

Aggression and Exposure to Violent Video Games: The Role of Agreeableness, Neuroticism and Empathy

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Declaration

‘I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.’

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Abstract

The aim of the current research focuses on whether the personality dimensions of agreeableness and neuroticism affected aggressive responses to violent video games. In addition to whether empathy levels would determine aggression after being exposed to violent video games whilst also controlling for desensitisation. The experiment consists of 43 male (N=22) and female (N=21) participants who were split into 2 conditions - the control group who played a non-violent videogame (Firewatch) and the experimental group who played a violent videogame (Black Ops 3, Zombies) on the PS4. Participants were also connected, while playing the game, to a Galvanic Skin Response (GSR) and Electrocardiography (ECG) unit measuring skin conductance and heart rate. Results found that neither agreeableness nor neuroticism affected aggressive responses, however, empathy was found to be significant. Desensitisation was found not to contribute to this significant effect, as evaluated by physiological responses of players and previous gaming experience.

1. Introduction

The notion of a causal relationship between violent video games (VVG) and increased aggression has been around for decades. Since then it has produced numerous research into the area. The US Surgeon General – Dr Jesse Steinfeld in 1972 was the first to mention this relationship officially and held the first hearing about violent tv media and warned about its effects on children. The members present concluded that violent media on tv did, in fact, have influences on adolescent crimes (Gentile, 2003). Attention has since shifted initially from film to tv then to video games due to its growing popularity in recent years. The video game industry is currently bigger than tv, earning 46 billion a year in 2010 (Chatfield, 2010) to 138 billion by the end of 2018 (Ell, 2018). This demonstrates how big the medium has become and shows why research in this area is growing. Gentile and Anderson (2003) demonstrated the growth and popularity of the preferred form of media - video games consumed among all ages. Where 2-7 aged children on average consume 43 minutes of video gameplay per day additionally stating that 89% of video games involve violent content (Gentile & Anderson, 2003) validating continued research into the area.

The recent rise in popularity of Fortnite, a third person co-op survival game, has brought about more attention and players to the community of video games. It has amassed 125 million players from its 2017 launch gaining more players than PS4 and Nintendo Switch owners combined (Gilbert, 2018) showing how far the reach of video games can go. Due to the ease of access and free to play Battle Royale mode on all platforms it brings into question how it affects its players from teens to adults. A recent study by the Entertainment Software Association (2015) found that both males and females enjoy video games along with individuals of different genders and educational backgrounds finding that anyone and everyone can play video games. Most research into video games focuses on how aggression

can be caused by participation in violent video gaming. The current study will focus on how violent media – more specifically, violent video gaming can affect one's aggression levels.

1.1 Controversy in Previous Research

Firstly, what are violent video games? This is a form of violent media which are described as any purposeful actions intended on harming others, either human or non-human (fictional characters such as Tom and Jerry etc. within these video games, violence can occur which is thought to induce or promote more proactive aggression in players (Bushman & Anderson, 2001) whilst also fostering more aggressive expectations in players (Bushman & Anderson, 2002). However previous research has shown mixed results (Uhlmann & Swanson, 2004; Anderson & Carnagey, 2009; Anderson et al; 2010; Ferguson & Kilburn, 2009, Ferguson, 2007) and the question of whether or not violent video games have an effect on individuals aggression levels is still debatable and argued over by researchers.

Additionally, Kaye and Bryce (2012) suggested that social interactions like multiplayer games may facilitate the aggression or irritation established when playing video games suggesting that it isn't the video game itself but the interactions with other players that cause frustration. This frustration is suggested to be caused by competitiveness and a lack of social relationships with other players in the game therefore, gameplay experience in multiplayer games are dependent upon social interactions. Moreover, Markey, Markey and French (2015) investigated whether there was a relationship between real-world violence and video game violence and found no such link between them but surprisingly found the opposite, where violent crimes decreased in reaction to violent videogame play which suggests against the current hypotheses.

A considerably sizable meta-analysis, however, was conducted by Anderson et al. (2010) on 130 previous studies looking at whether violent video games impact one's aggression, empathy and prosocial behaviour within western countries. Anderson et al looked

at six outcome variables which were looked at independently. They were physically aggressive behaviour, aggressive thought, aggressive feelings, physiological arousal, prosocial behaviour and a combined outcome variable of empathy/desensitisation variable. The study included a large number of studies and placed high-quality inclusion criteria which excluded studies of 'low quality' methodologies. While also examining different designs such as experimental, longitudinal and cross-cultural studies. The analysis of results found that there was a significant correlation on physically aggressive behaviour on video game violence (VGV) as well as aggressive cognition and effect. In addition to a relationship between violent video gaming to a lack of empathy and desensitisation and a lack of prosocial behaviour essentially concluding that there is a positive correlation between violent video games (VVG) and the different aspects of aggression, regardless of the design.

However, in disagreement to Anderson et al's. (2010) study Ferguson and Kilburn (2010) argued for previous literature that found no significant relationship with aggression to violent video games. Ferguson and Kilburn (2010) argued that some "methodological issues" (Ferguson & Kilburn, 2010, pg.1) were made, questioning their subjective view of the inclusion criteria (Anderson et al., 2010), which would have influenced their final results and its interpretations. As well as this their use of studies including unstandardized test measures. In essence questioning their decision making prior to analysing the studies such as, excluding studies using "bad practices" (Ferguson & Kilburn, 2010), publication bias (similar statements made in previous papers (Ferguson, 2007, Ferguson & Kilburn, 2009)) and questioning their interpretation of results. While additionally discrediting their claims about learning theory stating that more exposure to media violence will cause an increase in youth violence, however, the opposite relationship is seen. Similar to Markey, Markey and French's (2015) study.

These articles show an example of the conflicting views shared by researchers and demonstrate that the area should be more evaluated and researched. Although in response to this, Huesmann (2010) gave an article of conclusion after evaluating both papers, previous research and theories stating that evidence given by Anderson et al (2010) in fact does show a valid significant difference between VVG's and aggression. Although research does suggest that there is a positive link between VVG's and aggression (Bushman & Anderson, 2001, Anderson et al., 2010, Anderson et al., 2008, Bushman & Anderson, 2002). Nonetheless, more recent research (Markey & Markey, 2010, Bettencourt 2006, Markey & Scherer, 2009) proposes that this may not be the case and the thought that everyone will become aggressive after experience with VVG is unjust and may have been overestimated by researchers (Markey & Markey, 2010; Ferguson et al., 2011). This may be due to a case of publication bias as suggested by Ferguson (2007) and Markey and Markey (2010) suggest that personality traits should be considered when examining whether VVG's may have a negative effect proposing a susceptibility towards aggression when playing violent video games.

1.2 Personality

Personal difference is a factor that is suggested to mediate VVG's effect on aggression. Prior research has not done well in representing personality differences when examining the link between media violence and aggression as a potential mediator (Ferguson et al., 2011) Although, Ferguson et al., (2011) recalled 2 theories that may explain these differences of mediation for personality on this link. The first being that of the "Catalyst Model" proposed by Ferguson and Beaver (2009) stating that aggression can occur upon the right interaction between one's personality, genes and environmental factors. The second theory being that of the "Peanut Butter" theory derived from that of Markey and Markey's (2010) study, which proposes that certain individuals may be more at risk to VVG's in comparison to others. VVG's may be harmless to some but lethal to others. These theories

show that personality should not be disregarded or at least controlled for when measuring this link.

Moreover, a study by Markey and Markey (2010) proposed that individuals with the correct combination of personality traits are more susceptible to aggression after exposure to video game violence (VGV). These traits were high neuroticism, low agreeableness and high conscientiousness. They suggest that this combination of personality traits taken from the five-factor model (FFM) can likely predict the levels of aggressiveness in individuals. If it is known what underlying mechanisms occur such as how and why individuals are influenced by VVG's, then implications and regulation can be made to future research (Bettencourt et al., 2006).

The FFM dimensions of personality are an openness to new experiences, conscientiousness, extraversion, agreeableness and neuroticism. The FFM also known as the big five factor model can be measured using 5 questionnaires which are, The Big Five Inventory (BFI) which uses self-reports and has 44 items, the Big Five Aspect Scales (BFAS) containing 100 items developed by Colin DeYoung in 2007, The International Personality Item Pool (IPIP) by Lewis Goldberg (1996), the Ten Item Personality Questionnaire (TIPI) produced by Gosling, Rentfrow and Swann, (2003) and finally, the NEO PI-R, a 240-item produced by Costa and McCrae (1992). The use of the FFM has been widespread throughout the world and is the most popular when measuring personality traits. It has the ability to cover a wide range of one's personality justifying its use (Markey & Markey, 2010).

Additionally, Bettencourt et al. studied a range of personality types and their effects on aggression in situations of provocation ("forced to aggress") and neutral or non-provocation ("free to aggress") (Bettencourt et al., 2006, pg. 760). Authors measured various personality variables including trait aggression, trait irritability, trait anger, agreeableness and neuroticism. Using these variables they developed two categories, those that scored higher on

the personality variables (“aggression prone”) and those that aggressed only when provoked (“provocation sensitive”) (Bettencourt et al., 2006, pg. 765). Results found that in both cases both were met with aggressive behaviour no matter the type of provocation. However, this study was not tested on the context of video games but was a general meta-analysis on aggression and its potential effects. Therefore, it would follow to test selected personality traits and measure significance when exposing players to violence in terms of VVG’s. The use of agreeableness and neuroticism will be examined further as it seems to be more associated with aggression compared to other dimensions on the FFM (Bettencourt et al., 2006).

1.3 Agreeableness

The personality trait of agreeableness means kind, friendly, altruistic and cooperative (Markey & Markey, 2010; Graziano & Eisenberg, 1997). It is considered one of the least understood personality dimensions in comparison to other FFM personalities (i.e. Emotional Stability) as it wasn’t as examined or developed by scholars (Jensen- Campbell & Graziano, 2001). Furthermore, agreeableness may be confused with extraversion as they are both similar in that they deal with social behaviour. While agreeableness denotes to a motivation to preserve positive interpersonal relationships with others (Jensen- Campbell & Graziano, 2001), extraversion deals with its social influence. Interestingly though, Jensen- Campbell and Graziano state that the agreeableness trait may be phenomenological in nature and a highly agreeable person may be motivated to come up with strategies for cooperation and negotiation with an individual who may be argumentative.

In contrast, if one is low in agreeableness, they will be antagonistic such as being hostile, unfriendly, may also lack the ability to express their emotions and maybe socially uncommitted (Bettencourt et al., 2006) while their motivations for relationships with others will be relatively low. Jensen- Campbell and Graziano (2001) accurately predicted that those

low in agreeableness was related to responses to conflict. Hypothesising that high agreeable participants would use more beneficial and constructive strategies when faced with social conflicts as opposed to more destructive tactics (e.g. verbal abuse, physical action etc.) of low agreeableness individuals. Additionally, stating that highly agreeable participants would regulate their negative emotions and compromise when faced with conflict. Similarly, Ferguson et al. (2011) found that those low in agreeableness and high in trait aggression positively predicted aggressive actions. While, Sharpe and Desai reported that, in comparison to other personality dimensions, Agreeableness and Neuroticism “were the most predictive of trait aggressiveness” (2001) when measured using the Buss and Perry Aggression Questionnaire (1992).

In addition, a study by Chory and Goodboy (2011) correctly hypothesised that those with low agreeableness levels played more violent video games more frequently, especially the types of games that tended to be less sympathetic and involved strong violence. They thought that this was the case as those low in agreeableness would want to play games that gave them a chance to be involved in a fantasy that holds no boundaries where they can “live out their violent tendencies” (Chory & Goodboy, 2011, pg.196). Therefore low agreeableness individuals reported to like and be more satisfied by violent video games.

1.4 Neuroticism

Conversely, the neuroticism dimension of personality is a vulnerability to anxiety, worry and anger (Markey & Markey, 2010). Those with high neuroticism levels have a propensity to feel negative emotions with some characteristics being “angry hostility, depression, self-consciousness, and impulsiveness” (Bettencourt et al., 2006, Pg.754). Conversely, individuals low in neuroticism are more emotionally stable, calm, composed and are more able to cope with negative situations and emotions.

However, it may seem that low agreeableness and high neurotics are similar, Costa et al. (1989) distinguished between the two where high neuroticism (Neurotic hostility – hot-blooded) was characterised by bouts of anger while low, agreeableness (Antagonistic hostility – “cold-blooded”) was characterised by their lack of co-operation, distrust, pessimism and unfeeling. These distinctions bring about different forms of aggression relative to the distinctions made. Hence, Bettencourt et al., found that those high in neuroticism as well as emotionally susceptibility (Impulsivity, type A personality etc.) which are indicated as being prone to feel negative emotions, feel a vulnerability especially to threats against the self, have more anger dominated and emotion-filled aggression, however only when provoked. Whereas antagonism displays crueller, heartless aggression stating that antagonistic aggression may be more aggressive even when provoked or unprovoked.

In the same study by Chory and Goodboy (2011) however, they found that individuals low in neuroticism preferred video games that were more violent. These findings contradict their hypothesis that high neurotics will prefer and play more violent video games. This hypothesis was inspired by the findings of previous research on violent media and was conducted instead of video games. They speculate that violent video games may be “too stimulating” (Chory and Goodboy, 2011, pg.195) for neurotics but more appealing to low neurotics. While also referencing Krcmar and Kean (2005) stating that high neurotics may watch more violent media to corroborate their anxieties of the real world, whereas for video games it may reside more on fantasy but does not offer any reliable information about the real world.

Additionally, a study by Caprara et al (1992) studied personality differences and its relation to aggression and found that there was a positive association between emotional susceptibility and neuroticism. These variables seem to be quite similar. Previous research about neuroticism has found that those high in neuroticism or emotional susceptibility will

most likely respond with higher aggression levels when faced with provoking situations compared to those lower in neuroticism (Caprara, Barbaranelli & Comrey, 1992; Bettencourt et al., 2006). Therefore the current research aims to test the role, if any, of personality traits focusing more on the separate and combined traits of agreeableness and neuroticism on its influence on aggression in violent video games.

1.5 Empathy and Desensitisation

Empathy can be a difficult topic to discuss both with regards to investigating it in research to aggression but also with the definition and meaning to the word. A definition is needed to understand the meaning of empathy and distinguish it from desensitisation and other comparable words associated with it (sympathy, pity etc.). Davis (1990) reported from the work of Edith Stein and outlined its difference between similar words and what it includes in therapeutic practices. She stated that empathy cannot be taught but rather is dispositional and something that simply occurs to us after the fact, continuing that empathy was not necessarily a skill but was “a way of being” (Davis, 1990, pg. 707). However, empathy can be either disrupted or enabled to occur such as learning other attitudes and behaviours (i.e. “positive regard for others”, “self-awareness” (Davis, 1990, pg.707) etc. to facilitate its occurrence. The simple definition of empathy has been debated over by scholars, however, Neumann et al. (2012) asserted from previous research that empathy involves ones cognitive and affective components. Where the cognitive component involves the capability to comprehend one's emotions and experiences and the ability to see the world from their point of view. Whereas the effective component involves the ability to also feel and be with the individual's own thoughts and feelings (Neumann et al., 2012).

It is still blurry as to whether reactions to exposure to violent conditions either in media or in real life is affected by one's levels of empathy or if it is simply a desensitisation to violent scenes (Anderson et al. 2010). Additionally, Anderson and Warburton (2012)

reported that prolonged exposure to violent video games heightens the probability of one's aggressive cognition, emotion and actions as well as lowers desensitisation, reduces pro-social behaviour and causes a decline in empathy. There are very few studies which deal solely on empathy and its relation to aggression therefore, Anderson et al. (2010) combined this outcome variable with desensitisation. However, Anderson et al. (2010, Pg.151) stated in their meta-analytic review that their results found that there was a "causal risk factor" both between violent video game exposure (VVE) and a lack of empathy, demonstrating it as significant and relatively important.

Following this, Desensitisation and empathy are quite similar as they both denote to an automatic response to someone else's pain. However, the differences that Anderson et al. had stated was that of their measurement processes. Empathy is typically measured using self-reports where the individual provides their personal point of view of how they would feel in certain situations whereas, for desensitisation, it is measured on physiological responses of the individual. For instance, a study by Carnagey, Anderson and Bushman, (2007) on physiological desensitisation responses to violence found that when participants were exposed to violent video games their physiological responses to real life violence was significantly lower compared to those not exposed to violent video games. Therefore, according to Davis (1990) that empathy cannot be taught but can also be blocked, it is unclear however whether the lack of reaction is due to the increase in desensitisation to violence from VVG's or if it was due to the interruption of empathy to occur during violent conditions. A distinction between the two needs would help to understand whether it is due to the situational factor of desensitisation or the intrinsic trait of empathy. Therefore the current study aims to focus on one of these factors – empathy – to discriminate between them.

1.6 Rationale

The aim of the current research is to expand our knowledge of the effects of video game violence on the minds of those who are exposed to it. From previous literature, it is seen that there have been mixed results with some finding it significant and others finding none. However, it's to be expected when dealing with the "multicausal phenomenon"(Anderson et al., 2010, pg.169) of aggression that there is no one contributing stimuli but a multitude of them. Despite this, however, the personality dimensions of agreeableness and neuroticism will be examined in order to understand its underlying effects on violent video game players. Dimensions of personality more specifically, agreeableness and neuroticism have not yet been directly measured in terms of aggression on video games, therefore, the current study will do just that

Agreeableness and neuroticism were positively correlated with other personality traits looked at in Bettencourt et al's., meta-analysis on previous literature. Additionally, there were little to no studies found directly measuring both the agreeableness and neuroticism dimensions of personality on aggression, in Bettencourt et al's, study, highlighting the scarcely examined area. Therefore leaving a void in literature for these dimensions, The current research will set out to explore both these dimensions solely.

However, a limitation of their study was that the quality of the studies chosen may vary as all studies found were included due to the small number of studies being taken into analysis. Additionally, the study can only be applied to reactions of physical aggression, and not any other type of aggression. The study conducted by Chory and Goodboy found that one of their limitations was that the actual social aspect of gameplay was not taken into account. Where some games were mostly multiplayer games. Some of the games chosen may have been more multiplayer based while some were more "static" (2011, pg.196). The video games chosen may have been influenced by the social aspect of games such as playing with

their friends but there is no distinction between motivations of video game choices recommending that future research should account for one's motivations.

Besides the personality dimensions of agreeableness and neuroticism, the current research will also be conducted on empathy and its relation to aggression. The study attempts to fill the space in research and examine empathy exclusively as not many studies have looked at this specific aspect and to attempts to investigate whether empathy is also significant enough to influence and evoke aggression after the exposure to video games. Empathy however also bares relations with desensitisation. Both empathy and desensitisation are quite similar however the current research will focus on empathy and attempt to make more of a distinction between the two while also controlling for desensitisation.

One of the main limitations for Anderson et al's., study was that the empathy and desensitisation variable was combined to make one IV, not making it clear which of the variables made an impact on the behaviours of the players after playing VVG's. Therefore the research study will measure the individual on their empathy levels through self-evaluations while also asking questions about the participant's previous experience with violent video games and can both be compared and evaluated in the results section. The participant will also be measured physiologically when playing the VVG and can also be used to measure desensitisation. An ECG to measure their heart rate and the Galvanic Skin Response (GSR) used to measure skin conductance will be used.

1.7 Hypothesis

The current research will be experimental and quantitative looking to examine three hypotheses.

1. Low levels of agreeableness in individuals will predict higher levels of aggression after the exposure to violent video games when compared to non-violent video game players.

2. Higher levels of the neuroticism dimension will predict aggression after playing VVG's in comparison to those not playing violent video games.
3. Empathy levels in players will determine higher aggression levels when compared to the control group.

2. Methodology

2.1 Participants

43 participants all over the age of **18** took part in the current study. The total number of participants aimed for was round 40-50 participants as determined by Cohens (1992) effect size chart. They were randomly assigned to 2 possible groups, violent video game (VVG) and non-violent video game (NVVG) group where they would experience only 1 condition. The violent group played a violent video game (N=21) and the other, the control group played a non-violent video game(N=22). They were assigned by alternating between the 2 groups. The participants were gathered through the college, the psychological society in DBS, from the authors professional and personal contacts. Participants were chosen on the basis of age only, requiring participants to be over the age of 18, refer to table 1 for information of participants mean age, standard deviation and age range. Both genders were permitted to participate. Table 2 shows the gender break down of participants which consist of 22 males (M=22) and 21 Females (F=21), and a split percentage of 51.2% of males and 48.8% of females, as shown in table 2. Participation was also purely voluntary based and was not conducted for any extra credit or payment while additionally, participants were given the opportunity to consent prior to the experiment.

Table 1. The Mean and Standard Deviation of the Participants' Age Range

	N	Minimum	Maximum	Mean	Std. Deviation
Age	43	18	27	20.72	2.02

Table 2. Percentage Breakdown per Gender

Gender	Frequency	Percent %	Valid Percent	Cumulative Percent
Male	22	51.2	51.2	51.2
Female	21	48.8	48.8	100.0
Total	43	100.0	100.0	

2.2 Design

The current research was conducted in order to determine whether players personality along with empathy affected their aggression after exposure to violent video games. The design used for the current experimental study was a true experimental study using random sampling. The predictor variables that were looked at were one's agreeableness, neuroticism and empathy levels while the criterion variable was one's level of aggressiveness. The hypothesis for the study was that the level of agreeableness, neuroticism and empathy individually will predict aggressive reactions after playing violent video games. These participants were split into 2 groups, the experimental group of violent video games and the control group of non-violent video games. These participants were assigned randomly alternating the conditions where all subjects were measured for all the variables looked for.

2.3 Apparatus

The computer was used to access the questionnaires during the experiment, the ps4, one controller and noise cancelling headphones were needed to play the video games. The violent video game used was Black Ops 3 Zombies and the non-violent video game used was Firewatch. The physiological instruments used was the ECG (Electrocardiography) used to measure the electrical activity of their heart measuring heart rate and the Galvanic Skin

Response (GSR) equipment used to measure their sweat conductance - measuring emotional arousal. This was recorded and evaluated using the PowerLab software which is a biofeedback unit used to record biometric data. While the data was analysed using the PowerLab Reader to view the average physiological responses for each individual.

2.4 Materials

For the experiment an information sheet and consent form were presented on Google forms before the experiment was carried out after which, a debrief sheet (copies of these are included in the appendices) was handed out to all participants after the experiment for more information. The measures used were

1. The Ten Item Personality Questionnaire (TIPI) used to measure both Agreeableness and Neuroticism,
2. The Toronto Empathy Questionnaire (TEQ) used to measure empathy.
3. The questionnaire was then used to measure one's level of aggression using the Buss and Perry questionnaire (BPA) which were all conducted on Google forms.

2.5 Ten Item Personality Questionnaire (TIPI)

- First, the TIPI is a short form and brief version of longer personality tests presenting only 2 items each for the 5 personality tests being looked at, therefore, the questionnaire includes 10 items.
- It includes 5 measures, Openness, conscientiousness, extraversion, agreeableness and neuroticism.
- TIPI is free to use and was created by Samuel Gosling, Peter Rentfrow and William Swann in 2003.
- The participants are expected to respond with 7 possible answers from strongly disagree to strongly agree.

- However inferior to other personality questionnaires, TIPI still presents valid test-retest reliability. But internal consistency is not considered to be a fair measurement on the reliability of TIPI.
- Nevertheless, Cronbach's alpha values were calculated for agreeableness – .295 with a total number of 42 participants and neuroticism – .637 with a total number of 43 participants being analysed.

2.6 Toronto Empathy Questionnaire (TEQ)

- Second, the Toronto Empathy Questionnaire is free to use and was developed by Nathan Spreng, Margaret McKinnon, Raymond Mar and Brian Levine.
- It is used to measure participants empathy levels after exposure to the conditions whether violent or non-violent.
- It contains 16 Items in which participants answered on a 5-point scale from never to often.
- It has positive results with “high internal consistency, construct validity, and test-retest reliability” (Spreng et al., 2009).
- With a Cronbach's alpha value of .673 and a total of 40 valid participants in the current research.

2.7 Buss and Perry Aggression Questionnaire(BPA)

- Third, the aggression questionnaire by Buss and Perry is a free to use questionnaire by Arnold Buss and Mark Perry.
- It contains 29 items and answered on 5 scales from extremely uncharacteristic of me to extremely characteristic of me.
- It, as the name suggests, measures aggression and other subtypes of aggression including physical aggression, verbal aggression, anger and hostility.

- It also displays high reliability and internal consistencies when tested for over 7 months (Harris, 1997).
- It has a Cronbach's alpha value of .777 with a total of 40 valid participants analysed

In addition, demographic questions were asked prior to the questionnaires which were their age and gender and previous experience:

1. Rate from 1-10 how often they play video games
2. Rate from 1-10 how often they play violent video games

2.8 Procedure

- The participants were first given ID numbers in order to identify which questionnaire belonged with which physiological responses
- They were then told to read and complete the first half of the questionnaire before playing the video game. These were the information sheet, consent form, demographic questions and the TIPI questionnaire
- During this, 'subject zero' was taken where no participant was yet attached to the GSR unit using the PowerLab.
- After which they were then led into the lab where they were hooked up to the physiological equipment which was the GSR, two velcro strips would be wrapped around 2 toes and the ECG, three electrodes would be stuck on to participants arms.
- The baseline for the participant for the GSR would be taken before they played the game
- They were then given noise cancelling headphones for complete immersion of the experience and left with the console and a video game. Then the PowerLab unit would be started and gameplay would be timed.
- The participants were measured for 20 minutes.
- After which their file on the PowerLab was saved via email as to not lose the data.

- The equipment was then taken off the participants where they were led to the computer in order to finish the last part of the questionnaire which was the empathy and aggression measure (As shown in the appendix section).
- Lastly, participants were then given the debrief sheet in order to be informed of the full research and were told to ask any questions if participants had any more questions or were still confused.

2.9 Ethics

Participants were given an information sheet before conducting the experiment and were also provided information verbally. Participants were given the chance to withdraw from the study at the start and during the experiment but were informed that it wasn't possible to withdraw once the questionnaire was submitted. Participants were also presented with a consent sheet where the experiment would only proceed if all the boxes were ticked. The participants' identity was also kept secret giving the participants ID numbers in order to link physiological data with the survey data. Participants were also informed in advance that violence or profanity may be shown

2.10 Data Analysis

- An independent samples T-test will be run to evaluate all 3 hypotheses
- A Two-way between groups ANOVA will be run for both agreeableness and neuroticism variables separately
- While a multiple regression will also be run to test the causal relationship of both agreeableness and neuroticism scores on one's aggression
- A linear regression will be run to test whether empathy significantly predicts aggression after violent video game exposure.

3. Results

3.1 Descriptive Statistics

The data collected was fed through SPSS 25 software to be arranged and analysed. An overview of the data collected will be explained and also shown through tables. In the current study a total of 44 participants had taken part in the research, however, due to lost data, there were only 43 (N=43) that were analysed. There were two groups in the current experiment, which were the control group (N=22) where they played a non-violent video game, Firewatch and the experimental group (N=21) where they played a violent video game, Black Ops 3 Zombies. This is shown in table 1.

Table 3. Percentage Breakdown per Condition

Violent or Non-violent	Frequency	Percent %	Valid Percent	Cumulative Percent
NVVG	22	51.2	51.2	51.2
VVG	21	48.8	48.8	100
Total	43	100	100	

3.2 Test of Normality

Additionally, a test of normality that was conducted and shows that there was an outlier for the neuroticism and empathy scale using a boxplot, while results of the Shapiro-Wilk showed that three of the four variables were normally distributed with the exception of total empathy scores showing .016 significance demonstrating a lower guarantee of normality, however, the score is still higher slightly higher than .01, of being significant, therefore, the author still felt comfortable in pursuing the previously planned tests. A test of Normality scores seem to be normally distributed judging from Normal Q-Q Plots, however,

Agreeableness	42	5	13	9.50	1.94	-.08	.37	-.41	.72
Neuroticism	43	3	13	9.37	2.38	-.80	.36	.19	.71
Empathy	39	22	40	32.26	3.88	-.22	.38	-.22	.74
Aggression	40	54	103	76.78	11.66	.04	.37	-.28	.73

Furthermore, the mean GSR score for the non-violent video game ($M = -2.338$, $SD = 2.559$) shows that participants had much lower skin conductivity in comparison to the violent video game group ($M = -.960$, $SD = 3.285$). Similarly, BPM scores for the NVVG group ($M = 76.142$, $SD = 8.571$) were lower than those in the VVG group ($M = 84.864$, $SD = 12.015$) which would be expected. Whilst previous experience ratings the participants possessed with playing video games in the VVG group was higher ($M = 7.10$, $SD = 2.61$) than those in the Non-violent group ($M = 4.82$, $SD = 2.96$). Whereas, both the VVG group ($M = 5.57$, $SD = 3.11$) and the NVVG ($M = 4.09$, $SD = 2.86$) were similar in their average of experience, however, the NVVG group had rated their experience with violent games slightly less than those in the VVG group.

It is also seen however that for previous experience males had more experience with video games ($M = 6.91$, $SD = 2.25$) compared to females in video games ($M = 4.90$, $SD = 3.36$), which was similar to their experience in violent video games for males ($M = 6.05$, $SD = 2.42$) and females ($M = 3.52$, $SD = 3.14$)

Table 5. Average GSR and BPM for the Non-Violent and Violent Video Game Group

Descriptive	N	Minimu	Maximum	Mean	Std.	Skewness	Kurtosis
Statistics		m	Statistic	Statistic	Deviation	Statistic	Std.
Non-Violent		Statistic			Statistic	Error	Error

Average	2	-7.57	1.07	-2.34	2.36	-.81	.49	.23	.95
GSR	2								
Average	2	55.56	112.72	76.14	8.57	.21	.49	1.92	.95
BPM	2								
Violent									
Video Game									
Average	2	-9.71	6.66	-.96	3.29	-.19	.50	2.58	.97
GSR	1								
Average	2	-55.12	112.72	84.86	14.02	-.19	.50	.03	.97
BPM	1								

Inferential Statistics

3.4 Hypothesis 1

To recap, the purpose of the current study was to investigate whether participants levels of agreeableness would affect their aggression levels after being exposed to violent video games. Firstly, an independent samples t-test was conducted in order to compare participants agreeableness levels between the control group and the experimental group. Results discovered that the mean agreeableness scores were similar between non-violent video game scores ($M = 9.18$, $SD = 1.79$) and violent video games scores ($M = 9.85$, $SD = 2.08$). While an independent samples t-test found that there were no significant differences between the groups on agreeableness scores ($t(40) = -1.12$, $p = .270$, $CI(95\%) -1.88 - .54$). Therefore, the null hypothesis is accepted. Refer to table 4 for information displaying results for agreeableness

Additionally, a two-way between-groups ANOVA was also conducted in order to examine the role of high and low agreeableness to game conditions on their levels of aggression. Agreeableness scores were split into two relatively balanced groups and found no

main effect of game type ($F(1, 35) = .00, p = .996$) on participants aggression levels.

likewise, no main effect was reported for agreeableness ($F(1, 36) = 1.38, p = .248$) with a small effect size of .038. Post hoc analysis was not carried out due as there were not enough groups. Figure 1 displays these results on a bar chart

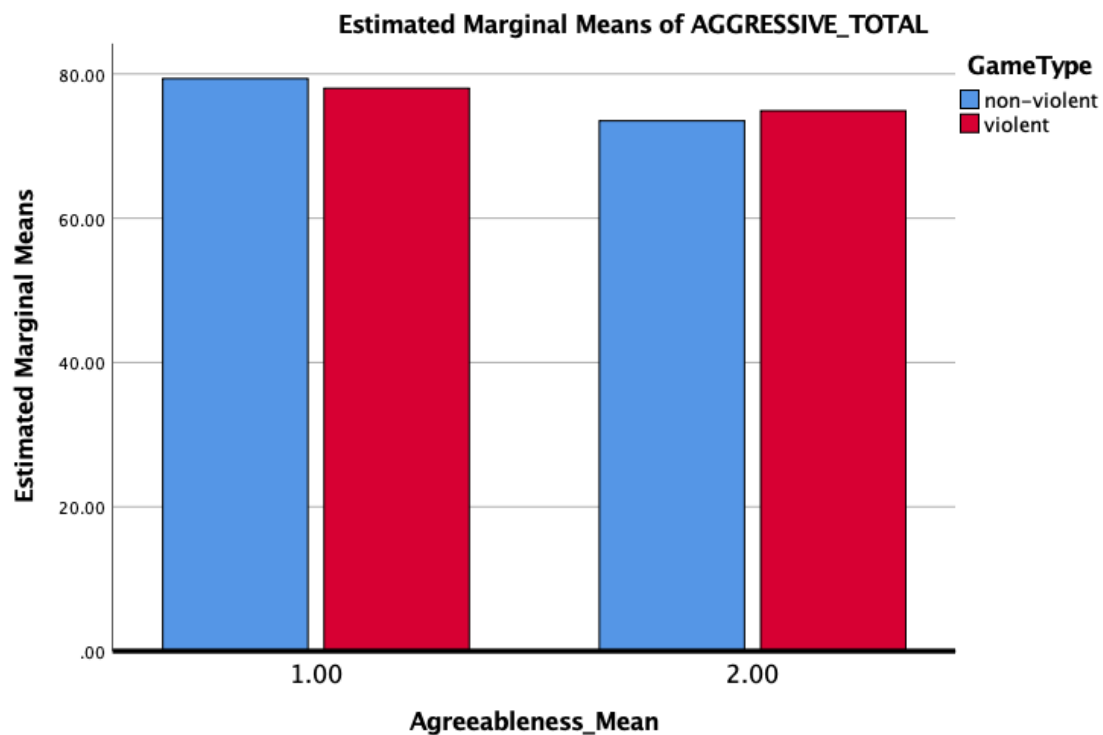


Figure 1. Shows a bar chart for high and low agreeableness scores on aggression scores.

1 = low agreeableness, 2 = high agreeableness.

3.5 Hypothesis 2

The second hypothesis proposed that high neuroticism scores would predict more aggression after being exposed to violent video games. When conducting an independent samples t-test comparing the violent and non-violent group, results found that there was no significant difference between the non-violent group ($M = 9.50, SD = 2.24$) and violent video game group ($M = 9.24, SD = 9.57; t(41) = .36, p = .723, CI(95\%) -1.22 - 1.74$) on participants neuroticism levels on aggression. Therefore, the null hypothesis is accepted

A two-way between-groups ANOVA was then conducted in order to examine the role of high and low neuroticism to game condition on levels of aggression and found no main effect of the game type ($F(2, 36) = .00, p = .962$) on aggression levels. Likewise, no main effect was reported for neuroticism ($F(1, 36) = 3.15, p = .085$) with a small effect size (.08). Post hoc analysis was not carried out due to not enough groups therefore, the null hypothesis can be accepted here as it is seen to be insignificant. Similarly, Figure 2 displays these results visually.

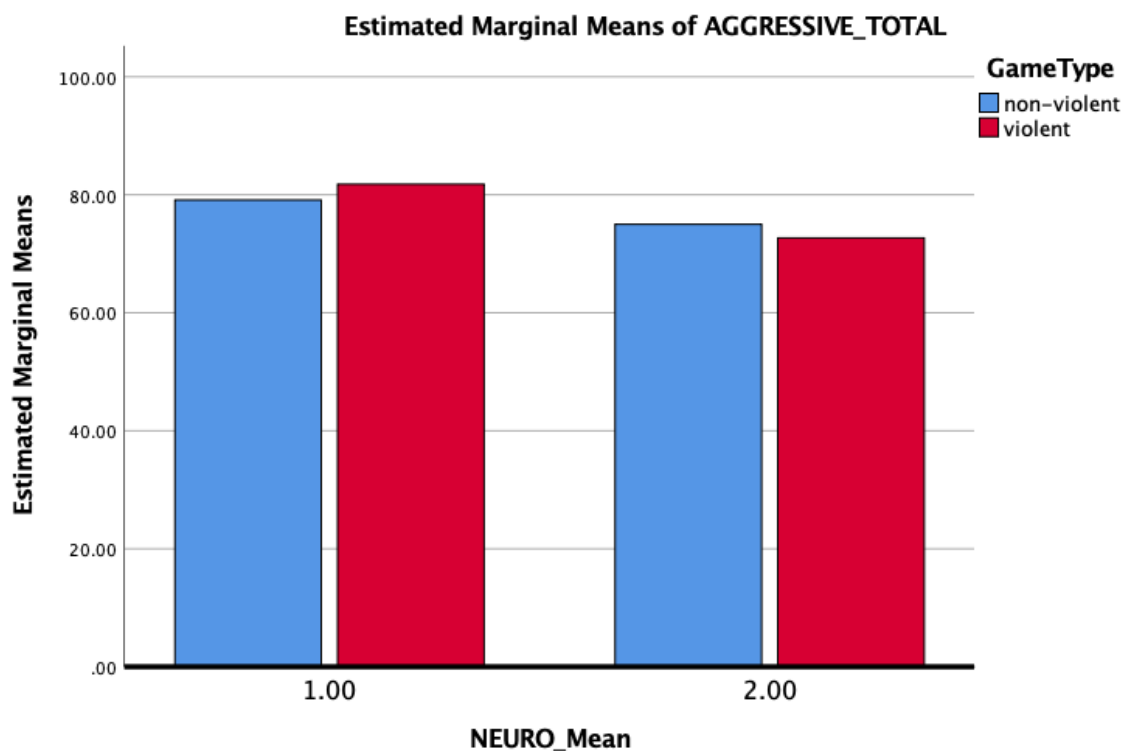


Figure 2. Shows a bar chart for high and low neuroticism scores on aggression scores.

1 = low neuroticism, 2 = high neuroticism.

Lastly, a multiple regression was conducted in order to look at whether the combined IV of agreeableness and neuroticism would affect their aggression. A split file was used to conduct this multiple regression in order to compare and analyse the group's results

separately. Firstly, the outcomes for both results found that multicollinearity rules were not violated, while Mahalanobis distances for both groups were satisfactory (non-violent = 6.32, violent = 8.65). Scatterplot results showed that there was a relationship between the variables in both the violent and non-violent conditions. Results showed that agreeableness and neuroticism variables explained 0% of the variance ($R^2 = .00, f(2,18) = .98, p = .395$) for the non-violent group and 4% of the variance ($R^2 = .04, f(2, 15) = 1.32, p = .296$) for the non-violent group, it was found that neither agreeableness ($\beta = -.15, p = .550, 95\% \text{ CI} = -3.24 - 1.79$) nor did neuroticism ($\beta = -.32, p = .293, 95\% \text{ CI} = -3.65 - 1.17$) combined have an effect on aggression levels in participants. While in the violent group, similarly, there was no significant difference collectively for both agreeableness ($\beta = -.25, p = .207, 95\% \text{ CI} = -5.01 - 1.18$) and neuroticism ($\beta = -.15, p = .550, 95\% \text{ CI} = -3.24 - 1.79$) on aggression. Therefore, results found that the independent variables had no effect on the dependent variable of aggression.

Table 6. A Multiple Regression Displaying Separate Effects of Agreeableness and Neuroticism Variables on Aggression Between Violent (VVG) and Non-Violent (NVVG).

IV	Group	β	<i>p</i>	95% Confidence Interval for B	
Agreeableness	NVVG	-.24	.301	-4.55	1.49
	VVG	-.25	.207	-5.01	1.18
Neuroticism	NVVG	-.32	.293	-3.65	1.17
	VVG	-.15	.550	-3.24	1.79

Table 6.2 A Multiple Regression Displaying Combined Effects of Agreeableness and Neuroticism on Aggression

Group	Adjusted R Square	df	<i>f</i>	<i>p</i>
Non-Violent	-.00	2, 18	.98	.395
Violent	.04	2, 15	1.32	.296

6

3.6 Hypothesis 3

An independent samples t-test was conducted between the 2 groups on participants empathy scores on aggression. The results found that there was no significant difference between the non-violent ($M = 33.1, SD = 3.49$) and violent video game ($M = 31.34, SD = 4.17; t(37) = 1.41, p = .167, CI(95\%) -0.758 - 4.22$) group. Therefore the null hypothesis can be accepted here, Table 4 demonstrates results of an independent t-test on the difference between the groups on agreeableness, neuroticism and empathy.

Additionally, Table 5 shows these results which indicate that there wasn't a significant difference when comparing group one's level of aggression in the NVVG group ($M = 76.57, SD = 11.30; t(38) = -.115, p = .909$) to the VVG ($M = 77, SD = 12.36$) group two's level of aggression showing that violence did not differ in scores with each other.

Table 7. An Independent Samples T-Test Displaying the Difference Between the Violent and Non-Violent Groups

IV	Group	Means	SD	t	df	<i>p</i>
Agreeableness	NVVG	9.18	1.79	-1.12	40	.270
	VVG	9.85	2.08			
Neuroticism	NVVG	9.50	2.24	.36	41	.723
	VVG	9.24	2.57			
Empathy	NVVG	33.10	3.49	1.41	37	.167
	VVG	31.37	4.17			

Aggression	NVVG	76.57	11.30	-.12	38	.909
	VVG	77	12.36			

Lastly, a linear regression was conducted on empathy in order to analyse whether empathy scores in both groups would affect aggression after playing violent video games results found that empathy accounted for 16% of the variance in the non-violent group ($R^2 = .16, f(1, 17) = 4.37, p = .052$), and 19% in the violent video game group ($R^2 = .19, f(1, 15) = 4.67, p = .047$), Showing that empathy scores significantly predicted aggression in the violent group (beta = $-.49, p = .047, CI = .02 - 2.87$), but not in the non-violent group (beta = $-.45, p = .052, CI = -2.94 - .01$). Table 6 shows these results.

4. Discussion

To summarise, the aim of the current study was to expand the knowledge of the possible causes of aggression upon exposure to violent video games. The study looked to focus the research on personality dimensions of agreeableness and neuroticism as it seemed to be positively correlated to aggressive behaviour according to Bettencourt et. al. (2011) while also looking at empathy as a predictor of aggression after VVG experience. It looked to further examine participants physiological reactions and previous experience in order to determine a distinction between empathy and desensitisation.

4.1 Hypothesis 1 & 2 - Personality – Agreeableness and Neuroticism

A two-way between groups ANOVA and an independent t-test was conducted in order to establish a baseline of agreeableness for both groups and results indicated that it was not significant. Showing that the mean agreeableness score in the violent video game group was not significant enough to cause a difference between the non-violent video game group. While the two way ANOVA showed that low or high agreeableness did not cause sufficient enough effects to cause their aggressive reactions.

While the second hypothesis was also examined by performing a t-test and a two-way between groups ANOVA, in addition to a linear regression was conducted to look at combined effects of agreeableness and neuroticism. Results found that high or low neuroticism did not predict aggressive reactions using the two-way ANOVA, while the t-test demonstrated that when comparing both groups on their neuroticism levels, there were no significant differences, demonstrating that both groups were comparable with each other. This goes against the predicted hypothesis presented above.

Additionally, when conducting a multiple regression on both these personality dimensions together, the results displayed no significant causal relationship with these

variables on participants aggression levels. These personalities were found to be insignificant in both the violent video game and in the non-violent video game group.

The purpose of the first and second hypothesis was to establish a spotlight on these traits separately to determine whether they held a strong enough weight that they would influence aggression levels alone. Both results of the hypothesis, discovered, had not aligned with some previously stated research, such as Markey and Markey's (2010) study. This may be due, to some research limitations that will be discussed shortly but it is possible that participants may not have had the right arrangement of personality traits, as suggested by Markey and Markey (2010) which would contribute to a susceptibility towards aggressive behaviour. Researchers examined 3three personality dimensions instead of the two dimensions evaluated in the current study, therefore, one might question whether it is a combination of more than 2 personality factors to indicate a strong effect of aggression after playing VVG's. It is intriguing to see the research was insignificant as previous research has shown a link between these variables on aggression (Sharpe & Desai, 2001).

Nevertheless, results demonstrate that alone and together, they were not enough to influence aggression showing that aggression is more complex and as Anderson et al, (2010) stated is 'multi-causal'. These personality dimensions show no effect on aggressive reactions to VVG's, however, other personality variables, such as extraversion, that weren't tested may need to be examined. It is also probable however that the catalyst model may explain these results as unforeseen variables in combination with personality traits may improve a likelihood towards aggressive reactions such as environmental factors - socio-economic factors; situational factors interpersonal relationships etc. - or genetic factors.

However, the current research findings may be seen to build upon Bettencourt et al's., study, who stated that there was a lack of studies examining the personality traits of

agreeableness and neuroticism within the context of video games. As Bettencourt et al only looked at real-world studies on aggression.

The current research is also seen to support Markey, Markey and French (2015) study that violent video games do not contribute to real-world violence in that both results do not find a significance to cause aggression however it may be wishful thinking to apply these research findings to the world therefore further research is still needed in order to decide. Additionally, Table 5 displays a t-test between the aggression variables in comparison to VVG and NVVG group and is also seen not to be significant. These results then show support for Ferguson and Kilburn's aspect of the debate, that violent video games do not cause aggression.

As results state insignificance, it is seen to support Markey, Markey and French (2015) and Ferguson and Kilburn's (2010) study stating an indication that an increase in video game play results in a decrease in real-world and youth violence. If this was the case, results of the current research may be interpreted that, as there were insignificant results towards aggression, exposure to VVG's may be seen to eliminate an apparent rise of aggression in players. Therefore, these results may support the view that violent video game exposure decreases aggression regardless of one's personality type as both personality dimensions are said to be connected with aggression (Sharpe & Desai, 2001).

4.2 Hypothesis 3 - Empathy

The third hypothesis investigates whether empathy levels governed higher reactions of aggression after being exposed to violent video games. Results found, after a linear regression, that empathy significantly predicted aggression after exposure to violent video games and a t-test found that there was no difference in mean empathy between the violent and non-violent video game group. These results correlated with previous research denoting

its significance in contributing to aggressive reactions. Participants physiological reactions and previous experience will now be looked at to determine if desensitisation was a factor in the cause of aggression. Participants are seen to have significantly higher skin conductance in the VVG group than in the NVVG group. While similarly for their ECG scores, the mean was also seen to be higher in the VVG group, however showing less difference in BPM than participants skin response.

Subsequently, participants' mean previous experience with video games in the NVVG group is seen to be significantly lower, than those in the VVG group, this shows a slight imbalance in experience. Whereas, previous experience with violent video games seems to be more comparable with each other. Therefore, it would follow to observe that previous experience did not have had much of an effect on participants physiological reactions. As participants in the VVG group had much more experience with video games than the NVVG while additionally, participants in the VVG game group also had higher heart rate and more skin conductance, therefore, indicating that desensitisation was not a part of the causal effect of empathy.

4.3 Limitations

The current study has produced unforeseen results with regards to personality variables and their impact on aggression and potential problems in the study may explain this. Firstly, participants may not have been exposed long enough to violent video games as there were short 3 minute breaks between participants deaths in the game and restarting a new game. This may have caused participants not to be fully exposed to the violent long enough therefore exposure will vary from participant to participant. These short intervals may have allowed them to relax and not be subjected to the VVG. The personality questionnaire may also be looked at as the TIPI scales internal consistency was relatively mixed with the agreeableness scale not being as internally reliable as neuroticism, however, authors of this

scale state that it was an unfair test for the current scale. Furthermore, the initial questions asked may have, in hindsight, been slightly vague, such as the previous experience questions. A little more clarification may have been needed to clarify these questions, such as 1 is never played and 10 would be all the time. This would have been more understandable to participants whose native tongue was not English.

There were also some variations as to the conditions participants came in as some participants arrived alone, where little conversational discourse occurred during the experiment and for others, there were conversations before, during the filling out of the survey and after. This was not controlled for and may have altered participants experience slightly as some participants may not have had time to contemplate and reflect on their answers. Furthermore, another unforeseen variable that was not accounted for was the possession of phones on the person. There were some occurrences where participants phones had distracted the participant during the gameplay and during the answering of the questionnaires. Therefore phones were prohibited but this was only enforced midway through the performance of the experiments, hence, these occurrences may have also affected the results.

4.4 Strengths

There are also some strengths that the current article possesses such as the total participant number, which was primarily 44 participants however due to lost data, the total amounted to 43 participants. Nevertheless, the final number was still enough to get adequate power and effect and as per Cohens (1992) chart, where the mean of the large and medium effect size was taken (Medium – 64 and Large – 26). Additionally, each condition had enough participants in the current study while similarly, the distribution in males and females were also even in the research and helped the study become more ecologically valid and representative of the population.

Moreover, Participants were gathered from different population pools with different ethnicities, having different educational backgrounds and courses. The study also involves differing levels of experience with video games, improving ecological validity. Lastly, both video games were played in the first person increasing the comparability between the video. Additionally, noise cancelling headphones were used in the study which would help immersion of the video games, allowing for little distraction and more concentration of the video game.

4.5 Future Research

As investigated by Kay and Bryce (2012) the aspect of social interactions in other video games may have been needed to be looked at, as the current study only investigated violence in offline, single player games. It brings into question the differing psychological effects of multiplayer type games and non-multiplayer games on players personality types. However, Kaye and Bryce found that multiplayer games involving co-operative or competitive play still produced a pleasurable and fun experience. Future studies may be encouraged to investigate multiplayer interactions in video games and observe whether certain personality types react differently when exposed to cooperative and non-cooperative players.

Additionally, future research should focus on the structural aspects of videogame play as the games that were chosen for the current study differed, wherein, the non-violent video game was story based while the non-violent videogame was not and was which was more complex. Hence games chosen should in future be more comparable with one another, such as difficulty level, story-based, multiplayer mode etc. The aforementioned variations mentioned can control for the games structural features.

It is also important to note that, future research should concentrate on controlling for the capability of participants involved and control for their competence level. Mostly due to

an imbalance between males and females previous experience with males having more experience overall compared to females between both groups, therefore this imbalance in previous experience may have skewed the results. Hence, females may have only been learning the basics of how to play the game whereas males would have already had the knowledge to. Female participants may not have had the chance to become fully immersed in the video game and not be completely exposed for the same amount of time as others. Having the ability to control difficulty level in future would help equalise these effects

Future research should continue to investigate personality effects on aggression in video games while additionally, focusing on the length of exposure to VVG's. Where players are subjected to continuous exposure with fewer breaks, whilst also controlling for the type of games the participants are exposed to both violent and non-violent.

Lastly, as there were close significance levels of empathy in both conditions future research should focus on whether empathy truly had an effect on aggression after exposure to violent video games. Therefore future research may be suggested to examine this effect to add another condition where participants are split up into 3 different groups and are exposed to a violent video game, non-violent video game and exposed to no video game at all. This difference in groups would help determine whether empathy surely has an effect on aggression.

4.6 Implications

If however, as the results of the current research suggest that personality dimensions of agreeableness and neuroticism don't effect aggressive reactions, it is recommended that researchers should focus solely on other the personality traits separately and in combination with each other and observe its contributions, if any, to affecting aggressive reactions. More attention may also be placed on empathy in the future as it is seen to be significant in the current study in predicting aggression after exposure to VVG. Additionally, more attention

may be directed towards the variable of desensitisation and whether this alone would affect if any, participants aggressive responses. Recommendations of the current study, however, would suggest not to place too much attention on violent video games causing aggression but should focus on how these violent video games affect player responses. Such as exploring the correlation between an upsurge in violent video game play results in a decrease in aggressive behaviour.

4.7 Conclusion

In conclusion, Agreeableness and Neuroticism did not affect aggression however, more research needs to be performed on other personality dimensions other than agreeableness and neuroticism while also investigating the relationships between combinations of personality traits. Additionally, future research may need to control for other variables such as the structural aspects of the games themselves, looking at multiplayer games vs non-multiplayer games, controlling for previous experience and gender, whilst further investigations could possibly lead to a focus on desensitisation and a modified design of the current experiment for empathy.

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Appendix

1. Debrief Sheet



How Agreeableness, Neuroticism and Empathy levels will affect Aggressiveness after exposure to violent video games.

Thank you for participating in the current research. The purpose of this research is to determine whether differences in personality will effect aggressive responses to violent video games. Previous research have looked into the area of whether violent video games cause individuals to be aggressive and in short the research has been mixed. Therefore, a look at personal differences may be the reason for these diverse findings of previous research. It is predicted that there will be a correlation between certain personality types and reactions to violent video games played.

If you are interested in this area of research, the following introductory sources are referenced here:

- DeLisi, M., Vaughn, M. G., Gentile, D. A., Anderson, C. A., & Shook, J. J. (2013). Violent video games, delinquency, and youth violence: New evidence. *Youth Violence and Juvenile Justice*, 11(2), 132-142.
- Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.
- Ferguson, C. J. (2010). Blazing angels or resident evil? Can violent video games be a force for good?. *Review of general psychology*, 14(2), 68.

In the current study it was important not to divulge the exact aim of aggressiveness in participants after playing violent video games and would ask you to maintain confidentiality about the purpose of the experiment since any pre-knowledge of the purpose will bias the data for that person and thus cannot be used.

If you have any questions about this research, or would like any further information about the results of the study once it is completed, please feel free to contact, me at xxxxxxxx.

If any of the questions do raise difficult feelings for you, contact information for support services are included.

Jigsaw - www.jigsaw.ie
Aware - www.aware.ie
Samaritans - www.samaritans.org

2. Cover Letter

Information Sheet about How Personality Affects Ones Responses To Video Games

My name is Vanessa Tolentino and I am conducting research in the Department of Psychology that explores how personality affects psychological responses to video games . This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study where participation involves setting up a meeting with myself in George Street, Castle House and playing a video game where some violent content may be shown. Participants must be aware of this while they will also be completing and returning an anonymous survey on the day. If any of the questions raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been submitted. The questionnaires will be securely stored and data from the questionnaires will be saved on a password protected computer.

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

If you are interested in participating in the research, please contact Vanessa Tolentino, 10344220@mydbs.ie.

3. Aggression Questionnaire –

Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Place your rating in the box to the right of the statement.

- 1 = extremely uncharacteristic of me
- 2 = somewhat uncharacteristic of me
- 3 = neither uncharacteristic nor characteristic of me
- 4 = somewhat characteristic of me
- 5 = extremely characteristic of me

1. Some of my friends think I am a hothead A
2. If I have to resort to violence to protect my rights, I will. PA
3. When people are especially nice to me, I wonder what they want. H
4. I tell my friends openly when I disagree with them. VA
5. I have become so mad that I have broken things. PA
6. I can't help getting into arguments when people disagree with me. VA
7. I wonder why sometimes I feel so bitter about things. H
8. Once in a while, I can't control the urge to strike another person. PA
- 9.* I am an even-tempered person. A
10. I am suspicious of overly friendly strangers. H
11. I have threatened people I know. PA
12. I flare up quickly but get over it quickly. A
13. Given enough provocation, I may hit another person. PA
14. When people annoy me, I may tell them what I think of them. VA
15. I am sometimes eaten up with jealousy. H
- 16.* I can think of no good reason for ever hitting a person. PA
17. At times I feel I have gotten a raw deal out of life. H
18. I have trouble controlling my temper. A
19. When frustrated, I let my irritation show. A
20. I sometimes feel that people are laughing at me behind my back. H
21. I often find myself disagreeing with people. VA
22. If somebody hits me, I hit back. PA
23. I sometimes feel like a powder keg ready to explode. A
24. Other people always seem to get the breaks. H
25. There are people who pushed me so far that we came to blows. PA
26. I know that "friends" talk about me behind my back. H
27. My friends say that I'm somewhat argumentative. VA
28. Sometimes I fly off the handle for no good reason. A
29. I get into fights a little more than the average person. PA

Scoring:

The two questions with the asterisk are reverse scored.

The Aggression scale consists of 4 factors, Physical Aggression (PA), Verbal Aggression (VA), Anger (A) and Hostility (H). The total score for Aggression is the sum of the factor scores.

Buss, A.H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, 63, 452-459.

4. Ten-Item Personality Inventory-(TIPI)

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

I see myself as:

1. ____ Extraverted, enthusiastic.
2. ____ Critical, quarrelsome.
3. ____ Dependable, self-disciplined.
4. ____ Anxious, easily upset.
5. ____ Open to new experiences, complex.
6. ____ Reserved, quiet.
7. ____ Sympathetic, warm.
8. ____ Disorganized, careless.
9. ____ Calm, emotionally stable.
10. ____ Conventional, uncreative.

TIPI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness: 3, 8R; Emotional Stability: 4R, 9; Openness to Experiences: 5, 10R.

Link: <http://gosling.psy.utexas.edu/wp-content/uploads/2014/09/JRP-03-tipi.pdf>

5. Toronto Empathy Questionnaire

Below is a list of statements. Please read each statement carefully and rate how frequently you feel or act in the manner described. Circle your answer on the response form. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

		Never	Rarely	Sometimes	Often	Always
1.	When someone else is feeling excited, I tend to get excited too	0	1	2	3	4
2.	Other people's misfortunes do not disturb me a great deal	0	1	2	3	4
3.	It upsets me to see someone being treated disrespectfully	0	1	2	3	4
4.	I remain unaffected when someone close to me is happy	0	1	2	3	4

5.	I enjoy making other people feel better	0	1	2	3	4
6.	I have tender, concerned feelings for people less fortunate than me	0	1	2	3	4
7.	When a friend starts to talk about his\her problems, I try to steer the conversation towards something else	0	1	2	3	4
8.	I can tell when others are sad even when they do not say anything	0	1	2	3	4
9.	I find that I am "in tune" with other people's moods	0	1	2	3	4
10.	I do not feel sympathy for people who cause their own serious illnesses	0	1	2	3	4
11.	I become irritated when someone cries	0	1	2	3	4
12.	I am not really interested in how other people feel	0	1	2	3	4
13.	I get a strong urge to help when I see someone who is upset	0	1	2	3	4
14.	When I see someone being treated unfairly, I do not feel very much pity for them	0	1	2	3	4
15.	I find it silly for people to cry out of happiness	0	1	2	3	4
16.	When I see someone being taken advantage of, I feel kind of protective towards him\her	0	1	2	3	4

Link: <http://www.midss.org/content/toronto-empathy-questionnaire>

6. Information Sheet



Information Sheet about How Personality Affects Ones Responses To Violent Video Games

You are invited to participate in a research study that will form the basis for an undergraduate thesis. Please read the following information before deciding whether or not to participate.

What are the objectives of the study? The nature of this study looks to further examine whether one's personality affects their psychological responses after playing violent video games. The research requires participants to enter a lab setting at Dublin Business School in Castle House. A complete debriefing will be offered after participation, where any questions will be answered.

to be naive to the exact research question, as information about the research may influence your behaviour and responses. For this reason we can only inform you that we are conducting research on the processes underlying the perception of faces, including people's perceptions of their own face and other familiar faces.

Why have I been asked to participate? Participation is voluntary although I would like to collect a range of different people e.g. age, ethnicity. The research requires participants over the age of 18 to take part. Otherwise all participants are welcome.

What does participation involve? Firstly, Participants are required to answer a questionnaire based on personality, after which they will play 25 minutes of a video game. Once this is completed they will then take a questionnaire on how their psychological reactions about what they had just played.

Right to withdraw Participants have the right to withdraw from the research at any time during the research for whatever reason.

Are there any risks involved in participation? Participants may be exposed to sensitive or graphic video game content along with profanity. It is advised that participants be aware of this detail. Otherwise there are no known severe risks associated with participation. Any inconvenience involved in taking part will be limited.

While the survey may ask some questions that might cause some minor negative feelings, it has been used widely in research. If any experimental procedures do raise difficult feelings for you, contact information for support services are included on the final page.

Confidentiality Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

Contact Details

If you have any further questions about the research you can contact:

Researcher:

Supervisor: _____

Jigsaw - www.jigsaw.ie

Aware - www.aware.ie

Samaritans - www.samaritans.org

Google Forms Questionnaire –

Link to questionnaire: <https://goo.gl/forms/TxnDOcygW0I4maaP2>

How Personality Affects Game Play

* Required

Information Sheet - How Personality Affects Ones Responses To Violent Video Games

You are invited to participate in a research study that will form the basis for an undergraduate thesis. Please read the following information before deciding whether or not to participate.

What are the objectives of the study? The nature of this study looks to further examine whether ones personality affects their psychological responses after playing video games. The research requires participants to enter a lab setting at Dublin Business School in Castle house. A complete debriefing will be offered after participation, where any questions will be answered.

Why have I been asked to participate? Participation is voluntary although I would like to collect a range of different people e.g. age, ethnicity. The research requires participants over the age of 18 to take part. Otherwise all participants are welcome.

What does participation involve? Firstly, Participants are required to answer a questionnaire based on personality, after which they will play 20 minutes of a video game. Once this is completed they will then take a questionnaire on their psychological reactions about what they had just played.

Right to withdraw Participants have the right to withdraw from the research at any time during the research for whatever reason.

Are there any risks involved in participation? Participants may be exposed to sensitive or graphic video game content along with profanity. It is advised that participants be aware of this detail. Otherwise there are no known severe risks associated with participation. Any inconvenience involved in taking part will be limited.

While the survey may ask some questions that might cause some minor negative feelings, it has been used widely in research. If any experimental procedures do raise difficult feelings for you, contact information for support services are included on the final page.

Confidentiality Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

Contact Details

If you have any further questions about the research you can contact:

Researcher:

Supervisor:

Consent form

*

- I have read and understood the attached Information Leaflet regarding this study. I have had the opportunity to ask questions and discuss the study with the researcher and I have received satisfactory answers to all my questions
- I have had the opportunity to ask questions and discuss the study with the researcher and I have received satisfactory answers to all my questions
- I understand that I am free to withdraw from the study at any time without giving a reason and without this affecting my training
- I agree to take part in the study

ID Number *

Sex * Male Female Other: _____**Age - Must be over 18 ***

Your answer

Rate from 1 - 10 How Often you Play Video Games *

Your answer

Rate from 1 - 10 How Often you Play Violent Video Games *

Your answer

Personality

Here are a number of personality traits that may or may not apply to you. Please click a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the

Below is a list of statements. Please read each statement carefully and rate how frequently you feel or act in the manner described. Click your answer on the response form. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

	Never	Rarely	Sometimes	Often	Always
When someone else is feeling excited, I tend to get excited too	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people's misfortunes do not disturb me a great deal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It upsets me to see someone being treated disrespectfully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I remain unaffected when someone close to me is happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy making other people feel better	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have tender, concerned feelings for people less fortunate than me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When a friend starts to talk about his\her problems, I try to steer the conversation towards something else	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can tell when others are sad even when they do not say anything	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that I am "in tune" with other people's moods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel sympathy for people who cause their own serious illnesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I become irritated when someone cries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not really interested in how other people feel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get a strong urge to help when I see someone who is upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see someone being treated unfairly, I do not feel very much pity for them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I find it silly for people to cry out of happiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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When I see someone being taken advantage of, I feel kind of protective towards him\her	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Using this 5 point scale, indicate how uncharacteristic or characteristic each of the following statements is in describing you.

	Extremely Uncharacteristic	Somewhat Uncharacteristic	Neither Uncharacteristic Nor Characteristic	Somewhat Characteristic	Extremely Characteristic
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Some of my friends think I am a hothead.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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If I have to resort to violence to protect my rights, I will.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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When people are especially nice to me, I wonder what they want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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I tell my friends openly when I disagree with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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I have become so mad that I have broken things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't help getting into arguments when people disagree with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wonder why sometimes I feel so bitter about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once in a while, I can't control the urge to strike another person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am an even-tempered person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am suspicious of overly friendly strangers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have threatened people I know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I flare up quickly but get over it quickly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given enough provocation, I may hit another person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When people annoy me, I may tell them what I think of them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am sometimes eaten up with jealousy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can think of no good reason for ever hitting a person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I feel I have gotten a raw deal out of life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have trouble controlling my temper.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When frustrated, I let my irritation show.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sometimes feel that people are laughing at me behind my back.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often find myself disagreeing with people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If somebody hits me, I hit back.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I sometimes feel like a powder keg ready to explode.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people always seem to get the breaks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are people who pushed me so far that we came to blows.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know that "friends" talk about me behind my back.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends say that I'm somewhat argumentative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes I fly off the handle for no good reason.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get into fights a little more than the average person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SUBMIT