 7.86$, $p<0.001$], cognitive restructuring [$F(2,602) = 12.12$, $p<0.001$], minimizing one's role [$F(2,602) = 4.82$, $p=.008$], disregarding negative impact of one's behavior [$F(2,602) = 3.05$, $p=.022$], and blaming one's victims scale.

Post-hoc comparisons using the Tukey HSD test indicated that mean scores for violent videogame players and sportsplayers were significantly different to the controls on total MD scores, cognitive restructuring scales, and blaming victim's subscales. In relation to minimizing one's role subscale, the mean score for violent videogame players (M=18.05, SD=4.55) was significantly different to the sportsplayers (M=19.57, SD=5.0). Mean scores for sports gamers (M= 8.54, SD=2.93) was significantly different to the controls (M=7.89, SD=2.32) on the disregarding negative impact of one's behavior subscale.

Gender differences

The sportsplayers in both the male and female groups were found to have the highest levels of MD, in terms of total MD and in the four categories of MD mechanisms. Table 3 outlines the mean scores for all participants in total moral disengagement and the four categories of moral disengagement mechanisms. A one-way between-groups ANOVA was conducted to explore the impact of gamer/sports/controls on levels of MD, as measured by the Moral Disengagement Scale (MDS). The female and male participants were compared separately as previous analysis (two-way ANOVA) had revealed a significant interaction effect for gender and MD scores in previous analysis conducted, suggesting that there was a significant difference in the effect of gender on MD scores for the three gaming/sports and control groups.

There was a statistically significant difference at the $p<.01$ level in Total MD scores for the three groups of male participants [$F(2,297)= 7.9$, $p=.001$], for cognitive restructuring subscale [$F(2,297)=7.7$, $p=.001$], minimizing ones agentive role subscale [$F(2,297)=6.27$, $p=.002$], disregard negative impact of behavior subscale [$F(2,297)=3.02$, $p=.05$], and in blame/dehumanizing victims subscale. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for controls was significantly different from the sportsplayers on total MD scores, minimizing ones agentive role scores, disregard negative impact scores and dehumanizing victim's subscales. On the cognitive restructuring subscale, the mean score for male controls (M=25.53, SD=7.51) was significantly different from the male gamer (M=29.19, SD=6.66)

scores. The analysis of female scores revealed that there was not a statistically significant difference in total MD scores in gamer/sports or control groups, or in the analysis of scores on the four categories of MD mechanisms (cognitive restructuring, minimize ones agentive role, disregard/distort negative impact of harmful behavior and blame/dehumanizing victims).

Discussion

The current research explored two competitive gaming arenas to explore the relationship between moral disengagement (MD) and gaming. As recent research suggests, there may be a need for people to develop specific aggression-related cognitions to behave aggressively. The research was designed to explore levels of MD, rather than aggression levels. Moral disengagement (Bandura, 1999) may be considered an individual cognitive mechanism facilitating gamers to act in violent ways within game settings, but may also be associated with a reduction in concern for victims of such violent acts. The violent videogame players were compared to competitive team sportsplayers, as research has indicated that MD has been linked to aggressive and antisocial acts within sports (Boardley & Kavauusau, 2007), and both of these games had competitive elements. As predicted, there was a significant difference between the groups, in terms of overall MD and the four mechanisms of MD mechanisms, although the sportsplayers were more likely to endorse MD strategies than the violent videogame players in explaining aggressive acts. The exception to this was in the cognitive restructuring mechanism where violent videogame players were found to be more likely to use this mechanism. The control group was found to have the lowest levels of MD strategies, except in the minimizing one's role strategy where the violent videogame players were lowest.

In terms of explaining the process of MD in violent game play, the research provides further support for the argument that structural factors within games, rather than specific traits, may bring about a temporary cognitive change in gamers, allowing them to disengage from their moral standards. As both gaming settings were competitive, Bandura (2002) argues people that use high MD levels are less prosocial and feel less guilty over detrimental effects and conduct, and that cognitive restructuring of negative actions

is the most effective set of psychological mechanisms that allow people to disengage from moral control (Pozzoli, Gini & Vieno, 2012). However, Weaver and Lewis (2012) argue violent gamers have to suspend their own moral judgements of their actions. This can be achieved through the specific cues in the game facilitating this and/or players using moral rationalization that confirms that the game play is not real (Hartmann & Vorderer, 2010).

The results from the present study may be further evidence for this argument as violent gamers were found to be most likely to use the cognitive restructuring mechanism, in comparison to the sportsplayers, with a significant difference between the two groups. Here, players used moral justification, euphemistic comparison, and advantageous comparison to argue that the violence was morally justified and sanitize any harm caused by their conduct. This could relate to the argument that players feel less guilty when the violence they experience in their game is framed as justified (Hartmann & Vorderer, 2010), and the research indicating that players often see themselves engaged in justified violence (Smith, Lachlan & Tamborini, 2003). Shafer (2012) also found that players predominantly use cognitive restructuring mechanisms to explain behavior that is contrary to their moral beliefs, as the most common mechanism used in his experimental study by violent gaming was the argument that *"it is just a game."* A similar finding was reported by Gabbiandini et al., (2012) indicating that recency of exposure to violent videogames was significantly related to use of moral justification and advantageous comparison strategies.

An alternative explanation for gamers' use of cognitive restructuring could come from the large amount of research conducted on this genre of videogames. King, et al., (2009) note one of the difficulties with doing research in into videogames is that gamers are reluctant to become involved due to 'threat responses'. Gamers can therefore be quite defensive about their gameplay habits, due to mistrust and a threatened feeling about psychological research. It could be that this leads to gamers consciously or unconsciously underestimating the impact of gaming on people, or to the development of automated scripts regarding the impact of violent gaming as they feel a need to defend their gaming habits.

The violent gamers in the present study were found, as a group, to be least likely to use strategies that minimized one's role in the conduct, in comparison to the sportsplayers and the control group, and this difference was significant. This moral mechanism relates to the use of strategies where an individual minimizes their role and employs a diffusion of responsibility viewpoint in relation to aggressive acts. The research with sportsplayers and moral disengagement has indicated that this is a common mechanism used by these players in response to antisocial and antisocial acts that have occurred during their sports (Long et al., 2006; Corrion, 2009), and in the present study, the sportsplayers were the group that were most likely to use this mechanism. Shafer (2012) study reported similar levels of attribution with the lowest justification given by violent gamers for their conduct related to a diffusion of responsibility.

While previous research has indicated that violent gamers are likely to dehumanise others and themselves in a group and interpersonal context (Bastian, Jetten & Radke, 2012; Hartmann & Vorderer, 2010; Greitemeyer & McLatchie, 2011), gamers in the present study were less likely to use this mechanism than the sportsplayers although the difference between the two groups did not reach statistical significance. Various methods have been used to explore these mechanisms within gaming, such as ascribing personality factors (Greitemeyer & McLatchie, 2011), ascribing measures of humanness (Bastian, Jetten & Radke, 2012), and measures of guilt, affect and enjoyment (Hartmann & Vorderer, 2010).

It is impossible to overlook the role of rewards in the current research, as the reward system in both gaming and in sports may be central to the use of antisocial or aggressive acts in both fields, with points being scored for aggression in videogames, and in sports aggression often resulting in obtaining an advantage over another player. The difference between the two activities may be related to the presence of a referee or at least the standards for the games, where there is certain level of expected behavior on a pitch or within a sporting arena, and as such it was expected that the sportsplayers would utilise lower levels of moral disengagement to justify any negative behaviors. It may appear surprising therefore that the sportsplayers indicated higher levels of MD than the videogame players. However, higher moral disengagement does not indicate higher levels of aggressive behavior but rather higher levels of justifying

aggressive or antisocial behavior. In this respect it could be argued that the violent gaming do not feel the need to justify aggressive behavior, and this may be taken by some as further evidence for the desensitization hypothesis in relation to violent media. Future research may also compare the levels of aggression within both settings, as it has been argued that the actual violent content within specific games may be lower than expected (Weber, Behr, Tamborini, Rittfield and Mathiak, 2009)

This study is also the first to explore a large sample of female violent gamers and related moral disengagement. International evidence indicates that the number of females involved in video gaming is increasing, with *Entertainment Software Association* (2012) reporting that females now represent 47% of US gamers, with females aged over 18 years representing the fastest growing gamer demographic. Within the context of this increase, there is a need to explore the experiences of this group of gamers in detail. Recent research on female gamers who predominantly play violent videogames suggests that they value their gaming and the ability to be both competitive and social (McLean & Griffiths, 2013c). In the current study, it was hypothesised that female gamers would use moral disengagement strategies to a lesser extent than the male gamers and was supported (with female gamers less likely to use these strategies than male gamers). While there was little difference in mean scores for the female samples across the three groups, similar to the male scores, the female sportsplayers were more likely to endorse all of the strategies than the female gamers or control group. Previous published research, and the previous study in this thesis has argued that female gamers may develop have less identification with characters than male characters in videogames due to socialization and the development of characters in-game (Krahe & Moller, 2004; Olson et al., 2009), and this in turn could be said to lead to a reduced need for moral management strategies found in the present study. However, there was a key gender difference when male and female scores were considered separately across the three groups of participants in this study. Male sportsplayers were found to be significantly different to the control group across all moral disengagement strategies and on total moral disengagement scores, while the violent videogame gamers were significantly different to the non gamers in terms of total scores and in their use of cognitive restructuring strategies only.

In terms of limitations there were a number of issues with the participants. In terms of obtaining a comprehensive sample of competitive team sports, many sportsplayers played videogames, particularly in the male sample. The criterion employed in the research involved the random allocation of those participants that played both violent videogames and sports for the specified time, to both groups. This may have impacted on the results obtained. Recent research in the area of gaming has argued that the difficulty of obtaining a control sample of male participants who do not engage in regular game play is becoming more difficult as the number of gamers increases (McLean & Griffiths, 2013a) and the present research offers confirmation of this point.

The profile of the sportsplayers used in the present research were somewhat younger than the gamer sample and while overall there was no effect of age, there may have been a peer group effect as many of the participants completed their questionnaires in a classroom setting. The researchers were aware that the sports participants, in comparison to the other classroom settings where data collection took place, were more likely to produce spoiled questionnaires. The sports settings also produced participants who predominantly played sports and videogames, although measures were taken to overcome this and as such the researchers were confident that the sample was evenly distributed. A related limitation of the research may be the use of online and offline procedures for the collection of the data and the completion of the scales. It was felt it necessary to complete this in this way in order to appeal to people who predominantly use online methods of communication and documentation, and also in order to access a large group of female gamers. Data that are collected in an online manner can mean one can have greater confidence in the validity of data, as the disinhibiting effect of being online can lead people to respond in a more honest manner (Johnson, Paine, Buchanan & Reips, 2008). In a similar vein, Griffiths, Lewis, Ortiz de Gortari and Kuss (2014) argue that the use of online data collection can be of particular value for exploring sensitive topics. The main disadvantages of online research methods can be similar to those found with offline research, namely the possibility of sampling bias, self-selected samples, and concerns around validity.

In terms of future research, the area of violent videogame play and the use of moral disengagement strategies can be extended and built upon. Although the present study's design did not allow for testing of causality, it may be possible that long-term exposure to moral choices in games and the frequent use of such strategies during these games could result in the development of scripts for thought and behavior that are increasingly inclusive of MD (Huesmann, 1986; Huesmann & Taylor, 2006; Schafer, 2012). Here, these strategies could become habitual, translating into less moral activation in real decision-making. In line with Bandura's moral disengagement theory, people develop moral standards over time and in conjunction with the community and culture in which social relationships develop. As gaming becomes important in people's identity and lives, it may be interesting to explore gaming's impact on attitudes generally, with moral disengagement as an element of this. While the research continues into the impact of violent media on people's emotions and cognitive states, Weber, Behr, Tamborini, Rittfield and Mathiak (2009) have argued that players only spend 7% of their time in actual violent play while playing a violent videogame, it may be interesting to compare this with research in the field of sports which measures the amount of aggressive play within a particular sporting game.

Greitemyer and McLatchie (2011) argue that a spiral effect may exist where violent gaming leads to dehumanization of characters, that can lead to further aggressive behavior and can then go on to lead to further dehumanization. Further research, particularly longitudinal research, could offer some valuable insights into the possible role of moral disengagement strategies in gaming. Shafer (2012) suggests that longitudinal research in this area where players are tracked over a number of months may help to develop a greater understanding of the moral choices that players frequently make. This study adds to previous research exploring such strategies across game players and offers an interesting perspective on the use of these strategies in framing peoples' experiences as they involve themselves in acts of aggression and violence against others that it is presumed are contrary to their actual beliefs and values. The research was designed to explore moral disengagement as a possible mediator of the effect of violent video game play on attitudes towards victims. The findings suggest that this cognitive distortion may not fully explain the findings of less positive attitude towards victims that was reported by violent video game players in the previous studies in the previous studies. While future longitudinal research is needed, the consistent

finding of the use of specific moral management strategies suggests that gamers may be employing some elements of cognitive distortion techniques to explain their online behavior, but these may not be directly due to the content of the games.

Further research may also explore these cognitive mechansisms in different genre of video games, to allow for a consideration of the strategies and their potential relationship with attitudes towards victims. It could also be argued that the fact that sportsplayers, who were also involved in competitive play, were more likely to use these moral disengagement strategies may suggest that violent virtual behavior in gaming may not be as concerning as previously argued. Additional research is needed to further explore the role of any such mediators and moderators of the effect of violent game play with video game players and to consider additional risk and protective factors that may serve as both mediators and moderators of any observed effects on attitudes towards victims.

Table 7: Mean moral disengagement scores for violent video game players, sportspeople, and controls

	Violent video game players	Sportspeople	Controls
Total Moral Disengagement	69.9 (SD= 15.43)	72.14 (SD= 16.34)	66.2 (SD=14.62)
Cognitive restructuring	27.42 (SD= 6.88) *(highest)*	27.35 (SD= 7.65)	24.5 (SD= 6.51)
Minimise one's role	18.05 (SD= 4.55) *(lowest)*	19.57 (SD= 5.0)	18.47 (SD= 5.09)
Disregard negative impact	8.42 (SD= 2.49)	8.54 (SD=2.93)	7.89 (SD= 2.32)
Blame dehumanise victim	16.02 (SD=4.76)	16.67 (SD=4.78)	15.35 (SD= 4.2)

Table 8*:* Mean and standard deviation of moral disengagement scores for males and female participants across violent video gamers, sportspeople, and controls

	Female Gamers	Female Sports	Female Controls	Male Gamers	Male Sports	Male Controls
Total moral disengagement	64.15 *SD(14.96)*	67.10 *SD(13.53)*	65.81 *SD(14.02)*	73.36 *SD(14.7)*	76.32 *SD(17.34)*	66.92 *SD(15.76)*
Cognitive restructuring	24.47 *SD(6.24)*	24.64 *SD(5.5)*	23.95 *SD(5.86)*	29.19 *SD(6.66)*	29.6 *SD(8.43)*	25.53 *SD(7.51)*
Minimise one's agentive role	17.68 *SD(4.87)*	19.25 *SD(4.96)*	19.02 *SD(5.22)*	18.27 *SD(4.36)*	19.83 *SD(5.04)*	17.42 *SD(4.71)*
Disregard/distort negative impact of harmful behaviour	7.86 SD(2.38)	7.87 *SD(2.22)*	7.79 *SD(2.18)*	8.75 *SD(2.51)*	9.09 *SD(3.32)*	8.06 *SD (2.56)*
Blame/dehumanize victims	14.14 *SD(4.27)*	15.34 *SD(4.34)*	15.04 *SD(4.14)*	17.14 *SD(4.7)*	17.78 *SD(4.86)*	15.91 *SD(4.27)*

Chapter 7: Moderators and mediators of the effects of video games on player's attitudes towards victims.

This research was designed to explore, the relationship between violent video game play and attitudes towards victims. As the violent genre of games become more popular and as the graphics and content becomes more realistic and immersive, there has been concern that this media form offers a different perspective on violence than more passive forms of media (Vierra & Kracmar, 2011). Much of the research in the area of violent video game research has focused on changes in players in terms of aggressive behaviour, following exposure to these games. The present research was designed to explore attitudes towards victims of crime, any any relationship that may be associated with video game play, but also to explore any factors that may explain individual differences or facilitate the development of this relationship, with a particular emphasis on adolescents and female gamers.

This is a new area of research exploring violent video game play and attitudes towards victims of crime, which builds on the substantial research on exposure and desensitisation of players (in terms of attitudes towards violence and empathy) following exposure to these violent scenes in games. Previous research has explored empathy (Bartholow, Sestir & Davis, 2005; Carnegey, Anderson & Bushman, 2007; Funk 2003, 2004) but this is the first to explore the cognitive and affective components of attitudes towards victims of crimes. Previous research has argued that through game play children may fail to develop a thorough understanding of others perspectives (Vierra and Krcmar, 2011). In this respect, the present research can be seen to be extending the knowledge in this area, and directly exploring actual attitudes and concern for victims and particularly for victims of crime. The present research explored the possible role of cognitive distortions (moral disengagement), attributions of blame, developmental stages, gender differences, identification with game characters, and tentatively the structure of violent video games to identify possible moderators and mediators of this genre of video games on young people and adults.

Overall the results of the four studies in the current research indicated that the violent video game players reported less concern and less positive attitudes towards victims than the non-violent video game players.

These players were more likely to attribute higher levels of blame to victims and to attribute this blame to the victim's behaviour than to any other factors. In terms of exploring any cognitive moderators that may explain these affective difference between gamers and non-gamers, the research built on some of the most current research in the field and explored the mechanism of moral disengagement (Bandura, 2002). While it was found that the violent games were more likely than non-gamers to endorse moral disengagement strategies to explain aggressive acts, they were not as likely to do this as sports players, and this again adds to this new area of research in the field, and suggests that further research is needed to explore any further processes that may explain these findings.

Other mediators of the effect of video game play explored were related to levels of attribution of blame and developmental stages of players in explaining the relationship found between reported attitudes towards victims of crime and violent video game play. Study 1 explored concern towards victims of crime, with 206 young people with a mean age of 19 years. The results indicated that those with most exposure to violent video game expressed less concern for victims and this was particularly significant for two types of victims (general victims and culpable victims), and this was not due to factors such as age or gender. Gamers indicated less concern for the less serious crimes (general victims) and to those that it could be argued would be less affected by the crimes (culpable victims). In this sense, it could be argued that the research suggests further evidence for the theory of desensitisation of gamer's attitudes towards victims (Carnegey, Anderson & Busman, 2007). As with other research in the field of victim liking there was age differences observed (Menisini et al., 1997; Rigby & Slee, 1991, 1993) with older people indicating the most concern for culpable and general victims, thereby suggesting further evidence for differential effects of the media at different developmental stages. This issue will be discussed in more detail later, as it suggests a significant role of developmental stages as a possible mediator of any effect of violent video game play.

Study 2 was designed to further explore this concept of attitudes towards victims of crime, and the components of victim liking and victim blaming, and involved 50 semi-structured interviews with young people ages 12-35 years (mean age 19 years). This research is particularly significant in terms of the study of young people's attitudes towards victim of crime and the link between violent video game play

and these attitudes. Attitudes were explored in terms of victim liking, victim blaming, and victim helping, based on previous research on attitudes towards victims in nongaming research. The sample comprised of young people and young adults between the ages of 12 and 35 years, and as such represent a key cohort of young people and adults who are playing video games. As all of the violent video game participants had been playing this genre of games for at least two years and this allows for the consideration of any a correlation between long-term playing of the games and their possible effects.

The results indicated that gamers were more likely to have negative attitudes towards victims of crime similar to the finding from Study 1. Victim liking and victim blaming can be described as the affective and a cognitive component of attitudes towards victims. In terms of victim blaming there was a significant difference found between the gamers and non-gamers in terms of the levels of blame they attributed to the victims described in the vignettes, with the video gamers also more likely to attribute blame to the behaviour of the victim, to describe these victims in a negative way than the non-violent gamers..It is interesting to further consider the findings in relation to the types of victims that the gamers felt concern for or had positive attitudes towards, as it may suggest a further identification with these characters. The soldier/police group of victims are particularly relevant group of victims to consider, as it can be argued that these victims are common characters that gamers may engage with in their video game play. This increased identification did not however lead to more positive attitudes towards these victims, with the results from the study suggest that violent gamers viewed these victims in a more negative light than the non-gamers, and were more likely to blame these victims for their plight than the nonviolent gamers. This is the first study to highlight this finding. It may be that players are experiencing a feeling of self-efficacy with these characters as they often play as these game characters. Again, it would be interesting to consider future research in this area as it suggests an attitude towards a particular group of victims that may be more common amongst game players. The findings from Studies 1 and 2 can be seen to be in contrast though to previous research (Lee et al., 2012) in that the gamers in the first study did not indicate increased sympathy and concern for the culpable victims, whereas in previous research gamers have indicated more positive attitudes towards criminals.

Following on from the research by Lee et al., (2012) it could be expected that the violent gamers would have more concern for the culpable victims, as they were also victims (and criminals) in the current study, but this was not the case. The contrasting findings may be explained by the use of the younger participants in the current study, than in Lee et al., (2012) research. It is worth noting however that in Study 2 the findings were slightly different. When considering the culpable victims, the nonviolent video gamers did not have a positive attitude towards these victims, while some of the violent gamers were found to have a positive attitude towards these victims. It may be that there was mixed identification from gamers with these characters although this may not be surprising if we consider the possible confounding impact of the characters being described as both criminals and victims simultaously. Interestingly, all of the people who did not play video games indicated negative attitudes towards these victims. In order to explore these attitudes further and to develop an understanding of the mechanisms underlying these developing attitudes the research built on current research exploring cognitive distortions video game players may have or develop which may be important in allowing them to engage with aggressive media. Study 4 involved 605 college students, with three groups of participants, those that played neither violent video games, those that played team sports and a group that played neither sports nor video games. The study was designed to explore moral disengagement strategies as a mechanism of explaining aggressive and antisocial behaviour across the three groups and possibly facilitating the levels of aggressive behaviour within the video game. Richmond and Wilson (2008) have recently explored the role that cognitive distortions, such as moral disengagement, may play in making violent media more acceptable to people. The moral disengagement theory (Bandura, 1990) has been applied to video game play and claims that people who play such video games are disengaged from the reality of the violence and it is this disengagement that allows them to behave in a way that they would not do in 'normal' real world situations (Hartmann, 2009). Further to this, Klass (1990) argues that structural factors within the game are cues to the gamers to disengage from the real world, and this can justify to the gamer the level of violence so that they can *"enjoy virtual violence without moral concerns"* (Hartmann & Vorderer, 2010; p.869). In considering the disengagement potential of video games it can be argued that the playing of these games in such a way would not lead to the development of particular attitudes towards victims of crime, as the players have an awareness of the distinction between victual violence and virtual victims

and real victims of crime. As recent research in the field of sports psychology has indicated that moral disengagement strategies may be a key consideration in the use of aggressive or antisocial behaviour in the sporting arena (Corrion, Long, Smoth & d'Arripe Lougueville, 2009; Boardley & Kavussanu, 2007; Long et al., 2006) it was decided to explore these sports players with violent video game players.

As was predicted in the research the non-sports and non-violent gamer group were the least likely to endorse any of the moral disengagement strategies. The sports players were found to indicate the highest level of moral disengagement strategies, except for in one mechanism where the violent gamers were found to be more likely to use the cognitive restructuring mechanism than any of the other groups. This finding can be related to the fact that violent video gamers are often called on to defend their actions within the field of violent video game play and have been found to be quite defensive in their willingness to engage in psychological research due to possible concern about their negative portrayal in the media and in research (King, Delfabbro & Griffiths, 2010). The role of rewards in the study of violent game play and aggressive sports play cannot be overlooked also. In sports play one may use antisocial behaviour in order to get an advantage over another, whereas within violent video game the use of intermittent reward structures has been highlighted as a key motivation for gamers to play (Gentile, 2005), and will often result in a player having an advantage or even scoring points. In this sense, both types of games contain a central component of rewards.

In the current research the role of rewards may be similar in one respect with gamers and sports players, but the consequences of such behaviour in the sporting field may be more negative than in the gaming arena. In the sports field there are referees and rules for appropriate behaviour and as such, the findings that the sports players were more likely to endorse moral disengagement strategies may seem surprising. In contrast, the video gamer may be playing alone and the judgments and decisions that they make may only impact on themselves. It may be therefore that higher endorsement of moral disengagement strategies does not mean higher aggressive behaviour, but rather higher levels of justification of the aggressive and antisocial behaviour. This may be because of the real impact of the aggression of people within the sports field, which leads to players feeling the need to justify this behaviour more than the gamers. An alternative explanation for the findings may be that the violent gamers are desentised to the

violence that was described and so they did not feel the need to justify the aggressive and antisocial acts described to them. As previous research has indicated physiological, cognitive and affective desensitisation due to violent video game, this may be an interesting area to consider further.

Study 3 involved the exploration of discussions on a gaming forum for female gamers, as a method of identifying the key motivations and experiences of female gamers, who choose to play violent video games. In the initial studies of attitudes towards victims there was a gender defence observed, in terms of the relationship between violent video game play and attitudes towards victims, with male gamers reporting less positive attitudes than female gamers. Gender can therefore be seen as a possible moderator of any effect of violent game play and Study 3 was designed to explore the experiences of this group of game players in order to develop a better understanding of these gender differences. In addition, the study was designed to allow a consideration of the moderating impact of identification with game characters, as previous research has indicated that male gamers place value their identification and immersion in their game play experiences and this may be a moderating factor in any impact of game play. There is very little research completed with this group of female gamers, and as the previous studies published and in this thesis had indicated, there is a large cohort of females playing these games. The value of identification with characters and the social element of gaming were the key themes that emerged from the gamer are discussions of their experience of gaming. In terms of the importance of social element of gaming, this was found to be consistently related to the gamer's identity and to their motivation to play. This was similar to the consistent finding emerging from other research on the attraction to video game playing that relates to the role of social interaction while playing video games. In online gaming, a number of studies have indicated that social element of gaming is a key aspect of attraction to and continuing to play (e.g., Cole & Griffiths, 2007; Griffiths, Davies & Chappell, 2003; Griffiths, Davies & Chappell, 2004a; 2004b; Kaye & Bryce, 2012; Yee, 2006). Research into online gaming has mainly focused on the playing of Massively Multiplayer Online Role Playing Games (MMORPGs) (Ghuman & Griffiths, 2012). In the current research in this thesis, the findings highlighted an additional gender difference, with female games were more likely to play with people they know

online, rather than using their gaming as a way of meeting new people, as had been reported in previous research with male gamers (Hussain & Griffiths, 2008).

The female gamer's identity as a gamer was found to be of significant importance to them, and this is even though this identity may still be viewed as taboo amongst male gamers and often amongst female non-gamers. In relation to the female's identification with characters, this was found to be focused on characters that they judge to be similar to them. In this respect the role models from the media were highlighted as important to them, to the point where gamers consistently discussed taking aspects of these characters in to their lives. This is a novel finding in the area of video game research and one which has not been found with research conducted with male gamers. It offers a profile of female gamers as significantly different to male gamers in terms of their identification with game characters, and as such offers a consideration of the role of moderators of any effects of violent video game play on these gamers. It may be that gender differences that are found in attitudes towards victims may be related to the levels of identificastion that males and females have with their gaming pastime, but also with the game characters they prefer. The female gamers indicated the importance of identification for them but also a flexibility in their play which may be different to previous findings with male gamers and therefore suggest a moderating impact of violent video game on attitudes towards victims.

Gender swapping and identity swapping has been highlighted as a key function and motivation of game play with males and female games previously, and this was a common finding in the current study also with the female gamers. Interestingly though, the motivation for gender swapping with the female gamers appeared to be different to previous research consulted with male games, in that the female gamers used gender swapping as a way to avoid unwanted attention from others. Of interest in this study was the fact that the female gamers' behaviour, particularly when playing games online was in response to the behaviours of others, in that they often cited reasons for gender swapping, being quiet online, and avoiding certain games and so on, in order to avoid the attention from others.

The research from Study 3 suggests a profile of female gamers, who enjoy playing violent genre of games, which is a new area in the gaming industry research. The research suggests that these gamers have

a flexible approach to playing and that their gaming activities are easily integrated into their lives, similar to research with female causal gamers (Lewis & Griffiths, 2012) but perhaps different to research conducted predominantly with male gamers of a similar genre of games.

Implications of these studies to the psychological literature on video games

This is a new area of research for the video games field, as it directly explores attitudes towards victims of crime. The research is building on research linking violent media to desensitisation effects and also recent research indicating a link between violent video games and reduced ability to develop understanding of others perspectives (Vierra & Krcmar, 2011), and an increase in positive attitudes towards criminals and violence (Lee et al., 2011). The research employed new methods of exploring the concepts of attitudes towards victims, using scales and also specifically designed vignettes that have not been used in this area of research before and so this offers a new possible method of exploring this area further in the future.

The research offers a new profile of female gamers, who are predominantly playing violent video games that in the past has been solely explored in relation to male gamers. This female profile can be seen to be similar to male gamer profiles in some aspects (for example in relation to the importance of gaming), while appearing different in other key aspects (identification with characters and in the value of social elements of gaming). The profile can be seen to be similar to recent research on casual gamers (Lewis & Griffiths, 2012) in relation to their ability and need to engage in gaming on a flexible and adaptive basis.

Gentile, Lynch, Linder and Walsh (2004) have argued that an additive effect is important to understand the effect of violent video game exposure, rather than just exploring the effect as due to one factor. In this respect, the current research was conducted to explore any relationship that may exist between volent video game play and attitudes towards victims of crime, but also to explore any individual or game chacteristics that may explain how this relationship can develop. The possible impact and role of developmental stages of the player, the gender of the player, the individual characteristics of the players, their level of immersion and identification with the game and its characters and any cognitive distortions employed during game play were explored. The stage of development of the participants and the role of

cognitive distortions were considered as a mediator of any effects observed, indicating a possible mechanism for the development for less positive attitudes towards victims. Gender of players and their identification with characters in game play (and immersion in the play) were considered as moderators of any effects of game play that could explain individual differences in attitudes towards victims.

Developmental stages

The research in this thesis was conducted with young people and adults and the concept of attitudes towards victims was explored in relation to different age groups across the three correlational studies. There were developmental differences apparent in participants' expression of concern for different types of victims of crime in Study 1. The research was therefore similar to general victim research that has been found to indicate that concern for victim's increases with age, but that victim liking decreases for age and this is particularly relevant during adolescence (Gini et al., 2007; Menisini et al., 1997; Rigby & Slee, 1991, 1993). This finding may be particularly relevant when we consider: (i) the high numbers of adolescents that are playing video games, and (ii) if we accept adolescence is a key time of identity and attitude formation for young people (e.g. Erikson, 1968). Researchers have argued that the media offers adolescents significant role models to explore their possible selves (Griffiths, Davies & Chappell, 2004a, 2004b; Osyerman, Bybee, Terry, Hart-Johnston, 2004), and, as such, video games may be a platform for this exploration with. Huesman (2010) has argued that the mass media represents a fundamental global change on child rearing over the past twenty years, as it an important socialiser of children and as such it is imperative that we understand its role fully in children's lives.

The current research is therefore of particular interest if considered in relation to the research on developmental exposure to games. Dubow, Huesmann and Greenwood (2006) argued that cognitive changes in middle childhood may make children more active processors of media messages and more receptive to these messages, while Bushmann and Huesmann (2006) suggest that the long-term effects of media violence may be stronger for children than for adults, as these children are developing cognitive schemas and scripts for the world. Researchers have argued that in order to fully explore the possible

impact of violent video games, it is imperative to consider the age of players initial exposure to violent media (Hopf, Huber & Weif, 2008)..

Research on females during adolescence has highlighted the impact of media role models on female's attitudes and perceptions of themselves and others (see, for example, Grabe, Shibley Hyde & Ward, 2008). In this respect, the current research has highlighted the impact of a new form of role models, namely gaming characters on female gamers, and as such this may be an important element of future research. In Study 3 the female gamers highlighted the value they placed on identification with realistic game characters, but also discussed the adopting of elements of the characters into their own lives, despite the fact that these characters were at times stereotypical representations of female characters. The current research did not explore this in great detail and so more research may be needed to explore these concepts further.

What must be highlighted in the current research with male adolescent gamers is the difficulty of finding young adolescent males who do not play these games and as such with such high numbers of male adolescent gamers it can be further argued that we cannot overlook this important development in entertainment in young people's lives in the present day. While there is a vast array of research conducted with adults and adolescents, with increasing numbers of adolescent gamers internationally, the need for contemporary research in the field cannot be overlooked. In terms of adolescents attraction to violent video games, Konnijin, Bijvank and Bushman (2004) have argued that violent video game characters are usually in control and this may be a key attraction to adolescents, while other research has suggested that the risk-taking in game play is thrilling for adolescents (Slater et al., 2003) and that the games offer a safe and acceptable avenue for adolescents to seek arousal and adventure seeking (Olsen et al., 2008). Taken together with the ability to explore different identities and possible selves, the positive impact of the games in adolescents cannot be overlooked, and as such there appears to be a need to continue to develop research in this area.

Game structure

Whilst not actively explored in this thesis, the research on the structure of violent video game play has suggested that it may be important in explaining why people start to play these games, what motivates them to continue to play, but also why they become addicted or develop problematic video game usage (Griffiths, 2009). Researchers have argued that violent video game play leads to behavioural, but also emotional and cognitive changes, due to the nature of the games and the structures built into the games, such as the reward systems, the level of blood in the game, the portrayal of the characters and so on. Hopf, Hubert and Weib (2008) have argued that the stimulated real experience of aggressive emotion experienced while playing violent video games are core factors in violence later in life, although Ferguson, Miguel and Hartley (2009) dispute this link, instead suggesting their research does not indicate that exposer to violent video games is not a predictor of aggression. It is interesting to consider the research put forward by Hopf, Hubert and Weib (2008) in relation to the current findings, as they relate specifically to cognitive and emotional changes, that can be seen in people's attitudes towards victims and also in relation to moral disengagement, while a large amount of previous research has explored the impact of the violent media on aggressive behaviour.

In relation to the research conducted within this thesis, researchers have recently argued that the plots and storylines in games are now using moral disengagement decisions as a key method of decision making and plot line in games. In this respect, there is a requirement of gamers to make moral choices within their gaming (Sicart, 2009; Shafer, 2012; Weaver & Lewis, 2012; Zagal, 2009). Others have argued that the structures of video games ensures that depersonalisation of characters occurs in the game play (Bastian & Haaslam, 2012; Greitemyer & McLatchie, 2011; Hartmann & Vorderer, 2010). This again is of interest in explaining the current findings with male gamers, in that the violent video game players indicated less concern for victims than the non-players.

In terms of explaining the process of moral disengagement in violent video game play, the research suggests that structural factors within games, rather than specific traits of people may bring about a temporary cognitive change in the gamers in order to allow them to disengage from their moral standards (Klimmit, Weaver & Lewis, 2012; Schafer, 2012) and the present research from Chapter 4 can be seen as further evidence of this. Both types of competitive game play (sports and violent video game play) were

associated with higher levels of moral disengagement than in the groups that did not play competitive games, and this was true for males and female participants. The findings may also be seen to add to the research on competive game play, with Vorderer, Hartmann & Klimmit (2003) suggesting that competition is a key element of players entertainment experience in video game play and others arguing that the competitive element of video game play, rather than any violent content may have the greatest influence on aggressive behaviour (Addachi & Willoughby, 2011).

Weaver and Lewis (2012) have argued that in violent video games the players have to suspend their own moral judgements of their actions, and this may be particularly interesting to the study of attitides towards victims. This can be achieved through the specific cues in the game facilitating this and/or players using moral rationalisation that confirms that the game play is not real (Hartmann & Vorderer, 2010). The results from Study 4 may be seen as further evidence for this argument as the violent gamers were found to be most likely to use the cognitive restructuring mechanism, in comparison to the sports players, with a significant difference between the two groups. In this sense, the players would be using moral justification, euphemistic comparison, and advantageous comparison to argue that the violence was morally justified and sanitise any harm caused by their conduct. This could relate to the argument that players feel less guilty when the violence they experience in their game is framed as justified (Hartmann & Vorderer, 2010), and the research indicating that players often see themselves engaged in justified violence (Smith, Lachlan & Tamborini, 2003). Shafer (2012) has also found that players predominantly use cognitive restructuring mechanisms to explain behaviour that is contrary to their moral beliefs, as the most common mechanism used in his experimental study by violent gamers was the argument that *"it is just a game".*

Analyses from Study 4, does suggest that video game players are using moral disengagement strategies and in particular cognitive restructuring strategies in their game play. Further research may explore the structures within video game structures that may allow moral disengagement to occur (for example rewarding aggressive behaviour, competition). This may be of particular relevance as it was found in the current research that competitive sports players were more likely to endorse moral disengagement strategies, than violent game players, and it would be interesting to explore the similarities between video

game play and completive sports in more detail to understand the moral disengagement mechanisms used.

Individual characteristics

Previous research has explored the association between personality characteristic (neuroticism, psychoticism, trait anger, etc) and aggressive behaviour, cognition and affect and video game play (egg. Unsworth, Devilly, Ward, 2007). In relation to victim helping in bullying research, it has found victim liking to be linked to holding anti bullying attitudes (Salmivalli & Voeten, 2004), empathy (Caravita et al., 2009; Gini et al., 2007; Warden & MacKinnon, 2003) and levels of high self-efficacy (Poyhonen & Salmivalli, 2008). The current research did not explore specific personality characteristics directly, although it can be argued that some people may be high in a moral disengagement trait (Bandura, 2002) and this could explain the moral disengagement found amongst the sports and the violent game players in Study 4.

Any causal relationship in the current research must be taken tentatively as the direction of the relationship cannot be confirmed. In this respect the video game players may be attracted to video games because of the attitudes that they hold towards victims, rather than the attitudes being brought about by the playing of the games. The current research aimed to overcome some of these shortcomings through the use of a mixed methods approach to the data collection and this is particularly evident in Study 1 and Study 2 where the quantitative study was complemented by an in-depth qualitative exploration of gamer's attitudes towards victims in Study 2. Nonetheless, the possible impact of individual characteristics of players was not considered and this would need to be explored in future research.

The research findings can be seen to add to the research on the effects of violent video game play, where exposure to this form of media is seen as one risk factor for the development of specific behaviour, or in this case in the development of specific attitudes towards victims. Researchers have argued that exposure to violent media may exacerbate or reinforce aggressive behaviour, feelings and cognitions that the players already exhibit (Sigurdson et al., 2006). Previous research has highlighted the need to understand and explore the persons internal state, as well as their violent game play (Sigurdsson, Gudjonsson,

Bragason, Kristjansdottir, & Sigfusdottir, 2006; Unsworth, Devilly & Ward, 2007). More recent research in a similar vein (Gretimeyer & McLatchie, 2011) has also argued for such a spiral effect, where violent video game play leads to dehumanization of characters and others, that can lead to further aggressive behaviour and violent media exposure and this leads to further dehumanization. In this respect, the current research findings can be interpreted to suggest that the violent game play of the players were likely to increase some of the negative attitudes that players already had towards victims.

Identification and immersion in game play

The importance of character identification has been highlighted in previous research with male and female gamers (Griffiths, Davies & Chappell, 2003, 2004a).

Klimmit, Hefner & Vorderer, 2009) and the current research was one of the main themes in the research on female gamers. The female gamers in Study 3 were very clear in their desire to identify with video game characters, and the desire they had to play with realistic characters, that is similar to previous research with male gamers (Anderson et al., 2010, Fischer, Kastenmuller, & Greitemeyer, 2010; Konijn, Bijvank, & Bushman, 2007) and female casual gamers (Lewis & Griffiths, 2013). Researchers have argued that the ability to identify with a character and to develop an attachment to this character allows for a greater immersion whilst playing (King, Delfrabbo & Griffiths, 2010). It can be argued that the ability to personalise a character can encourage greater identification with the character, a finding that the gaming industry is eager to encourage in more recent games (Klimmt, Hefner & Vorderer, 2009). The use of personalised characters in video games is therefore becoming more common with many games encouraging players to try out different types of characters.

In relation to research on female characters in video games Dill, Brown and Collins (2008) have also argued that stereotypical characters and content in video games indicate that the majority of the top selling video games are violent games with stereotypical content (Anderson et al., 2007; Dill, Gentile, Richter, & Dill, 2005) and often portray women in a stereotypical manner (Beasley & Standley, 2002; Dietz, 1998; Janz & Martis, 2007). It has been argued that this stereotypical portrayal of female characters can be the

reason why fewer females are attracted to playing video games (Lucas & Sherry, 2004; Ivory, 2006). Interestingly, in contrast to this argument the current research suggests that for some female gamers at least, they value the escape that they can obtain from playing a game with a stereotypical character, and feel this is a common motivation for them to play as certain characters, as it allows them a chance to escape. This may be similar to previous research indicating that male and female players value the immersion and time loss while playing video games that is perceived by gamers as a positive benefit of gaming that allowed them to fully relax (e.g., Snodgrass, Lacy, Denagh, Fagan & Most, 2011; Wood, Griffiths & Parke 2007).

Identification of gamers with video game characters was also apparent not only in Study 3, but also in the finding in Study 2, with gamer's apparent identification with police and soldier characters having an impact on their attitudes towards these characters when they became victims of crime. The gamers were more likely than the non-gamers to criticise the police/soldiers for not defending themselves sufficiently or being inept at their jobs. This, it could be argued can be seen as further evidence of the gamers identifying with common characters within the games they are playing. Any discussion of identification of gamers with characters within the games is seen as particularly relevant according to some researchers such as Bijvank and Bushman (2007) who argue that it is the identification with characters in a virtual world that can influence adolescents to behave more aggressively against each other in the real world.

Strengths and limitations of study, future research and implications for industry and parents

The research involved a large group of adolescents, as a sub group of the larger sample of participants (12-35 years) as such includes a focus on young people that policy makers are directly interested in focusing on when considering the impact media may have. The results suggest overall that violent video game play may be associated with decreased affective and cognitive elements of attitudes towards victims in young people, with the violent game players more likely to report less positive attitudes towards victims of crime. Parents and policy makers are particularly interested in the impact of media and different forms of media on young people in particular. The current research was designed to explore any

factors related to game play that may explain an effect of violent video game play, and to highlight any factors that may explain individual differences in such an effect within game players. The mediators in the current study that may explain the process by which an effect of violent gaming would occur were cognitive distortions and the developmental stages of gamers. The findings suggested that violent video game players were likely to report higher levels of attribution of blame to victims of crime and to endorse moral disengagement strategies than non-gamers. The studies consistently indicated developmental differences in attitudes towards victims, with adolescents more likely to report less positive attitudes towards victims, than older participants.

In terms of explaining individual differences in the effect of video game play, the research explored gender differences and identification with game characters. Throughout the three studies exploring attitudes towards victims directly, gender differences were observed with female gamers more likely to report positive attitudes towards victims, than male gamers. Klimmit, Hefner and Vorderer (2009) propose that during media exposure, users will adopt elements of the perceived identity of the target character and temporarily at least perceive or imagine themselves to actually be the media character. In the present study with female gamers, identification with characters was reflected in gamers' interests in taking elements of characters into their lives, despite a mixed view on the stereotypical characters found in video games. The female gamers highlighted identification with characters physically and in terms of personality characteristics, that allowed them to immerse themselves in their game play, but also to transfer elements of the game and characters to their own life, but with a degree of flexibility which may suggest that identification within gaming could act as a moderator of any relationship between game play and attitudes towards victims.

Study 3 specifically focused on a particular group of female gamers (that choose to play violent video games) experience and motivations to play this genre of games. In this sense the research offers key information to the video game industry on a group of gamers whose numbers are increasing internationally. These female gamers value their identity as a gamer and a space outside of actual gaming

(such as discussion forums) was also important for female gamers to discuss their gaming. This may be related to the fact that many of the gamers did not have any female close friends who also were gamers, and often the people they played with were male family members or partners. Interestingly however, female gamers did not feel that they could benefit from the online spaces that male gamers used.

Female gamers repeatedly referred to the negative experience they had while gaming online, and while in the majority of the cases this has not stopped them from playing it does have an impact on their gaming behaviour, in terms of how and who they play with. The female gamers were more likely to play with people they know and therefore less likely to make friends online. Realistic characters were important for gamers, but some also value the escape that comes with playing with stereotypical players, and in this respect the value of escape was highlighted by female gamers in their gaming habits. The gaming industry could therefore consider the need for realistic and unrealistic characters for the enjoyment of all players. Involvement in game play and identification with characters is of high importance to female gamers, and this is highlighted as a key reason for gaming (as they identify with aspects of the characters) but they are also taking elements of the characters back into their own lives. In Study 2, it could be argued that the identification of gamers with characters was also highlighted as the gamers had less positive attitudes towards police and soldier victims, with many highlighting this in their belief that these victims should have done more or known better because of their jobs. As these are characters that it could be argued the gamers are engaging with frequently in the video games, it could be argued that they identify with these characters as they play as soldiers or police officers. This research therefore can be seen to highlight the impact of role models in the media for gamers (males and females) and this can be seen in Study 2 and Study 3, in addition to exploring identification of gamers with characters.

The current research therefore appears to offer some insight into gamer's motivation to play and engage in gaming. In the case of adolescents, the research suggests that there is only a very small cohort of male adolescents who do not play video game. Previous research has identified the use of gaming for escape, identity formation, social reasons and it was apparent from the present research that for female gamers all of these factors were important motivations for playing video games. The research also adds to recent research exploring the possible role of cognitive distortions in video gaming, with the exploration of

moral disengagement in players. The comparison of violent video game players with sports players (who have also been found to employ this cognitive distortion in their play) is of significance as it again offers a new way forward for this area of research. While the violent game players were more likely than the non-gamers and sports players to endorse moral disengagement strategies to explain negative behaviour, the sports players were found to be more likely to do so. This was a surprising finding and is of particular relevance and future research is needed to explore this further and the possible reasons for the finding. The impact of others and playing within a team environment, the impact of rewards and punishment and the difference between virtual and real time play may all have a role in explaining these findings.

In terms of limitations of the studies, there was reliance within the research on self-report scales and this was particularly relevant in Studies 1 and 4. Study 1 used Victim Concern Scale (Clemments et al., 2006) and Study 4 used the Moral Disengagement Scale (Bandura, 2002). Both of the scales were modified for use within the cultural realm that they were used for and were modified for use with young people and adults. The research employed a study that was correlational in nature and as such the direct causation cannot be identified, or the direction of the relationship observed. The present research in the area of victim blame and victim helping involves scales used to measure children and young people's attitudes towards victims of bullying, as there is no current scale designed to measure attitudes towards victims of crime.

In Study 2 vignettes were used that were based on real life events, and while every effort was taken to ensure that these were as similar to scenes from violent video games as possible, it could be argued that the scenes may be too realistic. In addition, the scales used in Study 2 were based on bullying and research on attitudes towards victims generally. It has been argued also that story stems and vignettes can only describe the person's attitude towards that particular vignette or story/character and thus it can be hard to generalise to victims generally and this may be particularly relevant in Study 2 (Gumetti & Markey, 2007). Study 3 can be criticised for using one discussion forum only and it can be argued that the results may include male participants who were pretending to be female gamers, although every effort was made to ensure that the research included only female gamers. The study involved a specific group

of female gamers who accessed and used online discussion forums and as such it could be argued may represent a particular cohort of gamers, rather than being representative of female gamers overall.

Overall previous research has highlighted the defensiveness amongst children (Funk et al., 2006) and adults (King, Delfabbro & Griffiths, 2009) to participate in research on gaming, and this was a finding for some people within this research. In this sense it could be argued that a certain demographic of gamers are not included in the current research, although it is anticipated that through the use of different data collection methods and samples of participants this may overcome some of these possible limitations.

In terms of strengths of the research, this research was designed to add to the research and knowledge on attitudes towards victims of crime in young people. In Studies 1 and 2, the study explored developmental aspects of the exposure to violent video games and this was particularly relevant as the research did not focus only on college aged students. Study 2 also attempted to explore the concept of attitudes towards victims in more detail, through the use of open questions, and to combine this with scales measuring victim liking and victim blaming. Study 3 involved the collection of data online and it has been argued (Griffiths et al., 2013) that this is a method that allows the development of new insights into gaming that are unavailable with other methods of research.

Much criticism of research on violent video games is related to the fact that it is often completed with college students, as the generalisability of findings with this particular group of students may not be possible (Gumetti & Markey, 2007). Therefore, the present study attempted to address some of this criticism of research on video games by employing a mix of students used, in second level, in youth services, and in third level institutions with an aim of including non-traditional student's as well as traditional students. However, as the study involved self-selection, participants who chose not to participants may represent a particular cohort of young people and adults for whom the present results cannot be generalised to.

Overall, the research offers a study of female gamers under four different areas and this is an interesting addition to the field of knowledge on gaming. The research offers new insight into gender differences in attitudes towards victims, moral disengagement and in violent video game play motivation and

experience. This is one of the first pieces of research to explore female gamer's attitudes and experiences, amongst a group who are choosing to play violent video games, and as such offers an interesting contrast to previous research on female gamers who are playing other genre of games.

The four studies in this thesis are seen to build on key research in the field of video game knowledge, but also to develop organically from each other, and to allow a triangulation approach of different methods to explore the constructs thoroughly. In this respect, Study 2 develops as a way of exploring attitudes towards victims in more detail and Study 4 explores the concept of cognitive distortions that may develop amongst gamers as a means of explaining gamers less positive attitudes towards victims of crime (as observed in Study 1 and Study 2). Study 4 addresses a lack of research in the area of female gamers, and offers a way to explore a particular group of gamers who are playing violent genre of games.

Throughout the research there was an emphasis on exploring the attitudes of gamers towards victims of crime in real life and the methods used within the studies were chosen specifically to represent these victims. In Study 2 the use of vignettes mirrored real scenes from video games, but were chosen as they represented real life acts that had occurred while in Study 4 the statements that the gamers were asked to endorse in Study 4 were based on aggression that is observed in society, rather than of aggression portrayed within a video game setting.

The studies involved the use of scales and methods that have not been used in the area of video game research before and as such it is hoped that they offer an interesting and possible way forward for exploring attitudes towards victims and violent video game play. The use of vignettes in the current study may be an interesting way forward for exploring these concepts and exposure to violent scenes, as it allows for the use of real life scenes and offences, thereby increasing confidence in findings.

In terms of future research in the area, a number of different areas can be highlighted as important extensions from the results found in the current research. Study 1 explored concern for victims, however these were victims who were adults rather than peers. Future research could explore this concept further to explore if gamers had a less positive attitude towards victims who were peers, as Rigby and Slee (1993) found that students were more likely to be motivated to help individuals that they feel sympathy

and empathy towards. Vierra and Kramar (2011) argue that violent video games may result in young people developing less affective attitudes towards others, due to the structure of games. In Study 2, it was difficult to explore helping behaviour amongst the young people in particular, and they often misunderstood the concept. Bushman and Anderson (2007) have explored this area with adults in an experimental study and it would be interesting to explore this further with young people. The exploration of moral disengagement in violent video game play can be linked directly to recent research on moral choices that gamers will be asked to make in their video game play (Weaver & Lewis, 2012) and that the gaming industry are keen to develop in their gaming storylines. In this respect a greater understanding of moral disengagement in game play is needed, following on from the initial findings in the current research.

Contribution to theory

The role of cognitive processes in gaming

The research focused on the possible role of cognitive processes in explaining how less positive attitudes towards victims of crime may be related to exposure to violent video game play. While much of the research in this area of study has been related to developing an understanding of the link between aggression and video game play, researchers have also been interested in various cognitive process that people may engage with in order to allow virtual aggression, and if there exists a need for people to develop specific aggression related cognitions to behave aggressively in a virtual setting. This is particularly relevant in the light of research indicating that gamers often treat video game violence in a similar way to real world violence (Weaver & Lewis, 2012), or use real world strategies in video game play and feel personally responsible for the actions they take within their game play (Bastian, Hartmann & Vorderer, 2010; Jetten & Radke, 2012; Sicart, 2009). In this respect, the current research explored a number of particular cognitive processes that may be a result of gaming, or necessary to develop in order to allow gamers to engage with violent video games and may result in a less negative attitude towards victims of crime. These possible mediators of the effect of video game play were related to cognitive distortions such as attribution of blame and moral disengagement strategies. The research was designed

therefore to build on relevant research within the field of victimology, where research has explored the key concepts such as victim blaming, liking and helping in relation to victims of crime. As the research was also designed to explore developmental differences and changes across development, the research focused on relevant findings from the area of bullying research and the victim research within this area. It is interesting therefore to consider these possible cognitive biases in relation to attitudes towards victims, as indicated by the gamers who played violent video games. The studies indicated that gamers were more likely than nongamers to use particular moral disengagement strategies to justify aggressive or antisocial behaviour and were more likely to attribute blame to victims of crime than nongamers. This finding is relevant to both male and female gamers, across different age groups.

Attribution of blame

In Study 1, the gamers indicated less concern for less serious crime and this was also true with gamers in Study 2. In Study 2 the violent gamers attributed more blame to the victims than the non-violent gamers and were more likely to attribute the blame to the victim's behaviour (rather than to the perpetrator or the environment). The Fundamental Attribution Theory (Jones, 1979) would argue that we are more likely to attribute blame to dispositional causes than situational ones, and this may play a role in the current research, although there was a significant difference between the gamers and non-gamers and so it cannot explain the findings fully. The defensive attribution theory (Shaver, 1970) may be considered salient however, particularly when considering the levels of attribution of blame in the culpable and in police/soldier vignettes, with the participants frequently referring to the victims past behaviour to explain why this incident had occurred for the victim. This was not found in the other scenarios. It can be argued that defence mechanisms were used as a cause of attribution of blame to particular victims. This can be seem therefore in Study 1 where there was less concern reported by gamers for particular victims, who may not be believed to be as affected by the crimes (general victims and culpable victims). This argument may have has particular relevance not only for researchers but also for policy makers and society as a whole when we consider the amount of young people that are engaging with these games on a regular basis throughout childhood and adolescence. As the violent game players were found to be more likely to

report higher attribution of blame to victims this may be of interest in the study of bullying, particularly in adolescence as this group were more likely to report a less positive attitude towards victims, than adults, and as such it may impact on adolescents understanding of a victims plight and their behaviour towards that person.

Moral Disengagement

Recent research has explored cognitive distortions such as dehumanising of victims and of one's self as a possible mechanism used in violent video game play (Bastian, Gretiemeyer, & McLatchie, 2011; Jetten & Radke, 2012; Klimmit et al., 2006). Study 4 adds to the recent research exploring moral disengagement in video game play (e.g. Gabbiandini et al., 2013) but is the first study to explore the four mechanisms of moral disengagement strategies with both male and female violent video game players, and other competitive players. As such the results offer an initial exploration of the different possible explanations for enjoyment of cyber-violence within a computer game setting. Whilst the study was designed to explore if Bandura's theory of Moral Disengagement (1991; 2001) could provide a useful framework for understanding the willingness/ability to engage in virtual violence, it also allowed for an exploration of moral disengagement in comparison to another group that previous research has indicated can lead to high levels of moral disengagement to explain aggressive and antisocial behaviour in the sports field (competitive gamers).

The results of Study 4 suggest that violent video game players were less likely to use moral disengagement than the sports players and this is an interesting finding for the area of video game research. The results suggested that the video gamers were using certain moral disengagement strategies in greater numbers than the sports players (cognitive restructuring), but were less likely to use the other methods. The gamers were however more likely to support moral disengagement strategies, in

comparison to the non-gamers and the non-sports players. This finding was consistent for all of the moral disengagement strategies, except for the minimize ones role strategies, where the gamers were found to be the lowest group.

In contrast to previous research that indicated that gamers may employ dehumanisation moral disengagement mechanisms as a process of removing themselves from the violence they experience in video games (Bastian, Jetten & Radke, 2012; Bastian, Greitemeyer & McLatchie, 2011; Haslam, Loughnan, Reynolds & Wilson, 2007), the present research did not suggest that this was as common amongst gamers, as might be expected. Gamers were more likely than non-gamers to endorse dehumanisation statement, but were less likely than sports players to do this. As this was the first research to explore the use of the four moral disengagement strategies with violent gamers, more research and exploration of these strategies is needed. However, the gamers were found to be more likely to use cognitive restructuring strategies to explain aggressive and antisocial behaviour, across the four moral disengagement strategies. This finding may be seen to be further evidence for the argument that any guilt induced by playing violent video games can affect the player's enjoyment of the game, and so the use of justification of the violence as necessary may overcome this difficulty for players (Hartmann & Vorderer, 2012; Smith Lachlan & Tamborini, 2003). Similar to the current findings, Shafer (2012) has also found that players predominantly use cognitive restructuring mechanisms to explain behaviour that is contrary to their moral beliefs, as the most common mechanism used in his experimental study by violent gamers was the argument that *"it is just a game"*. It is interesting to note however that higher moral disengagement scores does not indicate that people are more likely to be aggressive, but rather that they used more ways of justifying the aggressive or antisocial behaviour. As discussed previously, the results may suggest further evidence for the argument that video games can lead to desentisation and that gamers do not feel the need therefore to justify the antisocial or aggressive behaviour.

Gender Differences

Throughout this thesis, gender has been explored as a possible moderator of the relationship between of violent video game play and attitudes towards victims, and the results consistently suggested a gender

difference in terms of attitudes explored in all of the studies. In order to explore this moderator further and consider the impact of identification and immersion in violent video game play as a further moderator of the effect, Study 3 was designed to specifically explore the experience of this sub group of gamers. The research offered a profile of female gamers who choose to play violent genre of video games, and suggested a key role for gaming in these gamer's lives, but also represented a flexible approach to their gaming. The female gamers were significantly different to the male gamers in terms of attitudes towards victims of crime in all of the three studies conducted,as was expected. This was an expected finding, given that the research has consistently shown that females have higher levels of empathy than males (Toussaint & Webb, 2005). In Study 4 the sports female players were found to use the highest level of four moral disengagement strategies in comparison to the control and the gamers group. However, the moral disengagement mechanisms used by the female gamers in Study 4 did not match those used by the male gamers, and as such suggests another key difference between male and female gamers. This may be related to the motivations and experiences of female gamers of playing this genre of video games, or may be seen to be related to the design of the games or the socialisation of females within society where gaming is becoming a more socially acceptable past-time for females, but is still perhaps not as accepted as it is for males. As noted previously there was a consistent uneven gender split in participants across the studies and this was often because of the difficulty of finding young male participants who did not play this genre of games, as well as finding female participants who did play these games. It appears that while the demographics are changing, there still exists a gender difference in the gaming habits of young people.

. The female gamers were similar to the male gamers in terms of the value they placed on gaming to allow them to relax and to socialise and in the value they placed on identification with characters. But there were key differences in their flexibility of play and the way that they socialised within their gaming, and the type of identification they had with the characters. The female gamers' valued their identity as gamers, and this was further highlighted by the reported frustration they feel with the inability to choice female characters in games. Paradoxically, in contrast to this interest in and adoption of a gaming identity, the gamers often felt the need to hide their identity when gaming online, due to the behaviour of

other male (and sometimes female) gamers. The importance of the social element of gaming for female gamers was a central feature in the study, related to both identity and motivation to play, that is a consistent finding in previous research (Cole & Griffiths, 2007; Hartmann & Klimmt, 2006, Yee, 2006; Hussain & Griffiths, 2008; Klimmt, Schmid & Orthman 2009). The female gamers also highlighted the peripheral communication that occurred outside of actual gaming (for example, in the sharing of gaming experiences with significant people in their lives and meeting likeminded people on discussion forums). In this respect it could be argued that key differences in identification with game characters, and immersion in video game play may be a moderating effect of violent game play on male and female players, and suggest an explanation for differences in effect of such game play on attitudes towards victims of crime.

General Aggression Model

Barlett and Anderson (2013; p.15) argue *"What the media portray and teach is likely to determine what attitudes, beliefs, and behaviour(s) get learned".* In this respect the findings from the current research can be seen to be further evidence for the General Learning Model (Buckley & Anderson, 2006; Gentile et al., 2009; Swing & Anderson 2008), that is an extension of the General Aggression Model (Anderson & Bushman, 2002). While the General Aggression Model has been used to predict how exposure to aggression related stimulus (such as violent media), the model argues that long-term attitudes and knowledge structures are formed with exposure to any type of media. In this respect the theory can explain the development of specific attitudes towards victims of crime, following explore to violent video game play as was indicted in the current studies. In GLM, repeated practice and learning with the media results in the formation of three different processes, the development of cognitive constructs, cognitive emotional constructs (attitudes and beliefs) and emotional constructs. In this respect, the current research findings would suggest that repeated exposure of gamers to the violence in the video games has resulted in changes in their attitudes towards victims. Interestingly, Gentile et al., (2009) further argue that these constructs outlined in GLM have been predicted to be related to the development of or changes in one's

personality. In this respect the current findings would suggest that exposure to violent video game play could lead to long-term changes in the individual.

Conclusion

In exploring the effects of video games, and particularly violent video games on gamers, it can be useful to study this from a moderator and mediator perspective, where the mediators of the effect can be related to explaining how violent video games may have an effect on the individual, while moderators may explain individual differences in the effects observed in gamers. Much of the research in the area of video game research has explored these concepts individually, but the current research was designed to explore these concepts in unison, with a view to developing a greater understanding of any link that may exist between violent video game play and attitudes towards victims. In this respect, the mediators of the effects that were explored related to the structure of video games, developmental stages and the cognitive distortions that may result as a result or as a prerequisite for playing these games. The moderators that the research explored related to the motivations of players to engage, gender and involvement and immersion in game play. Hopf, Huber and Weif (2008) have argued that violent media is one risk factor for the development of antisocial and violent behaviour later in life. All of these moderators and mediators are important to develop and allow for an appreciation of the protective factors that can be important in a person's life, and to help to overcome any possible risks in a person's life. The current research can be seen to add to this knowledge and to consider the impact of such video game play on individuals. While the research indicated that gamers who played violent video games were more likely to report less positive attitudes towards victims than non-gamers, gender may be considered a moderator of this effect, and this may be related to the lower levels of identification of female gamers with game characters, and the flexibility in their game play.

Recently, the argument has been put forward that there is a need for maximising the positive effects of gaming while simultaneously minimising any harm that such gaming could be related to (Prot et al., 2012). Researchers agree that video games are important in people's lives and offer a key learning

medium. Similarly, Gentile (2011) has suggested that by recognising the fact that games are comprised of key dimensions allows us to recognise possible positive and negative impact of video games. Therefore, the current research could be seen to contribute to the argument that the time has passed to deny any potential benefits that video gaming offers and the attraction that exists to gaming, and instead to recognise any potential risks to gamers and to work within this framework when considering the impact and role of gaming within society now and in the future. The finding from the current research suggest that there is also a need to consider the impact of gaming not only on behavioural habits, but also on affective and cognitive changes. In terms of explaining the effect of violent video game play on attitudes towards victims, a consideration of the mediators of such an effect may offer a more positive focus on the area of study. In the current research less positive attitudes towards victims may be related to higher attribution of blame to victims of crime, and to use moral disengagement strategies to facilitate game play and reduce any possible cognitive dissonance felt. However, it is interesting to consider further moderators and their comparison to other similar groups, such as sportsplayers in the current research. While the gamers were likely to endorse moral disengagement strategies, it is particularly noteworthy that in a group engaged in "acceptable" levels of aggressive play (competive sports players) levels of moral disengagement was higher than in the violent video game play. This may indicate that such moral disengagement is not necessary for gamers to engage in virtual violence and may suggest that the gamers are aware of the virtual nature of this violence. It appears that future research is needed to continue to explore the nature of such effects observed in relation to video game play and far from *"nailing the coffin shut"* (Huesmann, 2010) on the research on violent video game effects, it appears that there is a need to engage in comprehensive consideration of the amount, type, and consequences of game play, while allowing for an appreciation of the benefits of game playing within a technologically changing society.

References

Adachi, P.J. & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behaviour: Which characteristic has the greatest influence? *Psychology of Violence, 4,* 259-274.

Adachi, P. J. C., & Willoughby, T. (2013). More than just fun and games: The longitudinal relationships between strategic video games, Self-Reported problem solving skills, and academic grades. *Journal of Youth and Adolescence, 42* (7), 1041-1052

Ajzen, I. (2005). *Attitudes, Personality, and Behavior (2nd ed.).* Milton-Keynes, England: Open University Press.

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders – (5th Edition).* American Psychiatric Association, DC, USA (2013).

Anand, V. (2007). A study of time management: The correlation between video game usage and academic performance markers. *CyberPsychology and Behavior, 10,* 552-559.

Anderson, C. A. (2004). An update on the effects of violent video games. *Journal of Adolescence,* 27, 113-122.

Anderson, C. A., & Bushman, B. J. (2002). Media violence and societal violence. *Science, 295,* 2377-2378.

Anderson, C. A., & Carnagey, N. L. (2009). Causal effects of violent sports video games on aggression: Is it competitiveness or violent content? *Journal of Experimental Social Psychology, 45,* 731-739.

Anderson, C. A., Carnagey, N. L., Flanagan, M., Benjamin, A. J., Eubanks, J., & Valentine, J. C. (2004). Violent video games: Specific effects of violent content on aggressive thoughts and behavior. *Advances in Experimental Social Psychology, 36,* 199-249.

Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy.* New York: Oxford University Press.

Anderson, C. A., Sakamoto, A., Gentile, D. A., Ihori, N., & Shibuya, A., Yukawa, S., Naito, M., & Kobayashi, K. (2008). Longitudinal effects of violent video games aggression in Japan and the United States. *Pediatrics, 122,* 1067-1072.

Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B.J., Sakamoto, A., Rothstein, H.R., & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries. *Psychological Bulletin, 136,* 151-173.

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology, 78,* 772-790.

Anderson, C. A., & Murphy, C. R. (2003). Violent video games and aggressive behavior in young women. *Aggressive Behavior, 29,* 423-429.

Anderson, C. A., Carnagey, N. L., & Eubanks, J. (2003). Exposure to violent media: The effects of songs with violent lyrics on aggressive thoughts and feelings. *Journal of Personality and Social Psychology, 84*, 960-971.

Anderson, C. A., Gentile, D. A., & Dill, K. E. (2012). Prosocial, antisocial and other effects of recreational video games. In D. G. Singer, & J. L. Singer (Eds), *Handbook of Children and the Media, 2nd Ed,* (pp. 249-272). Thousand Oaks, CA: Sage.

Anderson, I. (2004). Explaining negative rape victim perception: Homophobia and the male rape victim. *Current Research in Social Psychology, 10,* 1-14.

Andrew, B., Brewin, C. R., & Rose, S. (2003). Gender, social support, and PTSD in victims of violent crime. *Journal of Traumatic Stress, 4,* 421-427.

Arnett, J. J. (1995). Adolescents' uses of media for self-socialization. *Journal of Youth and Adolescence, 24*, 519-533.

Arriaga, P., Esteves, F., Carneiro, P., & Monteiro, M. (2008). Are the effects of unreal violent video games pronounced when playing with a virtual reality system? *Aggressive Behavior, 34,* 521–538.

Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal Social Psychology. 41,* 258 – 290.

Austin, E. W. (1993). Exploring the effects of active parental mediation of television content. *Journal of Broadcasting and Electronic Media, 37,* 147-158.

Austin, E. W., Pinkleton, B. E., & Fujioka, Y. (2000). The role of interpretation processes and parental discussion in the media's effects on adolescents' use of alcohol. *Pediatrics, 105,* 343-349.

Bailey, K., West, R., & Anderson, C. A. (2010). A negative association between video game experience and proactive cognitive control. *Psychophysiology, 47,* 34-42.

Baldry, A. C. & Farrington, D. P. (2004). Evaluation of an intervention program for the reduction of bullying and victimization in schools. *Aggressive Behavior, 30,* 1 – 15.

Baldry, A. C. (2004). The impact of direct and indirect bullying on the mental and physical health of Italian youngsters. *Aggressive Behaviour, 30,* 343 – 355.

Ballard, M. E., & Wiest, J. R. (1996). Mortal Kombat: the effects of violent videogame play on males' hostility and cardiovascular responding. *Journal of Applied Social Psychology, 26,* 717-730.

Ballard, M. E., Panee, C. D., & Engold, E. D., & Hamby, R. H. (2001, April). *Violent video game play, cardiovascular reactivity, affective responses, and aggression: A brief longitudinal study*. Presented at the Society for Research in Child Development, Minneapolis, MN.

Ballard, M., & Lineberger, R. (1999). Video game violence and confederate gender: effects on reward and punishment given by college males. *Sex Roles, 41,* 541-558.

Bandura, A. (1973). *Aggression: A social learning analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Journal of Personality and Social Psychology Review, 3*, 193-209.

Bandura, A. (1990). Mechanisms of moral disengagement. In W. Reich (Ed.), *Origins of terrorism, Psychologies, ideologies, theologies, ststes of mind* (pp. 161-191). Cambridge: Cambridge University Press.

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31,* 101-119.

Bandura, A., Barbaranelli, C., Caprara, G. V. & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency, *Journal of Personality and Social Psychology, 71,* 354-374.

Bandura, A., V. Caprara, C., Barbaranelli, C., Pastorelli, C. & Regalia, C. (2001). Sociocognitive selfregulatory mechanisms governing transgressive behavior. *Journal of Personality and Social Psychology, 80,* 125-135.

Barlett, C. P., & Anderson, C. A. (2013). Examining media effects: The General Aggression and General Learning Models. In E. Scharrer (Ed.), *Media Effects/Media Psychology (pp. 1-20)*. San Francisco: Blackwell-Wiley.

Barnett, M. A., Vitaglione, G. D., Harper, K. K. G., Quackenbush, S., Steadman, L. A. & Valdez, B. S. (1997). Late adolescents' experiences with and attitudes towards videogames. *Journal of Applied Social Psychology, 27,* 1316 – 1334.

Barter, C. & Renold, E. (2000). 'I wanna tell you a story': Exploring the application of vignettes in qualitative research with children and young people. *International Journal of Social Research Methodology, 3,* 307 – 323.

Bartholow, B .D., Anderson, C.A., Carnagey, N .L., & Benjamin, A .J., Jr. (2005). Interactive effects of life experience and situational cues on aggression: The weapons priming effect in hunters and nonhunters. *Journal of Experimental Social Psychology, 41,* 48–60.

Bartholow, B. D. & Anderson, C. A. (2002). Effects of violent video games on aggressive behavior: Potential sex differences. *Journal of Experimental Social Psychology, 38*, 283-290.

Bartholow, B. D., Bushman, B. J., & Sestir, M. A. (2006). Chronic violent video game exposure and desensitization: Behavioral and event-related brain potential data. *Journal of Experimental Social Psychology, 42*, 532–539.

Bartholow, B. D., Sestir, M. A., & Davis, E. (2005). Correlates and consequences of exposure to video game violence: Hostile personality, empathy, and aggressive behaviour. *Personality and Social Psychology Bulletin, 31,* 1573-1586.

Bartlett, C. P., Anderson, C.A. & Swing, E.L. (2009). Video game effects confirmed, suspected and speculative: A review of the evidence. *Simulation and Gaming, 40,* 377-403.

Bartlett, C. P., Harris, R. J. & Bruey, C. (2008). The effect of the amount of blood in a violent video game in aggression, hostility, and arousal. *Journal of Experimental Social Psychology, 4,* 539-546.

Bartlett, C. P., Harris, R. J., & Baldassaro, R. (2007). Longer you play, the more hostile you feel: Examination of first person shooter video games and aggression during video game play. *Aggressive Behavior, 33,* 486–497.

Bartlett, C. P., Harris, R.J. & Bruey, C. (2008). The effect of the amount of blood in a violent video game in aggression, hostility, and arousal. *Journal of Experimental Social Psychology, 4,* 53-546.

Bastian, B., & Haslam, N. (2010). Excluded from humanity: Ostracism and dehumanization. *Journal of Experimental Social Psychology, 46,* 107-113.

Bastian, B., Jetten, J., & Radke, H. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology, 48,* 486–491.

Batson, C., Sager, K., Garst, E., Kang, M., Rubchinsky, K. & Dawson, K. (1997). Is empathy-induced helping due to self-other merging? *Journal of Personality and Social Psychology, 73*, 495–509.

Bauman, S., & Pero, H. (2010). Bullying and cyberbullying among deaf students and their hearing peers: An exploratory study. *Journal of Deaf Studies and Deaf Education, 16,* 236-253.

Beale, I. L., Kato, P. M., Marín-Bowling, V. M., Guthrie, N., & Cole, S. W. (2007). Improvement in cancer-related knowledge following use of a psychoeducational video game for adolescents and young adults with cancer. *Journal of Adolescent Health, 41,* 263-270.

Beasley, B. & Standley, T.C. (2002). Shirts vs. skins: Clothing as an indicator of gender role stereotyping in video-games. *Mass Communication and Society, 5*, 279 – 293.

Bem, D. J. (1972). Self perception theory. In L. Berkowitz (Eds,) *Advances in Experimental Social Psychology, 13* (pp. 1-62). New York: Academic Press.

Bentley, K. M. & Li, A. K. F. (1995). Bully and victim problems in elementary schools and students' beliefs about aggression. *Canadian Journal of School Psychology, 11*, 153-165.

Berkey, C. S., Rockett, H. R., Field, A. E., Gillman, M. W., Frazier, A. L., Camargo, C. A., Jr., Colditz, G.A. (2000). Activity, dietary intake, and weight changes in a longitudinal study of preadolescent and adolescent boys and girls. *Pediatrics, 111,* 836-843.

Bettencourt, B. A., & Miller, N. (1996). Gender differences in aggression as a function of provocation: A meta-analysis. Psychological Bulletin, 119, 422–447.

Bijvank, M., Konijin, E. A., Bushman, B. J. & & Roelofsma, P. H. (2009). Age and violent content labels make video games forbidden fruits for youth. *Pediatrics, 123*, 870-876.

Bluemke, M., Friedrich, M., & Zumbach, J. (2010). The influence of violent and nonviolent computer games on implicit measures of aggressiveness. *Aggressive Behavior, 36*, 1-13.

Boardley, I. D. & Kavussanu, M. (2007). Development and validation of the moral disengagement in sport scale. *Journal of Sport and Exercise Psychology, 29*, 608-628.

Boardley, I. D. & Kavussanu, M. (2008). The moral disengagement in sport scale-short. *Journal of Sports Sciences*, 26, 1507-1517.

Boardley, I. D. & Kavussanu, M. (2009). The influence of social variables and moral disengagement on prosocial and antisocial behaviours in field hockey and netball. *Journal of Sports Sciences, 27*, 843-854.

Boardley, I. D. & Kavussanu, M. (2011). Moral disengagement in sport. *International Review of Sport and Exercise Psychology, 4*, 93-108.

Bohner, G., & Wänke, M. (2002). *Attitudes and attitude change*. Hove, UK: Psychology Press.

Bosche, W. (2009). Violent content enhances video game performance. *Journal of Media Psychology, 21*, 145-150.

Bosworth, K., Espelage, D. L., & Simon, T. (1999). Factors associated with bullying behavior in middle school students. *Journal of Early Adolescence, 19*, 341-362.

Boulton, M. J., Trueman, L., & Fleminton, J. (2002). Associations between secondary school sudents defintions of bullying, attitudes towards bullying and tendencies to engage in bullying: Age and sex differences. *Educational Studies, 28*, 353-370.

Brady, S. & Mathews, K. A. (2006). Effects of media violence on health-related outcomes among young men. *Archives of Paediatric Adolescent Medicine, 160,* 341-347.

Brasington, R. (1990). Nintendinitis. *New England Journal of Medicine, 322,* 1473-1474.

Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology, 3,* 77–101.

Bright, D. A. & Bringhurst, D. C. (1992). Nintendo elbow. *Western Journal of Medicine, 156,* 667-668.

Bryan, J. H., & Test, M. A. (1967). Models and helping: Naturalistic studies in aiding behavior. *Journal of Personality and Social Psychology, 6,* 400–407.

Bryant, B. (1982). An index of empathy for children and adolescents, *Child Development, 53,* 413-425.

Bryant, S. A., & Spencer, G. A. (2003). University students' attitudes about attributing blame in domestic violence. *Journal of Family Violence, 18,* 369-376.

Buckley, K. E., & Anderson, C. A. (2006). A theoretical model of the effects and consequences of playing video games. In P. Vorderer & J. Bryant (Eds.), *Playing Video Games - Motives, Responses, and Consequences* (pp. 363-378). Mahwah, NJ.

Burgess, M. C., Dill, K. E., Stermer, S. P., Burgess, S. R. & Brown, B. P. (2011). Playing with prejudice: The prevelance and consequences of racial stereotypes in video-games. *Media Psychology, 14,* 289 -311.

Bushman, B. J. & Anderson, C. A. (2002). Violent video games and hostile expectations: A test of the general aggression model. *Personality and Social Psychology Bulletin, 28,* 1679-1686.

Bushman, B. J., & Anderson, C. A. (2001). Media violence and the American public: Scientific facts versus media misinformation. *American Psychologist, 56,* 477–489.

Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others. *Psychological Science, 21,* 273-277.

Bushman, Brad J., Huesmann, L. R., (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics and Adolescent Medicine, 160,* 348-352.

Carnagey, N. L., & Anderson, C. A. (2004). Violent video game exposure and aggression: A literature review. *Minerva Psichiatrica,* 45, 1-18.

Carnagey, N. L., & Anderson, C. A. (2005). The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior. *Psychological Science, 16,* 882-889.

Carnagey, N. L., Anderson, C.A. & Bushman, B. J. (2007). The effect of video game violence on physiological desensitization to real-life violence. *Journal of Experimental Social Psychology, 43,* 489-496.

Carvalhal, P., Padez, C., Moreira, I., & Rosada, V. (2007). Overweight and obesity related to activities in Portuguese children, 7-9 years. *European Journal of Public Health, 17,* 42-46.

Chan, P. A. & Rabiowiz, T. (2006). A cross-sectional analysis of video games and attention deficit hyperactivity disorder symptoms in adolescents. *Annual General Psychiatry, 24,* 1-6.

Children Now. (2001). *Fair play? Violence, gender and race in video games.* Los Angeles: Children Now.

Chuang, Y. (2006). Massive multiplayer online role-playing game induced seizures: A neglected health problem in internet addiction. *CyberPsychology and Behavior, 9,* 451-456.

Chumbley, J. & Griffiths, M. D. (2006). Affect and the computer game player: The effect of gender, personality, and game reinforcement structure and affective response to computer game play. *CyberPsychology and Behavior, 9,* 308-316.

Cicchirillo, V., & Chory-Assad, R. M. (2005). Effects of affective orientation and video game play on aggressive thoughts and behaviors. *Journal of Broadcasting and Electronic Media*, *49,* 435-449.

Clements, C. B., Brannen, D. N., Kirkley, S. M., Gordon, T. M. & Church, W. T. (2006). The measurement of concern about victims: Empathy, victim advocacy and the Victim Concern Scale (VCS). *Legal and Criminological Psychology, 11,* 283–295.

Collins, B. E. & Brief, D. E. (1995). Using person perception vignette methodologies to uncover the symbolic meaning of teacher behaviour in the Milgram paradigm. *Journal of Social Issues, 51,* 89 – 106.

Colwell, J., & Kato, M. (2003). Investigation of the relationship between social isolation, self-esteem, aggression and computer game play in Japanese adolescents. *Asian Journal of Social Psychology*, *6,* 149-158.

Colwell, J., & Payne, J. (2000). Negative correlates of computer game play in adolescents. *British Journal of Psychology, 91,* 295-310.

Cooper, J., & Mackie, D. (1986). Video games and aggression in children. *Journal of Applied Social Psychology, 16,* 726–744.

Corbett, A. T., Koedinger, K. R., & Hadley, W. H. (2001). Cognitive Tutors: From the research classroom to all classrooms. In Goodman, P. S. (Ed.) *Technology Enhanced Learning: Opportunities for Change,* (pp. 235-263). Mahwah, NJ: Lawrence Erlbaum Associates.

Corrion, K., Long, T., Smith, A.L. & d'Arripe Lougueville, F. (2009). It's not my fault, it's not serious: Athletes account of moral disengagement in competitive sport. *The Sports Psychologist, 23*, 388-404.

Corser, S. & Furnell, R. G. (1992). What do foster parents think of the natural parents? A comparative study. *Childcare, Health and Development 18,* 67-80.

Coulomb-Cabango, G. & Rascale, O. (2006). Team players observed aggression as a function of sex, competitive levels and sports types. *Journal of Applied Social Psychology, 36,* 1980-2000.

d' Arripe-Loungueville, F., Corrion, K., Scoffier, S., Roussel, P., & Chalabaev, A. (2010) Sociocognitive self-regulatory mechanisms governing judgments of the acceptability and likelihood of sport cheating. *Journal of Sports & Exercise Psychology, 32,* 595-618.

Daley, A. J. (2009). Can exergaming contribute to improving physical activity levels and health outcomes in children? *Pediatrics, 124,* 763-771.

Darley, J. M. & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responibility. *Journal of Personality and Social Psychology, 8,* 377–383.

Davies, M., Pollard, P. & Archer, J. (2001). The influence of victim gender and sexual orientation on judgements of the victim in a depicted stranger rape. *Violence and Victims, 16,* 607-619.

De Lisi, R., & Wolford, J. L. (2002). Improving children's mental rotation accuracy with computer game playing. *Journal of Genetic Psychology, 163,* 272-282.

Dietz, T. L. (1998). An examination of violence and gender role portrayals in video-games: implications for gender socialization and aggressive behavior. *Sex Roles, 38,* 425-442.

Dill, K. E. & Dill, J. C. (1998). Video game violence: A review of the empirical literature. *Aggression and Violent Behavior, 3,* 407-428.

Dill, K. E., & Thill, K. P. (2007). Video-game characters and the socialization of gender roles: Young people's perceptions mirror sexist media depictions. *Sex Roles,* 57, 851-864.

Dill, K. E., Brown, B. P., & Collins, M. A. (2008). Effects of exposure to sex-stereotyped video-game characters on tolerance of sexual harassment. *Journal of Experimental Social Psychology, 44,* 1402-1408.

Dill, K. E., Gentile, D. A., Richter, W. A., & Dill, J. C. (2005). Violence, sex, age and race in popular video-games: A content analysis. In E. Cole & J. Henderson- Daniel (Eds.), *Featuring females: Feminist analyses of media* (pp. 115 – 130). Washington, DC: American Psychological Association.

Doherty, K., & Anderson, I. (2004). Making sense of male rape: Constructions of gender, sexuality and experience of rape victims. *Journal of Community Applied Social Psychology, 14,* 85-103.

Dollard, J., Doob, L., Miller, N., Mowrer, O., & Sears, R. (1939). *Frustration and aggression.* New Haven, CT: Yale University Press.

Drew, B., & Waters, J. (1986). Video games: Utilization of a novel strategy to improve perceptual motor skills and cognitive functioning in the non-institutionalized elderly. *Cognitive Rehabilitation, 4,* 26-31.

Dubow, E. F, Huesmann, L. R., Greenwood, D. (2006). Media and youth socialization: Underlying processes and moderators of effects. In Grusec, J. & Hastings, P. (Eds). *The Handbook of Socialization* (pp. 404-430). New York: Guilford Press.

Durkin, K., & Barber, B. (2002). Not so doomed: Computer game play and positive adolescent development. *Applied Developmental Psychology, 23,* 373-392.

Dustman, R. E., Emmerson, R. Y., Steinhaus, L. A., Shearer, D. E., & Dustman, T. J. (1992). The effects of videogame playing on neuropsychological performance of elderly individuals. *Journal of Gerontology*, *47*, 168-171.

Eastin, M. S. (2006). Video-game violence and the female game player: Self-and opponent gender effects on presence and aggressive thoughts. *Human Communication Research*, 32, 351-372.

Eastin, M. S., & Griffiths, R. P. (2006). Beyond the shooter game: Examining presence and hostile outcomes among male game players. *Communication Research, 33,* 448-466.

Endreson, I. M. & Olweus, D. (2001). Self reported empathy in Norwegian students: Sex differences, age trends and relationships to bullying. In Bohart, A. & Stipek, D. (Eds,). *Constructive & Destructive Behavior: Implications for Family, School & Society* (pp. 147-165). Washington: American Psychological Association.

Engelhardt, C. R., Bartholow, B. D., Kerr, G. T. & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology, 47*, 1033-1036.

Engelhardt, C.E., Bartholow, B.D., & Saults, J.S. (2011). Violent and nonviolent video games differentially affect physical aggression for individuals high versus low in dispositional anger. *Aggressive Behavior, 37,* 539-546.

Entertainment Software Association (2012). Entertainment Software Rating Board (ESRB). Retrieved August 28th, 2012 from http://www.esrb.org.

Erikson, E. E. (1963). *Childhood and society (2nd ed.).* New York: Norton.

Eron, L. D., Huesmann, L. R., Lefkowitz, M. M. & Walder, L. (1972). Does television violence cause aggression? *American Psychologist, 27,* 253–263.

Escobar-Chaves, S. L. & Anderson, C. A. (2008) Media and risky behaviour. *Future of Children, 18,* 147-180.

Espelage, D. L., Mebane, S. E., & Adams, R. S. (2004). Empathy, caring and bullying: Towards an understanding of complex associations. In Espelage, D. L. & Swearer, S. M. (Eds,), *Bullying in American Schools: A Socio-Ecological Perspective on Prevention and Intervention* (pp.37-61). Mahwah, NJ: Lawrence Erlbaum Associates.

Faia, M. A. (1979). The vagaries of the vignette world: A document on Alves and Rossi. *American Journal of Sociology, 85,* 951–954.

Fanti, K. A., Vanman, E., Henrich, C. C., & Avraamides, M. N. (2009). Desensitization to media violence over a short period of time. *Aggressive Behavior, 35*, 179-187.

Farrar, K. M., Krcmar, M., & Nowak, K. L. (2006). Contextual features of violent video games, mental models, and aggression. *Journal of Communication, 56*, 387–405.

Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino E. T. Higgins (Eds.), *The handbook of motivation and cognition: Foundations of social behavior* (pp. 204-243). New York: Guilford Press.

Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 23, pp. 75-109). New York: Academic Press.

Fazio, R. H., & Towles-Schwen, T. (1999). The MODE model of attitude-behavior processes. In S. Chaiken Y. Trope (Eds.), *Dual Process Theories in Social Psychology* (pp. 97-116). New York: Guilford.

Fazio, R. H., & Zanna, M. P. (1981). Direct experience and attitude-behavior consistency. In L. Berkowitz (Ed.), *Advances In Experimental Social Psychology 4* (pp. 161-202). New York: Academic Press.

Feng, J., Spence, L. & Pratt, J. (2007). Playing an action video game reduces gender differences in spatial cognition. *Psychological Science, 18,* 850-855.

Ferguson, C. J. & Kilburn, J. (2010). Much ado about nothing: The misinterpretation and overinterpretation of violent video game effects in eastern and western nations: Comment on Anderson et al., (2010). *Psychological Bulletin, 136,* 174-178.

Ferguson, C. J. (2007). Evidence for publication bias in video game violence effects literature: A meta-analytic review. *Aggression and Violent Behavior, 12,* 470-482.

Ferguson, C. J. (2013). Violent video games and the Supreme Court: Lessons for the scientific community in the wake of Brown v. Entertainment Merchants Association. *American Psychologists, 68,* 57-74.

Ferguson, C. J., San Miguel, S. & Hartley, T. (2009). Multivariate analysis of youth violence and aggression: The influence of family, peers, depression and media violence. *Journal of Paediatrics, 155,* 904-908.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140.

Finch, J. (1987). The vignette technique in survey research, *Sociology, 2*1, 105 – 11.

Fischer, P., Kastenmuller, A. & Greitmeyer, T. (2010). Media violence and the self: The impact of personalised gaming characters in aggressive video games in aggressive behaviour. *Journal of Experimental Social Psychology, 46,* 192-195.

Fischer, P., Kubitzki, J., Guter, S. & Frey, D. (2007). Virtual driving and risk taking: Do racing games increase risk-taking cognitions, affect, and behaviors? *Journal of Experimental Psychology: Applied, 13,* 22-31.

Fox, C., Elder T, Gater J. & Johnson, E. (2010). The association between adolescents' beliefs in a just world and their attitudes to victims of bullying. *British Journal of Educational Psychology, 80,* 183-198.

Frostling-Henningsson, M. (2009). First person shooter games as a way of connecting to people "Brothers on blood". *CyberPsychology and Behavior, 12,* 557-562.

Funk, J. (2003). Violent video games: Whos at risk? In D. Ravitch, J. Viteritti (Eds.*), Kids stuff: Marketing Violence and Vulgerity in the Popular Culture* (pp.168-192). Baltimore: John Hopkins University Press.

Funk, J. B. (2005). Children's exposure to violent video games and desensitization to violence. *Child and Adolescent Psychiatric Clinics of North America, 14*, 387–404.

Funk, J. B. & Buchman, D. D., & Germann, J. N. (2000). Preference for violent electronic games, self-concept, and gender differences in young children. *American Journal of Orthopsychiatry, 70,* 233-241.

Funk, J. B., & Buchman, D. (1996). Playing violent video and computer games and adolescent self-perception. *Journal of Communication, 46,* 19–32.

Funk, J. B., Bushman, D. D., Jenks, J., & Bechtold, H. (2003). Playing violent video games, desensitization, and moral evaluation in children. *Journal of Adolescence, 24,* 413-436.

Funk, J. B., Chan, M., Brouwer, J., & Curtiss, K. (2006). A biopsychosocial analysis of the video game-playing experience of children and adults in the United States. *SIMILE: Studies in Media and Information Literacy Education 6,* (pp.1-15). Mahwah, NJ: Lawrence Erlbaum Associates.

Funk, J. B., Hagan, J. D., & Schimming, J. L. (1999). Children and electronic games: A comparison of parent and child perceptions of children's habits and preferences in a United States sample. *Psychological Reports, 85,* 883-888.

Funk, J., Baldacci, H. B., Pasold, T., & Baumgardner, J. (2004). Violence exposure in real-life, video games, television, movies and the internet: Is there desensitisation? *Journal of Adolescence, 27,* 23-39.

Funk, J., Chan, M., Brouwer, J. & Curtiss K. (2006). A biopsychosocial analysis of the video-game-playing experience of children and adults in the United States. *Studies in Media and Information Literacy Education, 6,* 1-15.

Funk, J., Elliott, R., Bechtoldt, H., Pasold, T., & Tsavoussis, A. (2003). The attitudes toward violence scale. *Journal of Interpersonal Violence 18,* 186-196.

Funk, J. B., Baldacci, H. B., Paold, T. & Baumgadner, J. (2004). Violence exposure in real life, video games, television, movies and the internet: is there desentistisation? *Journal of Adolescence, 27,* 23-29.

Gabbiadini, A., Andrighetto, L., Volpato, C. (2012). Brief report: Does exposure to violent games increase moral disengagement among students? Journal of Adolescence, 35, 1403-6.

Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C. & Bushman, B. (2014). Interactive Effect of Moral Disengagement and Violent Videogames on Self-Control, Cheating, and Aggression *Social Psychological and Personality Science, 5: 451-458.*

Gardner, J. E. (1991). Can the Mario Brothers help? Nintendo games as an adjunct in psychotherapy in children. *Psychotherapy, 28,* 667-670.

Gaylord-Ross, R., Haring, T., Breen, C., & Pitts-Conway, V. (1984). The training and generalization of social interaction skills with autistic youth. *Education and Training of the Mentally Retarded, 17,* 229-247.

Gentile (2011). The multiple dimensions of video game effects. *Child Development Perspectives, 5,* 75-81.

Gentile, D. A. & Anderson, C. A. (2003). Violent video games: The newest media violence hazard. In D. A. Gentile (Ed.), *Media violence and children* (pp.131-152). Westport, CT: Praeger Publishing.

Gentile, D. A. & Gentile, J. R. (2008). Violent video games as exemplary teachers: A conceptual analysis. *Journal of Youth and Adolescence, 9,* 127-141.

Gentile, D. A. & Stone, W. (2005). Violent video game effects in children and adolescents: A review of the literature. *Minerva Pediatrics, 57,* 337-358.

Gentile, D. A. (2009). Pathological video game use among youth 8 to 18: A national study. *Psychological Science, 20,* 594-602.

Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., Liau, A. K., Khoo, A., Bushman, B. J., Huesmann, L. R., & Sakamoto, A. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlation, longitudinal, and experimental studies. *Personality and Social Psychology Bulletin, 35,* 752-763.

Gentile, D. A., Lynch, P. J., Linder, J. R. & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviours and school performance. *Journal of Adolescence, 27,* 5-22.

Gentile, D. A. (2005). *Examining the effects of video games from a psychological perspective: Focus on violent games and a new synthesis.* Minneapolis, MN: National Institute on Media and the Family.

Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1986). Living with television: The dynamics of the cultivation process. In J. Bryant & D. Zillman (Eds.), *Perspectives on media effects* (pp. 17–40). Hilldale, NJ: Lawrence Erlbaum Associates.

Ghuman, D. & Griffiths, M. D. (2012). A cross-genre study of online gaming: Player demographics, motivation for play, and social interactions among players. *International Journal of Cyber Behaviour, Psychology and Learning, 2,* 13 -29.

Gini, G. (2006a). Bullying as a social process: The role of group membership in students' perception of inter-group aggression at school. *Journal of School Psychology, 44,* 51-65.

Gini, G. (2006b). Social cognition and moral cognition in bullying: What's wrong? *Aggressive Behavior, 32,* 528-539.

Gini, G. (2008). Italian elementary and middle school students' blaming the victim of bullying and perception of school moral atmosphere. *The Elementary School Journal, 108,* 335-354.

Gini, G., Pozzoli, T., & Hauser, M. (2011). Bullies have enhanced moral competence to judge relative to victims, but lack moral compassion. *Personality and Individual Differences, 50*, 603-608.

Gini, G., Pozzoli, T., Borghi, F., & Franzoni, L. (2008). The role of bystanders in students' perception of bullying and sense of safety. *Journal of School Psychology, 46,* 617-638.

Giumetti, G. W., & Markey, P. M. (2007). Violent video games and anger as predictors of aggression. *Journal of Research in Personality, 41*, 1234-1243.

Goldstein, J., Cajko, L., Oosterbroek, M., Michielsen, M., van Houten, O. & Salverda, F. (1997). Video games and the elderly. *Social Behavior and Personality, 25,* 345-352.

Gopher, D. Weil, M. & Bareket, D. (1994). Transfer of skill from a computer game trainer to flight. *Human Factors, 36,* 1-19.

Grabe, S., Shibley Hyde, J., & Ward, L. M. (2008). The role of the media in body image concerns among women: A meta-anlalysis of experimental and correlational studies. *Psychological Bulletin, 134*, 460-476.

Green, C.S. & Bavelier, D. (2003). Action video games modify visual selective attention. *Nature, 423,* 534-537.

Green, C.S. & Bavelier, D. (2006). Eunumeration versus multiple object tracking: The case of action video game players. *Cognition, 101,* 217-245.

Greenberg, B. S., Sherry, J., Lachlan, K., Lucas, K., & Holmstrom, A. (2008). Orientations to video games among gender and age groups. *Simulation & Gaming, 41,* 238- 259.

Greitemeyer, T. & McLatchie, N. (2011). Denying humanness to others: A newly discovered mechanism by which violent video games increase aggressive behavior. *Psychological Science, 22,* 659-665.

Greitemeyer, T. & Osswald, S. (2009). Prosocial video games reduce aggressive cognitions. *Journal of Experimental Social Psychology, 45,* 896-900.

Greitemeyer, T., & Osswald, S. (2010). Effects of prosocial video games on prosocial behavior. *Journal of Personality and Social Psychology, 98,* 211–221.

Griffiths, M. D. (1993). Are computer games bad for children? *The Psychologist: Bulletin of the British Psychological Society*, 6, 401-407.

Griffiths, M. D. (2000). Does Internet and computer "addiction" exist? Some case study evidence. *CyberPsychology and Behavior, 3,* 211-218.

Griffiths, M. D. (2005). A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance Use, 10,* 191-197.

Griffiths, M. D. (2008). Video game addiction: Fact or Fiction. In Willoughby, T. & Wood, E. (Eds). *Children's Learning in a Digital World* (pp. 85-103). Oxford: Blackwell Publishing.

Griffiths, M. D. (2010a). Online video gaming: what should educational psychologists know? *Educational Psychology in Practice, 26,* 35-40.

Griffiths, M. D. (2010b). The role of context in online gaming excess and addiction: Some case study evidence. *International Journal of Mental Health Addiction, 8,* 1557-1874.

Griffiths, M. D., Davies, M. N. O. & Chappell, D. (2004a). Online computer gaming a comparison of adolescent and adult gamers. *Journal of Adolescence, 27,* 87-96.

Griffiths, M. D., Davies, M. N. O. & Chappell, D. (2004b). Demographic Factors and Playing variables in online computer gaming. *CyberPsychology and Behavior, 7*, 479-487.

Griffiths, M. D. & Hunt, N. (1995). Computer game playing in adolescence: Prevalence and demographic indicators. *Journal of Community and Applied Social Psychology, 5*, 189-193.

Griffiths, M. D. (1997). Computer game playing in early adolescence. *Youth and Society, 29*, 223-237.

Griffiths, M.D., King, D.L. & Demetrovics, Z. (2014). DSM-5 internet gaming disorder needs a unified approach to assessment. *Neuropsychiatry, 4*, 1-4.

Griffiths, M.D., Lewis, A., Ortiz de Gortari, A. B. & Kuss, D. J. (2014). Online forums and blogs: A new innovative methodology for data collection. *Studia Psychologica*, in press

Groebel, J. (2001). Media violence in cross-cultural perspective: a global study on children's media behavior and some educational implications. In D. G. Singer, & J. L. Singer (Eds.), *Handbook of children and the media* (pp. 255–268). Thousand Oaks, CA: Sage.

Guerra, N. G., Nucci, L. & Huesmann, L. R. (1994). M*oral cognition and childhood aggression*. In Huesmann, L. R. (ed.), Aggressive behavior: Current perspectives, Plenum, New York.

Guimetti, G.W. & Markey, P. M. (2007). Violent video games and anger as predictors of aggression. *Journal of Research in Personality, 41*, 123-1243.

Grüsser, S.M., Thalemann, R. & Griffiths, M.D. (2007). Excessive computer game playing: Evidence for addiction and ggression?. *Cyberpsychology and Behavior, 10*, 290-292.

Harris, M. B. & Williams, R. (1985). Video games and school performance. *Education, 105*, 306-309.

Hartmann, T., & Klimmt, C. (2006). Gender and computer games: Exploring females' dislikes. *Journal of Computer-Mediated Communication, 11*, 910-931.

Hayes E. & Silbeman, L. (2007). Incorporating video games into physical education. *Journal of Physical Education, Recreation and Dance, 78*, 1-58.

Hazel, N. (1995). Elicitation techniques with young people. *Social Research Update, 12*, Department of Sociology, University of Surrey, retrieved from http://sru.soc.surrey.ac.uk/SRU12.html.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Henderson, N. R., & Hymel, S. (2002). Peer contributions to bullying in schools: Examining student response categories. Poster presented at the National Association of School Psychologists Annual Convention, Chicago.

Hirsch, C. R., Hayes S., & Mathews, A. (2009). Looking on the brightside: Accessing benign meanings reduces worry. *Journal of Abnormal Psychology, 18*, 44–54.

Holcomb, D., Holcomb, L., Sondag, K., & Williams, N. (1991). Attitudes about date rape: Gender differences among college students. *College Studies Journal, 25*, 434-439.

Hollingsworth, M., & Woodward, J. (1993). Integrated learning: Explicit strategies and their role in problem solving for students with learning disabilities. *Exceptional Children, 59*, 444-445.

Hopf, W. H., Huber, G. L. & Weib, R. H. (2008). Media violence and youth violence: A 2 year longitudinal study. *Journal of Media Psychology, 20*, 79-96.

Horgan, J., Mühlau, P., McCormack, P., & Röder, A. (2009). *Attitudes to Domestic Abuse in Ireland: Report of a survey on perceptions and beliefs of domestic abuse among the general population of Ireland.* Dublin: The National Office for Prevention of Domestic, Sexual and Gender Based Crimes (Cosc).

Hughes, R. (1998). Considering the vignette technique and its application to a study of drug injecting and HIV risk and safer behaviour. *Sociology of Health and Illness, 20,* 381-400.

Hurley, A. L., Sullivan, P., & McCarthy, J. (2007). The construction of self in online support groups for victims of domestic violence. *British Journal of Social Psychology, 46,* 859-874.

Hussain, Z. & Griffiths, M.D. (2008). Gender swapping and socialising in cyberspace: An exploratory study. *CyberPsychology and Behavior, 11,* 47-53.

Hussain, Z. & Griffiths, M.D. (2009). Excessive use of Massively Multi-Player Online Role-Playing Games: A pilot study. *International Journal of Mental Health and Addiction, 7,* 563-571.

Hutson, A. C., & Wright, J. C. (1998). Television and the informational and educational needs of children. *Annals of the American Academy of Political and Social Science, 557,* 9-23.

Hymel, S., Rocke-Henderson, N., & Bonanno, R. A. (2001). Moral disengagement: A framework for understanding bullying among adolescents. *Journal of Social Sciences Special Issue, 8,* 1–11.

Ihori, N., Sakamoto, A., Kobayashi, K., & Kimura, F. (2003). Does video game use grow children's aggressiveness? Results from a panel study. In K. Arai (Ed.), *Social contributions and responsibilities of simulation and gaming: Proceedings of the 34th Annual Conference of the International Simulation and Gaming Association.* Tokyo, Japan: ISGA.

Ireland, J. L. (1999). Bullying amongst prisoners: A study of adults and young offenders. *Aggressive Behavior, 25,* 162-178.

Ireland, J., Power, C., Bramhall, S. & Flowers, C. (2009). Developing an attitude towards bullying scale for prisoners: Structural analyses across adult men, young adults and women prisoners. *Criminal Behaviour and Mental Health, 19*, 28-42.

Ivory, J. D. (2006). Still a man's game: Gender representation in online reviews of video-games. *Mass Communication and Society, 9,* 103-114.

Ivory, J. D., & Kalyanaraman, S. (2009). Video games make people violent – Well, maybe not that game: Effects of content and person abstraction on perceptions of violent video games' effects and support of censorship. *Communication Reports, 22,* 1-12.

Ivory, J. D., & Magee, R .G. (2009). You can't take it with you? Effects of handheld portable media consoles on physiological and psychological responses to video games and movie content. *CyberPsychology and Behaviour, 12,* 291-297.

Ivory, J. D. & Kalyanaraman, S. (2007). The effects of technological advancement and violent content in video games on player's feelings of presence, involvement, physiological arousal and aggression. *Journal of Communication, 57,* 532-555.

Jannink, M. J., van der Wilden, G. J., Navis, D. W., Visser, G., Gussinklo, J., & Ijzerman, M. (2008). A low-cost video game applied for training of upper extremity function in children with cerebral palsy: A pilot study. *CyberPsychology and Behavior, 11,* 27-32.

Jansz, J., & Martis, R. G. (2007). The Lara phenomenon: Powerful female characters in video-games . *Sex Roles, 56,* 141-148.

Jimenez, J. A., & Abreu, J. M. (2003). Race and sex effects on attitudinal perceptions of acquaintance rape. *Journal of Counselling Psychology, 50,* 252-256.

Johnson, A. N., Paine Schofield, C. B., Buchanan, T. & Reips, U. D. (2008). Measuring self-disclosure online: Blurring and non-responses to sensitive items in web-based surveys. *Computers in Human Behaviour, 24, 2158*-2171.

Jones, E. E. (1979). The rocky road from acts to dispositions. *American Psychologst, 343,* 107-117.

Jones, E. E., & Nisbett, R. E. (1972). The *actor and the observer: Divergent perceptions of the causes of behavior*. In E. E. Jones, D. E. Kanhouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), Attribution: Perceiving the causes of behavior (pp.79-94). Morristown, NJ: General Learning Press.

Kalof, L., Dan, A. & Dietz, T. (2008). *Essentials of Social Research*. McGraw Hill: London.

Kanekar, S., Pinto, N., & Mazumdar, D. (1985). Causal and moral responsibility of victims of rape and robbery. *Journal of Applied Social Psychology, 113,* 662-637.

Kato, P. M., Cole, S. W., Bradlyn, A. S. & Polloc, B. H. (2009). A video game improves behavioural outcomes in adolescents and young adults with cancer: A randomized trial. *Pediatrics, 122,* 305-317.

Kaye, L. K. & Bryce, J. (2012). Putting the "fun factor" into gaming: The influence of social context on experiences of playing videogames. *International Journal of Internet Science, 7,* 23-37.

Kelley, H. H. (1972). *Causal schemata and the attribution process.* New York: General Learning Press.

King, D. & Delfabbro, P. H., & Griffiths, M. D. (2010). Video game structural characteristics: A new psychological taxonomy. *International Journal of Mental Health and Addiction, 7*, 90-106.

King, N. (2010). Research ethics in qualitative research.In M. A. Forrester (Ed.), *Doing qualitative research in psychology: A practical guide.* (pp.98-118). London: Sage.

Klass, E. T. (1990). Guilt, shame, embarrassment. In H. Leitenberg (Eds.*), Handbook of Social and Evaluation Anxiety* (pp. 385-414). New York: Plenum Publishing Corporation.

Klimmt, C., Hefner, H., & Vorderer, P. (2009). The video game experience as "true" identification: A theory of enjoyable alterations of players' self-perception. *Communication Theory*, *19*, 351-373.

Konijn, E. A., Bijvank, M., & Bushman, B. J. (2007). I wish I were a warrior: The role of wishful identification in effects of violent video games on aggression in adolescent boys. *Developmental Psychology, 43*, 1038-1044.

Krahe, B. & Moller, I. (2004). Playing violent electronic games, hostile attribution style, and aggression related norms in German adolescents. *Journal of Adolescence, 27*, 53-69.

Krcmar, M., & Valkenburg, P. (1999). A scale to assess children's interpretations of justified and unjustified television violence and its relationship to television viewing. *Communication Research, 26*, 608-634.

Kutner, L., Olson, C., Warner, D., & Hertzog, S. (2008). Parents' and sons' perspectives on video game play: A qualitative study. *Journal of Adolescent Research, 23*, 76 -96.

Laner, M. R., Benin, M. H., & Ventrone, N. A. (2001). Bystander attitudes toward victims of violence: Who's worth helping? *Deviant Behavior, 22*, 23-24.

Lee, K. M., Peng, W., & Klein, J. (2010). Will the experience of playing a violent role in a video game influence people's judgements of violent crimes? *Computers in Human Behavior, 26,* 1019-1023.

Lemmens, J. S. & Bushman, B. J. (2006). The appeal of violent video games to lower educated aggressive boys from two countries. *CyberPsychology and Behavior, 9,* 638-641.

Lenhart, A., Kahne, J., Middaugh, E., Macgill, E. R., Evans, C., & Vitak, J. (2008). *Teens, video games, and civics.* Washington, DC: Pew Internet & American Life Project.

Lerner, M. J. (1980). *The Belief in a Just World: A Fundamental Delusion*. Plenum: New York.

Lewis, A. & Griffiths, M. D. (2011). Confronting gender representation: A qualitative study of the experiences and motivations of female casual-gamers. *Aloma, Revista Psicologia Ciencies l'Educacio i de l Esport, 28,* 247-272.

Lieberman, D. A (2001). Management of chronic pediatric diseases with interactive health games: Theory and research findings. *Journal of Ambulatory Care Management, 24,* 26-38.

Lieberman, D. A. (2006). What can we learn from playing video games? In P. Vorderer & J. Byrant (Eds.), *Playing video games: Motives, responses and consequences* (pp.379-397). Mahwah, NJ: Lawrence Erlbaum.

Loftus, G. A., & Loftus, E. F. (1983). *Mind at play: The psychology of video games*. New York: Basic Books.

Longman, H, O' Connor, E. & Obst, P. (2009). The effect of social support derived from World of Warcraft on negative psychological symptoms. *CyberPsychology and Behavior 12,* 563-566.

Lucas, K. & Sherry, J. L. (2004). Sex differences in video-game play: A communication-based explanation. *Communication Research,* 31, 499-523.

Lynn, R., Hampson, S. & Agahi, E. (1989). Television violence and aggression: A genotype-environment, correlation and interaction theory. *Social Behavior and Personality*, *17*, 143-164.

Lynn, T., Brady, M. & Davis, P., (2009). The fast and the furious: Introducing strategic management using an experiential approach. *International Journal of Teaching and Case Studies, 2,* 92-113.

Markey, P. M. & Sherer, K. (2009). An examination of psychoticism and motion capture controls as moderators of the effects of violent video games. *Computers in Human Behavior, 25*, 407-411.

Martea, R. J. (2011). Screwing the pooch: legitimizing the accounts in a zoophilia on-line community. *Deviant Behavior, 32*, 918-943.

Masendorf, F. (1993). Training of learning disabled children's spatial abilities by computer games. *Zeitschrift fur Pädagogische Psychologie, 7,* 209-213.

Maunder, R., Harrop, A. & Tattersall, A. (2010). Pupil and staff perceptions of bullying in secondary schools: Comparing behavioural definitions and their perceived seriousness. *Educational Research. 52,* 263-282.

McCowan, T. C. (1981). Space Invaders wrist. *New England Journal of Medicine,* 304-368. Volume number missing

McKinney, K., Sprecher, S. & Orbuch, T .L. (1987). A person perception experiment examining the effects of contraceptive behaviour on first impressions. *Basic and Applied Social Psychology Bulletin, 9,* 551-558.

McLean, L. & Griffiths, M. D. (2013a). Violent video games and attitudes towards victims of crime: An empricial study among youth. *International Journal of Cyber Behaviour, Psychology and Learning, 2,* 1-16.

McLean, L. & Griffiths, M. D. (2013b). Exploring attitudes towards victims of crime amongst video game players: A vignette study. *International Journal of Cyber Behaviour, Psychology and Learning, 3,* 13-33.

McLean, L. & Griffiths, M. D. (2013c). Female gamers: A thematic analysis of their gaming experiences. *International Journal of Game Based Learning, 3,* 54-71.

Mehroof, M. & Griffiths, M. D. (2010). Online gaming addiction: The role of sensation seeking, self-control, neuroticim, aggression, state anxiety and trait anxiety. *CyberPsychology and Behaviour, 13*, 313-316.

Menesini, E., Codecasa, E., & Benelli, B. (2003). Enhancing children's responsibility to take action against bullying: Evaluation of a befriending intervention in Italian middle schools. *Aggressive Behavior, 29,* 10-14.

Miller, D. L. (1991). Nintendo neck. *Canadian Medical Association Journal, 145,* 1202.

Mills, E., Jadac, A. R., Rossd, C., & Wilson, K. (2005). Systematic review of qualitative studies exploring parental beliefs and attitudes toward childhood vaccination identifies common barriers to vaccination. *Journal of Clinical Epidemiology 58,* 1081–1088.

Moller, I., & Krahe, B. (2009). Exposure to violent video games and aggression in German adolescents: A longitudinal analysis. *Aggressive Behavior, 35*, 75-89.

Mooney, A., Creeser. R. & Blatchford, P. (1991). Children's view on teasing and fighting in junior schools. *Educational Research, 33*, 103 – 112.

Morisset, N., Terrade, F., & Somat, A. (2010). Perceived self-efficacy and risky driving behaviors: The mediating role of subjective risk judgment. *Swiss Journal of Psychology, 69*, 233 – 238.

Muehlenhard, C. L., & Felts, A. S. (1998). Sexual Beliefs Scale. In C. M. Davis, W. H. Yarber, R. Bauserman, G. Schreer, & S. L. Davis (Eds.), *Handbook of sexuality-related measures: A compendium* (pp.116-118). Thousand Oaks, CA: Sage.

Muehlenhard, C. L., & Linton, M. A. (1987). Date rape and sexual aggression in dating situations: Incidence and risk factors. *Journal of Counseling Psychology, 34*, 186-196.

Mulder, M. R. & Willem, W. (1996). Social workers' and police officers' perceptions of victim credibility: Perspective-taking and the impact of extra-evidential factors. *Psychology, Crime and Law 2*, 307-319.

Nesdale, D. & Scarlett, M. (2004). Effects of group and contextual factors on preadolescent children's attitudes to school bullying. *International Journal of Behavioural Development, 28*, 428-434.

Nowak, K. L., Krcmar, M., & Farrar, K. M. (2008). The causes and consequences of presence: Considering the influence of violent video games on presence and aggression. *Presence: Teleoperators and Virtual Environments, 17*, 256-268.

Obermann, M.L. (2011). Moral disengagement in self reported and peer-nominated school bullying. *Aggressive Behaviour, 37,* 133-144.

Oblinger, D. (2004). The next generation of educational engagement. *Journal of Interactive Media in Education, 8,* 1-18.

Okolo, C. (1992). The effect of computer-assisted instruction format and initial attitude on the arithmetic facts proficiency and continuing motivation of students with learning disabilities. *Exceptionality,* 3, 195-211.

Olson, C .K., Kutner, L. A. & Warner, D. E. (2008). The role of violent video game content in adolescent development: Boys' perspectives. *Journal of Adolescent Research, 23,* 55-75.

Olson, C. K., Kutner L., & Beresin, E. V. (2007). Children and video games: How much do we know? *Psychiatric Times, 24,* 41-45.

Olson, C. K., Kutner, L. A., Baer, L., Beresin, E. V., Warner, D. E., & Nicholi, A. M., II. (2009). M-rated video games and aggressive or problem behavior among young adolescents. *Applied Developmental Science, 13,* 188-198.

Osofsky, M.J., Bandura, A., & Zimbardo, P.G. (2005). The role of moral disengagement in the execution process. *Law and Human Behaviour, 29,* 371-393.

Oyserman, D., Bybee, D., Terry, K., & Hart-Johnson, T. (2004). Possible selves as roadmaps. *Journal of Research in Personality, 38,* 130–149.

Paciello, M., Fida, R., Tramontano, C., Lupinetti, C., & Capara, G.V. (2008). Stability and change of moral disengagement and its impact on aggression and violence in late adolescence. *Child Development, 79*, 1288-1309.

Padilla-Walker, L. M., Nelson, L. J., Carroll, J. S. & Jensen, A. C. (2009). More than just a game: Video game and internet use during emerging adulthood. *Journal of Youth Adolescence, 39*, 103-113.

Passig, D., & Eden, S. (2001). Virtual reality as a tool for improving spatial rotation among deaf and hard of hearing children. *CyberPsychology and Behavior, 4*, 681-686.

Pelton, J., Ground, M., Forehand, R., & Brody, G. (2004). The moral disengagement scale: Extension with an American Minority Sample. *Journal of Psychopathology and Behavioural Assessment, 26*, 31-39.

Perren, S. & Gutzwiller-Helfenfinger, E. (2012). Cyber bullying and traditional bullying in adolescence: Differential roles of moral disengagement, moral emotions and moral values. *European Journal of Developmental Psychology, 9*, 195-209.

Pervin, K., & Turner, A. (1998). A study of bullying of teachers by pupils in an Inner London school. *Pastoral Care in Education, 16*, 4–10.

Petry, N. M. & O'Brien, C. P. (2013). Internet gaming disorder and the DSM-5. *Addiction, 108*, 1186-1187.

Piaget, J. (1965). *The moral judgment of the child.* The Free Press: New York.

Power, F. C., Higgins, A., & Kohlberg, L. (1989). *Lawrence Kohlberg's Approach to Moral Education.* New York: Columbia University Press.

Pollard, P. (1992). Judgments about victims and attackers in depicted rapes: a review. *British Journal of Social Psychology, 31*, 307-326.

Ponari, C.D., & Wood, J. (2010). Peer and cyber aggression in secondary school students: The role of moral disengagement, hostile attribution bias and outcome expectancies. *Aggressive Behavior, 36*, 81-94.

Poulou, M. (2001). The role of vignettes in the research of emotional and behavioural difficulties. *Emotional and Behavioural Difficulties, 6*, 50-62.

Pratchett, R. (2005). *GDigital play, digital lifestyles*. Available from http://open.bbc.co.uk/newmediaresearch/files/BBC_UK_Games_Research_2005.pdf.

Prensky, M. (2001). *Digital Game-Based Learning*.New York: McGraw Hill.

Prot, S., McDonald, K. A., Anderson, C. A. & Gentile, D. A. (2012). Video games: Good, bad or other? *Pediatric Clinics of North America, 59*, 647-658.

Rahman, N. (1996). Caregivers' sensitivity to conflict: the use of vignette methodology, *Journal of Elder Abuse and Neglect, 8*, 35-47.

Rayburn, N., Mendoza, M., & Davidson, G. (2003). Bystander Perception of Perpetrators and victims of hate crime. *Journal of Interpersonal Violence, 18*, 1055-1074.

Reinecke, L. (2009). Games at work: The recreational use of computer games during working hours. *CyberPsychology and Behavior, 12*, 461-465.

Richmond, J. & Wilson, J. C. (2008). Are graphic media violence, aggression and moral disengagement related? *Psychiatry, Psychology and Law, 15*, 350-357.

Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). Generation M^2: Media in the lives of 8-18 year-olds. Menlo Park, CA: Kaiser Family Foundation.

Rigby, K. & Slee, P. T. (1991). Bullying among Australian school children: reported behaviour and attitudes to victims. *Journal of Social Psychology, 131*, 615–627.

Rigby, K. & Slee, P. T. (1993). Dimensions of interpersonal relating among Australian school children and their implications for psychological well-being. *Journal of Social Psychology, 133*, 33–42.

Roberts, D. F., & Foehr, U. G. (2004). *Kids and Media in America*. New York: Cambridge University Press.

Roberts, D. F., Foehr, U. G., & Rideout, V. J. (2005). *Generation M: Media in the Lives of 8-18 year-olds*. Menlo Park, CA: Kaiser Family Foundation.

Rosenberg, M. J. & Hovland, C. I. (1960). Cognitive, affective, and behavioural components of attitudes. In Hovland, C. I. & Rosenberg, M. J. (Ed.). *Attitude Organisation and Change: An Analysis of Consistency Among Attitude Components* (pp.1-14), New Haven, CT: Yale University Press.

Rosser, J. C, Lynch, P. J., Cuddihy, L., Gentile, D.A., Klonsky, J., & Merrell, R. (2007). The impact of video games on training surgeons in the 21st century. *Archives of Surgery, 142*, 181-186.

Rubin, A. M., West, D. A., & Mitchell, W. S. (2001). Differences in aggression, attitudes towards women, and distrust as reflected in popular music preferences. *Media Psychology, 3*, 25-42.

Sakamoto, A. (1994). Video game use and the development of socio-cognitive abilities in children: Three Surveys of elementary school students. *Journal of Applied Social Psychology, 24*, 21–42.

Saleem, M., & Anderson, C. A. (2012). The Good, the Bad, and the Ugly of Electronic Media. In Dvoskin, J., Skeem, J. L., Novaco, R. W., & Douglas, K. S. (Eds.) *Applying Social Science to Reduce Violent Offending* (pp. 83-101). New York: Oxford University Press.

Salmivalli, C. (1999). Participant role approach to school bullying: Implications for interventions. *Journal of Adolescence, 22,* 453-459.

Schafer, D. M. (2012). Moral choice in video games: An exploratory study. Media Psychology Review, 5, Retreived from http://mprcenter.org/review/shafermoralchoicegames/?print=pdf.

Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video game produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology, 46,* 934-942.

Shaw, J. I., Borough, H. W., & Fink, M. I. (1994). Perceived sexual orientation and helping behavior by males and females: The wrong number effect. *Journal of Psychology and Human Sexuality, 6,* 73-81.

Sheese, B. E. & Grazinio, W. G. (2005). Deciding to defect: The effects of video-game violence on cooperative behavior. *Psychological Science, 16,* 354-357.

Siegel, I. (1991). 'Nintendonitis', *Orthopedics, 14*, 745.

Sigurdsson, J. F., Gudjonsson, G. H.,Bragason, E., Kristjansdottir, E. & Sigfusdottir, I. D., (2006). The role of violent cognition in the relationship between personality and the involvement in violent films and computer games. *Personality and Individual Differences 41*, 381-392.

Slater, M. D., Henry, K. L., Swaim, R.C., & Anderson, L. L. (2003). Violent media content and aggressiveness in adolescents: A downward spiral model. *Communication Research, 30,* 713-736.

Slater, M. D., Henry, K. L., Swain, R. C., & Anderson, L. L. (2003). Violent media content and aggressiveness in adolescents. *Communication Research, 30,* 713-736.

Sleuth, E. & Bull, R. (2011). Male rape victim and perpetrator blaming. *Journal of Interpersonal Violence, 25,* 969 -988.

Smith, P. K., & Levan, S. (1995). Perceptions and experiences of bullying in younger pupils. *British Journal of Educational Psychology, 65,* 489-500.

Smith, S. L., Lachlan, K., & Tamborini, R. (2003). Popular video games: Quantifying the presentation of violence and its context. *Journal of Broadcasting and Electronic Media, 47,* 58-76.

Snodgrass, J. G., Lacy, M.G., Denagh, H. J., Fagan, J. & Most, D. E. (2011). Magical flight and monstrous stress: Technologies of absorption and mental wellness in Azeroth, *Culture Medicine and Psychiatry, 35,* 26- 62.

South, C. R. & Wood, J. (2006). Bullying in prisons: The importance of perceived social status, prisonization and moral disengagement. *Aggressive Behaviour, 32,* 490-501.

Staude Muller, F., Bleisener, T. & Luthman, S. (2008). Hostile and hardened? An experimental study on (de)sensitisaion to violence and suffering through playing video games. *Swiss Journal of Psychology, 67,* 41-50.

Steinberg, L. (2004). Risk-taking in adolescence: What changes, and why? *Annals of the New York Academy of Sciences, 10*(2), 51-58.

Subrahmanyam, K., Kraut, R. E., Greenfield, P. M., & Gross, E. F. (2000). The impact of home computer use on children's activities and development. *Future of Children,* 10, 123-144.

Sugarman, D. B. & Frankel, S. L. (1996). Patriarchal ideology and wife-assault: A meta-analytic review. *Journal of Family Violence, 11,* 13-40.

Sutton, R. M., & Winnard, E. J. (2007). Looking ahead through lenses of justice: The relevance of just-world beliefs to intentions and confidence in the future. *British Journal of Social Psychology, 46,* 649-666.

Swing, E. L., Gentile, D. A., & Anderson, C. A. (2008). Violent video games: Learning processes and outcomes. In R. E. Ferdig (Ed.), *Handbook of Research on Effective Electronic Gaming in Education.* (pp. 876-892). Hershey, PA: Information Science Reference.

Tamborini, R., Eastin, M. S., Skalski, P., Lachlan, K., Fediuk, T. A., & Brady, R. (2004). Violent virtual video games and hostile thoughts. *Journal of Broadcasting and Electronic Media, 48,* 335-357.

Toussaint, L. & Web, J. R. (2005). Gender differences in the relationshio between empathy and forgiveness. *The Journal of Social Psychology, 145*, 673-685.

Tyler, T. R., & Rasinski, K. A. (1984). Comparing psychological images of the social perceiver: The role of perceived informativeness, memorability and affect in mediating the impact of crime victimization. *Journal of Personality and Social Psychology, 46*, 308–329.

Uhlmann, E., & Swanson, J. (2004). Exposure to violent video causes increase automatic aggressiveness. *Journal of Adolescence, 27,* 41-52.

Viera, E. T., & Krcmar, M. (2011). The influences of video gaming on US children's moral reasoning about violence. *Journal of Children and Media, 5,* 113-131.

Wack, E. R. & Tantelff-Dunn, S. (2009). Cyber sexy: Electronic game play and perceptions of attractiveness among college aged men. *Body Image, 5,* 365-374.

Wakelin, A., & Long, K. M. (2003). Effects of victim gender and sexuality on attributions of blame to rape victims. *Sex Roles, 49,* 477–487.

Weaver, A. J. & Lewis, N. L. (2012). Mirrored Morality: An exploration of moral choice in video games. *Cyberpsychology, Behaviour and Social Networking, 15,* 1-5.

Weber, R., Behr, K., Tamorini, R., Ritterfield, U., & Mathiak, K. (2009). What do we really know about first person shooter games: An event related, high resolution content analysis. *Journal of Computer Mediated Communication, 14,* 1016-1037.

Weber, R., Ritterfield, U., & Mathiak, K. (2006). Does playing violent video games induce aggression? Empirical evidence if a functional magnetic resonance imaging study. *Media Psychology, 8,* 39-60.

Weiner, B. (1986). *An Attributional Theory of Motivation and Emotion*. New York: Springer.

Whatley, M. A., & Riggio, R. E. (1993). Gender differences in attributions of blame for male rape victims. *Journal of Interpersonal Violence, 8,* 502-511.

Whitney, I., & Smith, P. K. (1993). A survey of the nature and extent of bullying in primary and secondary schools. *Educational Research, 35,* 34–39.

Williams, J., Greene, S., Doyle, E., Harris, E., Layte, R., McCoy, S., McCrory, C., Murray, A., Nixon, E., O'Dowd, T., O'Moore, M., Quail, A., Smyth, E., Swords, L. & Thornton, M. (2009). *Growing up in Ireland: The lives of 9 year olds*. Dublin: The Office of Minister for Health and Children.

Wood, R. T. A., Griffiths, M. D., Chappell, D. & Davies, M. (2004). The structural characteristics of video games: A psycho-structural analysis. *CyberPsychology and Behavior*, *7*, 1-10.

Wood, R. T. A., Griffiths, M. D., & Parke, A. (2007). Experiences of time loss among video-game players: An empirical study. *CyberPsychology and Behaviour*, *10*, 38-44.

Workman, J. E., & Freeburg, E. W. (1999). An examination of date rape, victim dress and perceiver variables within the context of attribution theory. *Sex Roles, 41*, 261-277.

Ybarrondo, B. A. (1984). *A study of the effectiveness of computer-assisted instruction in the high school biology classroom*. Idaho (ERIC Document Reproduction Service No Ed265015).

Zagal, J. P. (2009). Ethically notable video games: Moral dilemas and gameplay. Proceedings of the Digital Interactive Games research Association Conference (DiGRA 2009), retrieved from http://www.digra.org/wp-content/uploads/digital-library/09287.13336.pdf.

Zimbardo, P.G. (1969). The human choice: Individuation, reason and order versus deindividuation, impulse and chaos. *Nebraska Symposium on Motivation, 17*, 237-307.

Appendix 1

Study 1: Victim Concern Scale Questionnaire

Participant Number: _____

Questionnaire 1: Victim Concern Scale

This questionnaire is interested in your **concern** for different people.

Concerned: means to be worried about, disturbed or troubled by something.

Using a scale, you are asked to indicate to what extent you think people should be **concerned** about different types of victims of crimes

For example:

If you thought that people should be "somewhat concerned" about victims of home vandalism, you would mark a **"2**" on the scale for that statement

1	**2** ◯	3	4	5
Not Concerned	**Somewhat Concerned**	Concerned	Very Concerned	Extremely Concerned

Please consider each type of victim separately and give your rating for what extent you think people should be **concerned** about the following types of victims of crime.

1. **Victims of kidnapping**

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

2. Victims of violent assault

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

3. Adult victims

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

4. Drug Dealers who are victims

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

5. Victims of home break-ins and theft

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

6. Drug users or addicts who are victims

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

7. Victims of domestic assault

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

8. Female victims

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

9. Victims who are grandparents

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

10. Victims of car break-ins

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

11. Victims who are gang-members

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

12. Victims of child molestation

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

13. Victims of car theft

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

14. Male victims

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

15. Victims with a criminal history

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

16. Victims of Rape

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

17. Victims who are physically disabled

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

18. Victims of theft of purse or wallet

1	2	3	4	5
Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned

THANK YOU

PLEASE MOVE ON TO QUESTIONNAIRE 2 NOW

Appendix 2: Video Game Playing Questionnaire (Study 1)

Questionnaire 2: Video Game Demographic Questionnaire

Please Circle: **Male** **Female** **Age** ☐

1. Please tick this box if you **never** play video games ☐

2. Please indicate if you play **regularly** on any of the following: *(Please Circle)*

- PSP
- Nintendo DS
- Wii
- Xbox 360
- Playstation 3
- PC Games
- Mobile Phone games
- Online games

3. Do you communicate/text chat with others when you are playing games
(please circle)

Yes **No**

4. Please name your 5 favourite video games

1	
2	
3	
4	
5	

You will now be asked questions related to each of these 5 games.
Please be as honest as possible.
Thank you.

Game 1

Name of Game:_____

A. How often did you play this game during the past month

_____

1 2 3 4 5 6 7

Rarely
Often

B. How often did you play this game during the last year?

_____

1 2 3 4 5 6 7

Rarely
Often

C. How bloody/gory is the content of this game

_____

1 2 3 4 5 6 7

Very little
Extremely

D. Please classify this game as one of the following type of game *(Please tick one*)

Sports	
Fantasy	
Educational	
Skills	
Fighting	
Fantasy	
Other (Please specify)	

Game 2

Name of Game:_____

A. How often did you play this game during the past month

_____

1 2 3 4 5 6 7

Rarely
Often

B. How often did you play this game during the last year?

_____

1 2 3 4 5 6 7

Rarely
Often

C. How bloody/gory is the content of this game

_____

1 2 3 4 5 6 7

Very little
Extremely

D. Please classify this game as one of the following type of game *(Please tick one)*

Sports	
Fantasy	
Educational	
Skills	
Fighting	
Fantasy	
Other (Please specify)	

Game 3

Name of Game:_____

A. How often did you play this game during the past month

_____

1 2 3 4 5 6 7

Rarely
Often

B. How often did you play this game during the last year?

_____

1 2 3 4 5 6 7

Rarely
Often

C. How bloody/gory is the content of this game

_____

1 2 3 4 5 6 7

Very little
Extremely

D. Please classify this game as one of the following type of game *(Please tick one)*

Sports	
Fantasy	
Educational	
Skills	
Fighting	
Fantasy	
Other (Please specify)	

Game 4

Name of Game:_____

A. How often did you play this game during the past month

_____

1 2 3 4 5 6 7

Rarely
Often

B. How often did you play this game during the last year?

_____

1 2 3 4 5 6 7

Rarely
Often

C. How bloody/gory is the content of this game

_____

1 2 3 4 5 6 7

Very little
Extremely

D. Please classify this game as one of the following type of game *(Please tick one)*

Sports	
Fantasy	
Educational	
Skills	
Fighting	
Fantasy	
Other (Please specify)	

Game 5

Name of Game:_____

A. How often did you play this game during the past month

_____

1 2 3 4 5 6 7

Rarely
Often

B. How often did you play this game during the last year?

_____

1 2 3 4 5 6 7

Rarely
Often

C. How bloody/gory is the content of this game

_____

1 2 3 4 5 6 7

Very little
Extremely

D. Please classify this game as one of the following type of game *(Please tick one*)

Sports	
Fantasy	
Educational	
Skills	
Fighting	
Fantasy	
Other (Please specify)	

Appendix 3: Vignette employed in Study 2

1. Man shot in back in 'drug row'

MAN is recovering in hospital after he was shot in the back over an alleged drug deal that went wrong. **Thomas McWilliams**, 24, was blasted as he walked down the street. Cops claim he was given no warning before he heard a loud bang in Carntyne, Glasgow. And they added Williams only realised he had been hit when he felt pain in his back.

2. Hit and run arrest

ONE MAN HAS BEEN ARRESTED by police investigating the death of a girl in a hit-and-run incident in London at the weekend. **Michelle Keeley**, 20, was killed after being struck by a car as she left a nightclub in the centre of the city at around 2.30 yesterday morning. A burnt-out car was later found on the outskirts of town, not far from where the accident occurred.

3. Soldier wounded in Afemale gamerhanistan

A National Army patrol, yesterday struck an explosive device resulting in an Australian soldier being wounded in Action, suffering serious blast and fragmentation wounds. After being treated at the scene, **Ken Mitchell** was evacuated to the a nearby medical facility. The soldier remains in a serious condition under the care of ISAF medical staff.

4. Man shot by crime bosses

Two purported crime bosses were arrested Thursday on suspicion of shooting a man George **Smith** who owed them a large sum of money . California state prosecutor said the suspects, were captured with seven assault rifles and acknowledged killing the victim.

5. Restaurant workers tied up in armed raid

A manager and chef at a restaurant in Dorset have been tied up during an armed robbery. Two raiders stole an undisclosed amount of money from the Restaurant in Leeds, before feeling in a Honda estate they had stolen from the scene. On entry to the building the two employees were confronted and restrained by armed robbers whilst the robbery took place. Neither of the employees **Rachel Harmes and John Livingston** was harmed during the incident although they were badly shaken.

6. Police chief killed

Gunmen shot to death the police chief of the town of Taretan, in western Mexican state. Police chief **Michael Richards** was driving with his wife and children on a highway when assailants in another vehicle forced him to stop. He got out of his vehicle and was killed by a hail of bullets fired by assault rifles. The assailants then fled, and his family was unharmed.

7. City police officer killed in car crash while chasing suspect

City police officer Paula **Gibson** was killed as she chased a suspected car thief. Officer Paula Gibson crashed his patrol car into a tree while chasing a black Ford Mustang near the 10 Freeway in Palm

Springs. The Mustang was allegedly stolen by an ex-convict who authorities were already after.The suspected car thief crashed a few blocks after Gibson lost control of his squad car. The 29-year-old police officer died at the scene.

8. 'I saw a man being attacked then fled for my life' British man tells police

A key British witness has told police how he fled for his life after seeing a knife attack in a nightclub. **Michael Cooke**, 35, , today told how he was left "shocked and appalled" after witnessing the vicious assault last year. He was then threatened by a gang of men who told him that his family would be in danger if he told them what he had seen. Cooke said he had now come forward after the police promised he would be safe.

9. Man's Car Stolen in Front of him

Stephen Byrne was left shaken and distraught recently when his Ford Focus was stolen just as he was about to get into it. Businessman Stephen dropped his keys while going back into his house and the thief snatched them and jumped into the car in an early morning robbery.

10. Man shot, killed by officer had extensive criminal history

A 34-year-old man who died Monday after attempting to steal a police car and crashing into a bus downtown had an extensive criminal history, police have revealed. Police say 34-year-old Joseph Molloy was shot and wounded by a police officer after he appeared to attempt to break into a police car. A police investigation is currently underway.

11. Wounded soldier in good spirits

The mother of a 20-year-old soldier Des Coyle says he's in good spirits despite being wounded while trying to rescue the crew of a downed helicopter in the line of duty. Mrs Coyle said that she had talked to her son on Monday. He's in a military hospital in Germany, recovering from serious wounds suffered Saturday near Kabul. She says her son expects to fly home on Friday, but will require extensive medical support if he is to walk again.

12. Man injured in pub shooting

A man is recovering in hospital after a gangland-style shooting in a bar.

Two armed and masked men entered McDonagh's pub at around 9.45pm on Saturday night. The pair opened fire on the 41-year-old victim **Lee Byrne** before escaping on foot.

The man was rushed to hospital, where his injuries are not thought to be life-threatening. It is understood that the victim, is known to police due to previous convictions.

Control articles

13. **. Man Dies Days After Tree Falls on Van**

A 33-year-old man has died two days after a rotted tree fell on his van on the Northwest Side. **Jerry Smith** died Friday morning after the tree fell on his white van while he was at work, according to police.

14. Driver loses control, crashes into house

A driver who lost control of his vehicle and crashed into the concrete entryway of a house overnight is facing charges of impaired driving. No one was injured in the accident, which happened around 1 a.m. Nov. 19. Police stated officers spotted a vehicle being "driven in an erratic manner" by Alan Tiernan, on Lloyd Street, before it turned onto nearby housing estate and crashed.

13. Woman guilty of neglecting dogs, cats

Elizabeth Jones a 69-year-old woman was today convicted on three counts of animal neglect.

Malone had been arrested for keeping a large number of dogs and cats under what one officer called "horrific" conditions at a home on East Benham Lane. Neighbours had tipped off the police after becoming concerned for the welfare of the animals. Deputies immediately seized nine dogs, six puppies, 10 cats, and six kittens, but other animals remained running at large near the residence.

15. Man arrested for shoplifting

Liam Stephens has been arrested on suspicion of shoplifting in Gloucester city centre.Police officers were called to a sports store in Northgate Street at around 11am yesterday, after a tip off from a member of the public. The man was believed to have taken a number of sporting items from the store. Police arrested the 39-year-old man from Gloucester, who was still being held by police.

Appendix 4: Moral Disengagment Scale (Study 4)

In this survey, approximately 500 people will be asked to complete a survey that asks questions about people and their interests and attitudes. It will take approximately 7-10 minutes to complete the questionnaire. Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for us to learn your opinions. Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact the researcher by email at research2012lmcl@gmail.com.Thank you very much for your time.

Male **Female** **Age:** _____
(Please circle)

What is your opinion?

	1 = Strongly Disagree	2 = Disagree	3 = Neither Disagree Nor Agree	4 = Agree	5 = Strongly Agree
It is alright to fight to protect your friends	❑	❑	❑	❑	❑
Slapping & shoving someone can be just a way of joking	❑	❑	❑	❑	❑
Damaging some property is no big deal when you consider that others are beating people up	❑	❑	❑	❑	❑
A person in a gang should not be blamed for the trouble that the gang causes	❑	❑	❑	❑	❑
If people are living under bad conditions, they cannot be blamed for behaving aggressively.	❑	❑	❑	❑	❑
It is okay to tell small lies because they don't really do any harm	❑	❑	❑	❑	❑
Some people deserve to be treated like animals	❑	❑	❑	❑	❑
If people fight & misbehave in a work setting, it is their bosses fault.	❑	❑	❑	❑	❑
It is alright to beat up someone who badmouths your family.	❑	❑	❑	❑	❑
To hit someone who is obnoxious is just teaching them a "lesson"	❑	❑	❑	❑	❑
Stealing some money is not too serious compared to those who steal a lot of money.	❑	❑	❑	❑	❑
A person who only suggests breaking rules should not be blamed if others go ahead & do it.	❑	❑	❑	❑	❑
If people are never disciplined, they should not be blamed for misbehaving.	❑	❑	❑	❑	❑
People do not mind being teased because it shows that you have an interest in them.	❑	❑	❑	❑	❑
It is okay to treat badly someone who behaved like a "fool".	❑	❑	❑	❑	❑
If people are careless where they leave their things, it is their own fault if those things get stolen	❑	❑	❑	❑	❑

What are your thoughts on the following?

	1 = Strongly Disagree	2 = Disagree	3 = Neither Disagree Nor Agree	4 = Agree	5 = Strongly Agree
It is alright to fight when your group's honour is threatened.	❑	❑	❑	❑	❑
Taking someone's bike without their permission can be "just borrowing" it.	❑	❑	❑	❑	❑
It is okay to insult someone because beating them is worse.	❑	❑	❑	❑	❑
If a group gets together to do something harmful, it is unfair to blame any one person in the group for it.	❑	❑	❑	❑	❑
Kids cannot be blamed for using bad words when all their friends do it.	❑	❑	❑	❑	❑
Teasing someone does not really hurt them.	❑	❑	❑	❑	❑
Someone who is obnoxious does not deserve to be treated like a human being.	❑	❑	❑	❑	❑
People who get mistreated usually do things to deserve it.	❑	❑	❑	❑	❑
It is alright to lie to keep your friends out of trouble.	❑	❑	❑	❑	❑
It is not a bad thing to get "high" once in a while.	❑	❑	❑	❑	❑
Compared to the illegal things that people do, taking some things from a store without paying for them is not very serious.	❑	❑	❑	❑	❑
It is unfair to blame a child who played only a small part in the harm caused by a group.	❑	❑	❑	❑	❑
Kids cannot be blamed for misbehaving if their friends pressured them to do it.	❑	❑	❑	❑	❑
Insults among children are harmless.	❑	❑	❑	❑	❑
Some people have to be treated roughly because don't have any feelings that can be hurt.	❑	❑	❑	❑	❑
Children are not at fault for misbehaving if their parents force them too much.	❑	❑	❑	❑	❑

Please indicate if you do any of the following

1. Play team competitive sports for more than 1 hour per week
2. Play video games for more than 2 hours per week
3. Neither

If you play video games please indicate which type of games you play regularly

Sports
War/fighting
Shooter (1st person/3rd person)
Puzzle
Other _____

Exercise games (Wii/Kinect)
Role play games
Adventure
Racing games

How often would you play video games with others:

Online : every time I play most of the time when I play sometimes never

In person: every time I play most of the time when I play sometimes never