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Maddening: The Impact of Genre on Frustration and Aggression

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Maddening:
The Impact of Genre on Frustration and Aggression

By

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11/22/14
Winter 2014
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Abstract

Video games have been thrust into the national spotlight after multiple mass shootings of recent years, begging the question of whether they corrupt our youth. At least three sides to the argument exist: those who believe violent video games result in increased levels of aggression, those who do not, and those who claim that aggression is linked with losing rather than violent content. While there have been plenty of studies focusing on losing and aggression in the action genre of video games, there has yet to be a conclusive study ranking and comparing the impact that other major genres have on gamers. This thesis attempts to fill that gap, arguing that losing in various non-violent video game titles, belonging to an array of genres, directly effects the frustration a gamer experiences, largely because frustration relates to incompetence more so than the gun fighting, gory images, and heinous crimes of mature-rated games. This claim is supported by 110 survey participants, highlighting the importance of the context of the genre over the content of the video game, as well as the social-psychological motives for needing to save face by winning, while consequently avoiding the frustration of a loss. An additional 50 survey participants showed that non-violent preferential gamers are more primed to feel frustrated and angry, than violent preferential gamers. This paper essentially backs the theory that non-violent video games of various genres can induce just as much frustration and aggression on the part of a gamer, as violent video games of the action genre does.

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Table of Contents

Abstract	2
Acknowledgments.....	3
Table of Contents.....	4-5
Introduction: Definitions.....	6-9
Chapter 1: The Video Game Dilemma	10-32
Group A	12-19
Group B	20-25
Group C.....	25-31
Summary of the Video Game Dilemma	31-32
Chapter 2: Genre and ESRB.....	33-36
Chapter 3: Survey 1 Results.....	37-50
Method.....	37
Participants	37-39
Question 1	40-41
Question 2	41-42
Question 3	42-43
Question 4.....	43-44
Question 5	44-45
Question 6	45-46
Question 7	46-48
Question 8	48-49
Question 9	49-50
Question 10.....	50
Chapter 4: Survey 2 Results	51-59
Method	51
Question 1	51-52
Question 2	52-53
Question 3	53-54
Question 4	54-55
Question 5	55-56
Question 6	56-57
Survey 1&2 Discussion.....	57-59

Chapter 5: Discussion and Future Studies..... 60-62
Works Cited..... 63-67

Introduction

Definition of Frustration, Aggression, and Violence

Before going into the existing literature, it is crucial to define a few key terms that will come up frequently. Frustration is defined as annoyance—as well as the possibility of anger—created by the inability to succeed due to a lack of competence. While frustration is often a precursor to aggression, frustration does not always lead to aggressive behavior. The frustration-aggression hypothesis (Dollard et al) claims that frustration, which they define as the blockage of a goal, causes aggression to be taken out on an innocent target (Miller et al). For example, let's say that a gamer loses in a competitive video game, causing them to feel overwhelmingly frustrated. The gamer, who is still frustrated from the loss, strikes the next person they interact with due to their pent up frustration. The frustration was caused by the blockage of the gamers desired goal—winning the video game—while the gamer's aggressive behavior was caused by their pent up frustration, taken out on an innocent person. Now that the definition of frustration has been established as well the cause of frustration, being the blockage of a goal, the next step is to evaluate aggression.

Most studies exclude any diverse investigation into the role each genre plays in altering aggression, and how each genre and specific subgenres compare with each other. For the purpose of this study, it is also important to define aggression, because it differs slightly from the terms frustration and

violence. Group A¹ essentially defined aggression as any unwanted behavior expressed to an unwilling recipient, including minor instances of pushing and shoving as components of aggression. Group A often measured aggression using the hot chili sauce test, where participants would show increases or decreases in aggressiveness when they were in control of the potency of the chili sauce the next participant would have to taste. The fault with the chili sauce test is that it is difficult to understand what prompted the minor aggressive fluctuations, when the test might not be considered an act of aggression to begin with. Group B² tended to define aggression in a quantifiable manner such as numbers of rape, murder, and assault cases. Despite the ability to track the number of violent crimes, this represents an extreme case of aggression bordering on savagery. In essence the current literature has two definitions of aggression that represent two vastly dissimilar extremes.

It is worth noting that the usage of the term aggression in this study refers to the negative aspects of the variable. Positive scenarios in which aggression is acceptable are important to recognize but they are tangential to the scope of this study. This paper defines aggression as an escalation of impulses that eventually leads to a deliberately hostile act, whether it is verbal or physical, directed at someone, oneself, or no one in particular. This paper

¹ A grouping of scholars who argue that aggression and violence is correlated to violent video games.

² A grouping of scholars who argue that there is no correlation between video games and aggression and violence.

agrees with group C's³ belief that the frustration of losing can result from an incompetent performance in pursuit of success within the video game (Katsyri et al, Schmierbach et al, Shafer).

Understanding this paper's interpretation of the term violence is imperative to have a grasp on the current literature, considering that violence is often brought up when describing the content of video games. While understanding the definition of violence is crucial to understand the current literature, it is not as important for this study due to frustration and aggression being the key variables associated with the two surveys. Regardless, it is important to make the slight distinction between aggression and violence. For instance, not all aggressive acts are violent, but it is reasonable to say that just about all violent acts are aggressive. The definition of violence is the perpetration of an unwanted act that causes physical harm to another person, stemming from the aggressive escalation (Ferguson). Dr. Ferguson describes the victim of violence as unwilling to accept the violent behavior. Is this really the case for all acts of violence? For example, a mixed martial artist (MMA) is a willing combatant who understands the dangers of the sport. Just because the mixed martial artist is willing and ready to take a few punches does not make the act any less violent. If an act looks violent, then it probably is. So what is the difference between frustration, aggression, and violence? Frustration is the annoyance that stems from the blockage of a goal

³ A grouping of scholars who argue that frustration, aggression, and violence correlates with losing and not violent content.

that has the potential to result in aggression. Aggression emphasizes built up anger that the aggressor releases, but does not always result in physical violence. Violence, on the other hand, is acting out an aggressive behavior that leads directly to physical harm.

Chapter 1

The Video Game Dilemma

Cliff Bleszinski of Epic Games denounced the notion of a causal link between video games and crime, stating “there is more crime in the summer and more ice cream is sold in the summer; therefore, ice cream causes crime” (Video). The debate of violent video game content and its connection—or lack thereof—to real life frustration and aggression has always been heated. Recent school shootings have only added fuel to the proverbial fire, inviting more people to join in on the conversation. Many politicians and parents have identified violent video games as the main cause of the latest public shootings, a claim dismissed by video game creators for its fallacious reasoning. Video Game Live founder Tommy Talarico agreed with Bleszinski, saying that “Cain didn’t bludgeon Able with a Gameboy, Genghis Khan didn’t have an Xbox live account, and Hitler didn’t play Crash Bandicoot” (Video). But if any of the aforementioned game titles did cause the gamer to experience frustration, then there is a greater chance of the gamer acting aggressively, or even worse, violently. For example, taking the frustration-aggression hypothesis into account, if any game title could evoke frustration, regardless of whether the game contained violent content, than any video game would have the potential of causing a gamer to act aggressively or even violently.

It should be noted that both Talarico and Bleszinski demonstrate an obvious bias in their defense of video games, considering they both make a living from violent video game media. Despite their bias, these quotes beautifully illustrate the fact that there are at least two sides to every argument. Regardless of whether

Bleszinski or Talarico are right there is one undeniable fact. Violent video games—specifically of the shooter category—have been the sole focus of studies while non-violent games comprising other genres have been grossly overlooked.

To comprehend the scope of the current literature regarding the impact of video games, envision a harkness table where competing groups A and B are situated on each half of the table. Group A is comprised of those who believe that violent video games make the gamer more frustrated leading to increased aggression. Group B disagrees, claiming that violent video games do not increase aggressive pre cursors and are only a convenient scapegoat to a much larger problem. Group A and B represent an either or dichotomy, also known as a false dilemma. A false dilemma operates under the notion that there are limited alternatives that exist between two extremes. The two extremes in this case, group A and B, argue that the frustration associated with violent video games either cause aggression and violence, or violent video games do not cause aggression and violence.

Now imagine group C flips the table upside down, creating chaos among scholars by adding a new dimension to the debate. Group C neither supports groups A and B, nor completely rejects their claims, proving to be a valid alternative to the false dilemma. This third group argues that aggression and its relation to violence is not as strong as aggression and its link to losing, meaning that losing a game produces more aggression from the gamer than the violent content of the game does. This paper argues that losing makes gamers more frustrated. Therefore, the spike in the gamer's frustration increases the likelihood of aggression, which can

lead to violence. Andrew Przybylski, a psychologist at Oxford, uses the self-determination theory to illustrate the idea that being bad at a video game is a trigger for anger. Self-determination theory relates to a human beings need to grow and to achieve fulfillment through productive and effective actions. This theory includes three basic psychological needs: the need for competence, the need for autonomy, and the need for relatedness (Bennett). In essence, the frustration of being incompetent has more of an impact on sparking anger than violent content does. The opinion of this paper aligns with the already established thinking of group C, but that's not to say that group C's argument is unopposed. The following is a detailed review of the literature consisting of Group A, B, and C's argument.

Group A:

Group A has published many studies (Bushman et al, Greitemeyer, Anderson, DeLisi, etc.) that have delved deep into the effects of violent M rated first and third person shooters. First-person shooters such as *Battlefield 4*, *Call of Duty*, and *Wolfenstein* represent a five billion dollar market (Keim). A first-person shooter is when the gamer controls the virtual soldier in a first-person point of view, giving the gamer the feeling that he is in the shoes of the warrior as s/he shoots the gun and lobbs the grenade. This huge market comprises mainly of teenagers and young adolescents who often deny that playing these games make them more inclined to act violently (Greitemeyer). When a gamer defends video games as not promoting aggressive behavior, s/he often says the same thing: "I have never killed anyone."

This biased perception of video gamers of all ages passively scoffs at the idea that video games relate to aggression.

As previously described, there are three categorical sides to the issue of video game violence, and no collective is more adamant than group A. Members of group A argue that violent video games definitely relate to an increase of a gamer's aggression. The recent public shootings in Columbine, Sandy Hook, and Aurora placed mature-rated video games into national debate and have drawn the ire of citizens, media, and politicians. Violent video games have once again become the favored scapegoat for this national dilemma after it was revealed that the murderer of twenty-six people in Newton, Connecticut spent much of his time playing the first person shooter *Call of Duty*. Much like with other public mass shootings such as the tragedy in Columbine, violent video games, specifically first person shooters, became the culprit of these acts.

First-person shooters such as *Battlefield 4*, *Call of Duty*, and *Wolfenstein* represent a five billion dollar market (Keim). This huge market is comprised mainly of teenagers and young adolescents who often deny that playing these games make them more inclined to act violently (Greitemeyer). Tobias Greitemeyer, a psychologist at the University of Innsbruck, conducted two experiments⁴ that

⁴ The first experiment had half of the participants play a violent game, while the other half played a non-violent game. Half the participants were asked to envision that they had performed a variety of aggressive behaviors while the other rated the aggressiveness of each behavior. The results showed that playing a violent game decreases the gamer's perception regarding the severity of violent acts.

addressed gamers and their weakened perception that violent games result in an increase in their aggressive behaviors.

Greitemeyer's second experiment focused on supporting the findings from the first experiment that violent video games alter a gamer's perception of what constitutes aggressive behavior. He also aimed at addressing the varying views of what counts as aggressive behavior after playing a violent video game (Greitemeyer). Just like the first experiment, half the participants were randomly assigned to play a violent video game (*Wolfenstein*) and the other half played a neutral video game (*Tetris*) while the behaviors were assessed on a Likert scale. The behaviors in question were 52 aggressive behaviors read to the participants, where the participant would then rate the severity of each instance of aggression. The caveat to this experiment was that after participants finished playing, they were asked to administer a hot chili sauce-ranging from six bottles containing between five and one hundred milliliters of sauce-to another participant. This experiment reaffirmed the theory that playing a violent video game alters the gamer's perception of the severity of the aggressive behavior in question; the experiment also suggested that violent video games increase the likelihood of dehumanization. While participants who played the violent video game selected a hotter chili sauce that caused more pain for another participant, in reality every participant was given the same chili sauce. The participants' increased exposure to violent media subsequently made the players more prone to viewing their own behavior as nonaggressive. The severity of these findings along with the recent American mass-

shooting crisis, prompted President Barack Obama in 2013 to order further study into the question of how video games are influencing our youth (Park).

Brad Bushman, a psychologist at Ohio State University, claims the results of these studies show that violent video games do increase anger, aggressive thoughts and feelings, and physiological arousal, such as elevated heart rate and blood pressure (Bushman). While Bushman attacks video games for allegedly promoting aggression, he concedes that it is irresponsible to claim that violent video games cause murder. While this concession represents a formal statement of academic integrity, he goes on to reaffirm his position that violent video games make young people more aggressive. The core of his argument relies partially on the three major differences between violent video games and violent television and films. His first point is that video games are active while watching television is a passive activity. Bushman goes on to argue that people learn better when they are actively involved, such as manipulating a character on a screen by using a controller. The second point is that a video game participant is apparently more susceptible to identifying with a video game character due to a gamer's control of the character. By having the same visual perspective as a soldier in a first-person shooter, or slightly more distant perspective of a third person shooter, gamers might feel more connected to the character. Bushman's last point is that violent video games reward violent behavior by awarding points for achieving milestones within a game. Unlike video games, rewards from television and film are not directly connected to the viewer's behavior (Bushman). For example, a snowboarding video game will reward the gamer for successfully landing a double cork 1080 with points, while watching Shaun White

land a double cork 1080 on ESPN will obviously not give any such reward to the passive viewer. Bushman's three points are the basis for his claim that violent video games are more harmful than films and television programs because active entertainment is more harmful⁵ than passive entertainment, and thus active entertainment does affect the behavior of the participant more than passive entertainment⁶.

The third-person effect provides another explanation for why gamers deny the alleged harmful effects of video games. When applied to video games, this psychological theory suggests that gamers believe media have a negative effect on others, but not on them (Davison). A rejection of the idea that violent video games have an impact on participants leads to the denial that harmful effects are transferred to gamers. The denial of the harmful effects of video games, according to Bushman, often comes from a lack of recognition of the negative effects of media and entertainment industry products.

Just as the scientific evidence regarding violent video games has increased drastically over the last two decades, there have been fewer news reports covering

⁵ Group A scholars continue to ask one simple question. Why are the harmful effects of violent video games being ignored? Unfortunately, the answer is much more complicated than the question.

⁶ A gamer's defense is that they play violent games and have never killed anyone, which relies on the unpredictability and extremity of murder. The base rate probability, as it is with murder, is extremely low (Bar-Hillel). Leading many to not only ignore the base rate of murder, but also minor forms of aggression that are not factored into the base rate probability. Bushman argues that gamers who are not capable of remembering instances of aggression when playing violent games ignore the base rate of murder and conclude that the violent game has no impact on an increase of their own aggression levels.

the topic (Anderson). In addition, Bushman claims that 48 times more studies arguing for the negative effects of violent video games have been published in top tier scientific journals (Bushman, Brad). This inverse relationship between scientific reports and news reports could be a result of the entertainment industry failing to address the growing concern over the contents of its products. Bushman and Craig Anderson of Iowa State University go so far as to say that the entertainment industry is the modern day equivalent of the tobacco industry insofar as both industries have denied the risk of their products (Bushman). The structure and findings of a study are what matter and not just the sheer number of studies conducted.

The logical question that remains from Greitemeyer's studies is how violent video games affect children⁷. In a study of 3,034 boys and girls in the third, fourth, seventh, and eighth grades in Singapore, Professor Craig Anderson asked the children questions about their video game habits three times over a period of two years (Park). Children whose exposure to violent video games decreased over the course of the study scored lower on aggressive behavior and attitudes towards others. Anderson concluded that children become more rational as they begin to develop mature ways of handling situations, explaining the decrease in aggressive behavior⁸ (Park). Anderson also concluded that overexposure to violent games promoted the view that taking an aggressive approach to achieving a solution is

⁷ Greitemeyer's studies target participants between the ages of 20 and 30.

⁸ The results showed a pattern of increased aggressive behavior (pushing, shoving, hitting) in students who upped their hours of screen time over that period (Park).

acceptable. For instance, if someone were to accidentally bump into a subject who had played many hours of video games, the gamer would be more likely than a non-gamer to act aggressively towards the person who had accidentally bumped into them. This is not the only study that has examined the negative effect violent video games could potentially have on youth⁹.

A group of Iowa State University professors, most notably Anderson and DeLisi, recently conducted a similar study on American juvenile delinquents. The study examined 227 juvenile delinquents, 55% boys and the 45% girls, from Western Pennsylvanian long-term residential placement facilities. The goal of the study was to gauge the reaction of antisocial behavior among the most “serious, violent, and habitually antisocial youth” (DeLisi 133). The juvenile delinquents represented in the 227-person sample (n=227) correlated with the modal values of fifteen acts of delinquency, meaning that 15 acts of juvenile delinquency was the most common among the participants in addition to nine acts of serious violence, including but not limited to fighting, hitting, and attacking others (DeLisi). In essence, examining the connection between violent video games and youth in a delinquent correctional facility was the purpose of the Iowa State study.

The data was collected by trained graduate students using the Computer-Assisted Survey Interview (CASI) techniques as the students measured the frequency of play, perceived violence of the video game content self reported by the

⁹ Rowell Huesmann, a psychology professor at the University of Michigan, believes that repetitive violent video game playing will reinforce gamers’ observational learning, thus increasing the risk of aggression due to the gamers expanding knowledge of violence as a violent video game participant (Keim).

students, number of years the youth had played video games, and the youth's weekly screen time (DeLisi). It was noted that youth in the general population were exposed to three hours of violent media per day, compared to youth in the psychiatric population who were exposed to six hours per day (DeLisi). The results showed a correlation among playing violent video games—or having an inclination to play these games—delinquency, and violence. The implication is that violent video games are a serious risk factor for criminal behavior and juvenile delinquency. In addition, youths who possess a pre-existing psychopathology are more susceptible than X group to the detrimental content of violent video games.

Anderson commented on the findings in regard to recent mass shootings:

You can't take the stand of the NRA that it's strictly video games and not guns, you also can't take the stand of the entertainment industry that it has nothing to do with media violence and it is all about guns and not about media violence. They're both wrong and they're both right, both are causal risk factors (DeLisi 2).

Recognizing that violent video games aren't the only problem increases the credibility of Anderson's work by presenting unbiased answers, but that isn't to say there isn't opposition to this line of thinking.

Another study proposed that constantly playing a violent first- person shooting video game can help gamers learn to shoot a real (tangible) gun more accurately than they otherwise would had they not played the game (Whitaker). In summation, group A presents a strong argument connecting violent video games to an increase in a participant's aggression levels. Despite the numerous studies backing Group A's theory, a much smaller group of scholars are vehemently opposed to their line of thinking.

Group B:

Group B is comprised of a smaller group of scholars who argue that violent video games do not lead to aggression. This group also raises the logistical challenges of a longitudinal study that group B believes group A must conduct to establish a causal relationship between video games and violence. Scientists have been forced to study violent video games in more limited ways including but not limited to attitudinal and experiential studies. University of Central Florida psychiatrist Ryan Hall backs the thinking of group B. Hall believes that there is a lack of scientific evidence supporting group A's claims, and that violent video games are not turning gamers into killers. Fears over the negative effects of video games are reminiscent of past popular culture condemnations, a theory that scholars, politicians, and media negligently reinforced.

In the 1950's, the United States Senate Subcommittee on Juvenile Delinquency attempted to ban comic books (Hammond). Some scholars also called for the censorship of certain superhero and horror comic books. Fredric Werthem, a forensic scientist, claimed that Superman embodied a sadistic fantasy that harmed the innocence of child development (Keim). The government worried that comic books, such as *Batman and Robin*, included homosexual undertones and were unfit for the eyes of American youth. Rock and roll was also perceived as dangerous because many people thought that it promoted suicide. Current day scholars equate the recent attacks on violent

video games to the baseless and uninformed attacks of the fifties. In response, 230 scholars have written to the American Psychological Association imploring them to retract their policy statements on media violence (Keim). When it comes to the defenders of video games, no scholar has been more outspoken than Dr. Christopher Ferguson.

Ferguson, who is an assistant professor of psychology at Texas A&M International University, has been one of the leading researchers addressing concerns over the impact of video games. Concerns over media content and its negative effect on youth and society have been recorded since the days of the ancient Greeks and Romans (Ferguson). Plato argued that plays, poetry, and theatrical performances had an injurious effect and that children might have difficulty discerning between fact and fiction (Ferguson). Ferguson discusses the detailed intricacies of moral panic as a “quest by some members of society to impose their moral beliefs on the greater society through the tactic of fear” (Ferguson 70). A moral panic is an opportunity for members of learned professions to seize control of a society’s unwarranted fears through the control of communication and information, and by controlling the independence of youth. The youth are characterized as vulnerable and lacking direction, in dire need of guidance for the sake of their moral sanctity. This current media and political blitz has led members of group A to manipulate the current moral panic over the effects of violent video games.

Scholars such as Anderson and Bushman established what appeared to be a causal relationship between violent video games and increased

aggression, much like the link between smoking and lung cancer. Establishing cause is incredibly rare in social sciences where such a claim must be supported unanimously. In 1999, the American Academy of Pediatrics (AAP) claimed that there have been 3,500 studies conducted on media violence with only 18 producing null effects¹⁰ (Ferguson). In 2005, the American Psychological Association's (APA) resolution on video game violence recognized a causal link without citing any skeptics of their stance¹¹ (Ferguson). These claims show that Bushman was possibly using inaccurate statistics when he claimed there to be 48 times more studies published that connected video games and violence. The Illinois courts supported this assertion when referring to the work of Iowa State University Professor Craig Anderson, a lead scholar of Group A. The court stated that Anderson failed to establish a causal relationship between violent video games and aggression, and that he disregarded conflicting research altogether. The supreme court concurred in 2011 regarding the *Brown v EMA case*, stating that there is a reason every court has rejected Bushman's claims and that attention should be refocused on "more pressing matters" (Ferguson). To add to the embarrassment, the court also condemned politicians for "cherry picking" data to enact anti-video game legislation, proving to be another case of moral panic

¹⁰ Ferguson investigated, finding only 200-300 non-published and published studies compared to the 3,500 originally reported. The AAP reused the statistic in 2009. For the statistic to be true, no studies could have been published in the last ten years, proving this statistic to be unsubstantiated.

¹¹ Should the APA cite opposing views? An ethical dilemma, no doubt.

manipulation (Ferguson 73). The ethics of these politicians and scholars make an already convoluted discussion more byzantine.

Bleszinski was previously quoted, saying that “there is more crime in the summer and more ice cream is sold in the summer; therefore, ice cream causes crime” (Video). This is an example of the third variable effect, which leads to the unwarranted causal relationship between two variables based on a third variable. Citing Bleszinski’s example there is more ice cream sold in the summer as well as more crime in the summer. This does not mean that ice cream causes crime, it means that the third variable leads to an increase in crime and ice cream sales. The third variable effect concerns variables-such as sex, gender, family, and bullying, among others-that may account for a part of the connection between violent video games and aggression. It is imperative to control for third variable effects, because any study including a bivariate correlation might cover up subsequent effects. The use of small effect sizes, such as the small effect between violent video games and aggression, ranges between 0 and 2.5%. While statistically significant, these miniscule figures are likely to be published, but are too small to be meaningful¹² (Ferguson).

To clarify, group A tends to focus on minor forms of aggression in their studies such as pushing, bullying, and the hot sauce test, while group B targets

¹² Ferguson also claims that a citation bias exists amongst Group A scholars. In short, this publication bias allows for the publication of any statistically significant study that supports Group A’s anti video game claims

major forms of aggression such as homicide, assault, and murder¹³. However, serious crimes such as murder represent the most severe form of aggression, while minor forms of aggression such as pushing is unaccounted for. So how does the scientific community come to a consensus? Waiting for test subjects to commit a crime is unethical, but it unfortunately appears that this is the only way for scholars, politicians, and the media to come to an agreement. The question that remains is how this problem can be resolved. Ferguson suggests that to reduce crime, the public should refocus its attention on issues such as poverty and mental health care. In addition, The United States Supreme Court acknowledged the lack of proof that any plausible correlation between aggression and violent video games exists (Ferguson). Markey boldly stated “finding that a young man who committed a violent crime also played a popular video game, such as *Call of Duty*, *Halo*, or *Grand Theft Auto*, is as pointless as pointing out that the criminal also wore socks” (Makuch)

Unfortunately, the argument that violent video games do not have an impact on aggression and violence seems improbable. While Dr. Ferguson raises some interesting points, his ardent defense that video game exposure does not lead to an increase aggressive behavior in any way, is strongly opposed by the academic community. In addition, Markey and Ward cite the inverse relationship between the increase in video game sales and the

¹³ Professor Markey of Villanova University, noted violent crime amongst youth decreased, as the sales of violent video games increased (Markey et al.). Similarly, Ward’s study found that higher rates of violent video game sales correlated with a decline in violent crimes (Carey; Ward)

decrease in crime. While crime could possibly stem from aggression, most aggressive acts are not considered crimes and are certainly not quantified as such. For instance, murder represents a serious crime that is often an extension of an aggressive act, as well as feeling of frustration. Pushing, shoving, and hitting are all aggressive acts that are not reported as crime and therefore are not quantified the same way as murder. This argument makes a valiant effort at defending the integrity of video games, but it is unlikely that video games do not evoke any negative behavior

Group C:

The last category, represented by group C, can be considered a hybrid of the two other sides, where video game aggression correlates with losing but not violence in the gameplay. The aggression built up by video games does not necessarily relate to taking lives on a virtual online multiplayer *Call of Duty* map, but to the frustration of playing a game that is rated E for everyone. Therefore, aggression should be studied in the context of the game and not its content (Tassi). For instance, what might lead to aggression could be a loss in an online ranked game of *NHL 15*, where an individual's ranking and record are in jeopardy. The gamer joins EA Sport's online server and competes against a human-opponent in a ranked match where the results will be recorded to the world leaderboards. When a gamer loses, s/he is handed a loss and a heap of frustration in the process. The content in *NHL 15* is not violent in nature, but the context of the hypothetical example could

cause someone to feel frustrated and aggressive. In a study measuring aggression versus competence, the game *Half-Life 2* was provided to subjects. One group received a tutorial while the other group was given no instruction (Tassi). Przybylski¹⁴ concluded that the group forced to play without any prior instruction showed the most aggression (Tassi). Interestingly enough, this was the group that played the nonviolent version, showing that incompetence in a nonviolent game caused more anger than playing a violent game. A player's psychological need to win and to perfect the game trumped the idea that aggression relates to the violent content of a video game.

A similar player versus player (PvP) study showed that participants experienced "enjoyment-reducing levels of hostility, such as losing" (Shafer 719). This study compared game factors such as game content, competitive situations, and the outcome of the game on enjoyment and hostility levels for PvP games and player versus environment (PvE) games. PvP games significantly increased hostility, possibly due to the anonymous human opponent, while PvE did not significantly alter hostility when the opponent was a computer generated AI character. Winning PvP games also produced lower enjoyment levels, confirming the sports adage that athletes hate to lose more than they love to win. Gamers who play against human-

¹⁴ Przybylski conducted a study where there was one standard version of *Tetris*, and on version designed to give the participant the wrong piece 78% of the time. After words, participants would suggest how long the next participant should have to put their hand in cold water. The group who played the harder version suggested a time seven seconds greater than those who played the normal version. In essence, frustration produced aggression (Tassi and Bennett)

controlled opponents experience more hostility and enjoy the game less than those who play against a computer-generated opponent (Shafer).

Studying the reduction of enjoyment has not been limited to PvP vs. PvE games. Another source further explained the relation between difficulty and competency and the idea that competency impacts enjoyment (Schmierbach). Difficulty is a variable that scholars claim impacts the gamer's enjoyment of playing the video games. The difficulty of a game can have varying effects on gamers based on the competitiveness of each gamer. The self-determination theory suggests that gamers respond to video games in which they achieve "a sense of relatedness, autonomy, or competency", to help stay motivated while also growing as a gamer (Schmierbach 106). Whether these factors are realized directly correlates to the gamers' enjoyment while playing the game. The study used results from 121 students (n=121) and divided participants up into an easy and hard video game group while they played either the hard or easy version of *Bloons Tower Defense 4*, a non-violent tower defense video game. The results were clear: the more difficult the game, the less enjoyable the experience for the gamer (Schmierbach 108). According to this study, the frustration of incompetence decreases the enjoyment of a game without the variable of violence.

From the perspective of this paper, competency relates to competitiveness. Those who are ultracompetitive will have their own standard of competency for a video game. A landmark Finnish study recently showed that playing the first-person tank shooter *BZFlag* changes the reward circuits of the brain. This is done by

evaluating the striatal functional magnetic resonance imaging (fMRI) responses to successes and failures in active and vicarious violent video game playing (Kätsyri).

The successes and failures of gamers, more aptly described as wins and losses, fulfills distinct criteria of rewards and punishments of winning and losing. The result of the game provides the gamer with feedback based on his or her performance. The success and failures of the gamer results in either pleasant or unpleasant emotional responses— win equals pleasant emotional response, loss equals unpleasant emotional response— based on the result (Kätsyri). To test these characteristics, 11 participants, with a mean age of 25.6, a mean game playing rate of 7.8 hours per week, and a range of 1-20 hours a week, were carefully selected.

The participants were all men because men tend to play more video games per hour and are usually more motivated by the game (Kätsyri). Kätsyri and his staff stayed clear of participants who played more than 30 hours a week, the usual threshold for addictive gaming and excluded any participants with self-reported of neurological and psychiatric disorders (Kätsyri). The 11 participants played two sessions of *BZFlag*. The participants played one round of the video game while they watched a pre-recorded video of *BZFlag* gameplay during the second round. Kätsyri offered a monetary reward and punishment for wins and losses with a fixed price of 20 euros, and a .33 euro increase or decrease according to the result. Unbeknownst to the participants, everyone received 30 euros regardless of their performance.

The scientists targeted the following reward circuits in the brain: the mesial, striatal, and frontal regions, with the striatum being divided into six sub regions such as the nucleus accumbens (NAcc), ventral caudate (vCaud), dorsal caudate

(dCaud), ventral anterior putamen (vaPut), dorsal anterior putamen (daPut), and posterior putamen (pPut) (Kätsyri 5). The images of the brain fMRI responses were tracked under the conditions of winning and losing while playing and winning and losing while watching. The results provided a landmark scientific result. Winning evokes stronger behavior and reward activation in the striatum, more so than losing, during active gameplay (Kätsyri). To add to the findings of the scientists, striatum responses depend on the gamer's actions and impending result in the game.

Therefore, winning and losing had an impact on the striatum response of the participant. Losing resulted in an unpleasant experience, while winning created a more pleasant experience with the game. Kätsyri added that "the striatal and mesial deactivations caused by gameplay events (wins and losses) during the active versus vicarious gameplay were correlated with the players' positive affect self-ratings for the corresponding whole sessions" (Kätsyri 10). In short, the gamer's experience with the game was altered by the result (win or loss), more so than the violent content of *BZFlag*. The player's natural attitude towards saving face affected not only their own self-rating, but also the striatal activation correlated with winning and losing. This study confirms there is neurological evidence that shows that losing produces much less enjoyment than winning.

The idea of always trying to improve and maintain a ranking relates especially to the world of amateur and professional online video game matches across a variety of genres. The downside of this ideology is the competitive player's reaction to a loss. This behavior mimics that of a professional athlete in a non-

contact sport like tennis, who smashes his or her racket after a loss. What is the difference between the tennis player and a gamer smashing his controller after a loss in a non-violent game like NHL 15? Both the athlete and the gamer are engaged in non-violent activities that result in an unexpected drop in ranking or a loss, both of which can lead to aggression. This idea that the only acceptable result is a win holds true beyond the gridiron¹⁵. It appears that learning to exercise restraint after a loss could prove to be more beneficial to society than blaming violent video games for corrupting our youth. In essence, saving face in online video games stems from a learned and possibly innate nature to win, while losing correlates with aggression, not violence.

Studying rated E (everyone) and rated T (teen) games, along with every other genre and video game rating, will shed light on the question of whether losing provides a more significant relation to aggression than violence does. A survey of gamers and non-gamers alike will give the scientific community a better understanding of which genre correlates the most with aggression. It has already been established that losing can alter the enjoyment levels of gamers. Since most video game genres are based around competition, where losing is a distinct possibility, surveying gamers and non-gamers will provide a deeper understanding of how genre impacts behavior.

¹⁵ Vince Lombardi once said, "show me a good loser, and I'll show you a loser" (Sancton 1).

Summary of The Video Game Dilemma:

Up until this point in the video game discussion, there has not been any conclusive study connecting the effects of frustration and aggression with various genres. Instead, the focus is on proving or debunking the impact of first person shooters (FPS) and third-person shooters (TPS) on gamers. The shortcoming of this approach is that other video game genres have been overlooked. In fact, FPSs such as *Call of Duty* and TPSs such as *Grand Theft Auto* are only one sub group of the video game action genre. A few other examples of video game genres are adventure, role-playing games (RPGs), strategy, and sport genres, all of which contain numerous subgroups. The subgroups of strategy games, for instance, are tower defense, war games, and empire games. It must be noted that the action genre is not the only genre with violent and rated M video games, but the sub genres of action—such as first and third person shooters— comprises predominately of violent mature-rated video games

To have a better understanding of the effects of various genres, each specific genre must be studied. For example, real-life sports often promote and encourage aggressive behavior, but this theory of sports correlating with aggression, in the form of horse collar tackles and bare fisted hockey fights, has not been thoroughly tested in the virtual world (Aggression). This raises the question of how a typically non-mature rated genre, being the sports genre, correlate with inducing aggression and frustration on gamers. By skimming over other video game genres that consist mainly of non-mature rated titles, such as the sports and role-playing genres, there will never be a clear understanding of which genre and video game titles, makes the

gamer more prone to frustration and aggression. This study examines the validity of Group C's argument, while comparing the impact each genre has on creating frustration and aggression among gamers, as well highlighting the differences in self reported feelings of frustration between non-violent and violent gamers.

Many non-gamers ask a common rhetorical question: why should I care? And why should people care about an issue involving a developing media form that some older generations may never use? The answer is simple. The effects of video games arguably impact non-gamers as much as they influence gamers. This new interactive media form has been aided by the technological boom of the past decade, and the relatively young age of gamers reflects this trend. The graphics, physics, and multiplayer capabilities of video games have partially blurred the boundary between virtual and non-virtual worlds. Despite advancements in the gaming industry, there are still many people with minimal or no gaming experience that might struggle to find a reason to engage in the issue, but they should. As the survey results conclude, non-violent games and violent games, making up various genres outside of action, does increase frustration and aggression in varying amounts; therefore, monitoring video games of a variety of genres and subgenres would be conducive to the wellbeing of gamers and non-gamers alike. If Americans truly believe that children and young adults are this country's future, then it would behoove us to develop a thorough understanding of the triggers of frustration, in addition to the probability of the frustration escalating into aggression, instead of taking a shortcut by scapegoating violent video games as the cause of a much more complex problem.

Chapter 2

Genre and Entertainment Software Ratings Board (ESRB)

Before analyzing any data it is important to have a basic understanding of how video games are classified and how they are rated. There are eight main video game genres and various sub-genres within each group. Some genres are similar enough that they are often grouped together.

1. Action

The action genre consists of titles that include combat, quick controller reflexes, and fast developing storylines and skills (Eldridge). Although some would classify shooting games as their own genre, under this definition first- and third-person shooters would be considered two subcategories of action. Examples of action games would be *Call of Duty*, *Grand Theft Auto*, and *Assassins Creed*.

2. Adventure

Adventure games emphasize the exploration of the game's interactive world. Some definitions combine both action and adventure, but for the purpose of this study it is important to note that there is a slight distinction between the two. A newly formed subgenre of adventure is the sandbox or open world game.

3. Role-playing

These games are driven heavily by the story as the gamer navigates through the campaign of the game. *Fallout* is a Role Playing Game (RPG) where the gamer controls a character through post-apocalyptic ruins (Eldridge). *Skyrim* is another popular RPG. In these games, the gamer is given control of a specific character as s/he grapples with the varying decisions that must be made to complete the campaign.

4. Simulation

Simulation games are a recreation of reality. Construction and societal simulations such as *Roller Coaster Tycoon*, *Minecraft* and *The Sims* are three of the most notable titles. The purpose of these games is to recreate real life situations where the gamer must manage a society with limited resources.

5. Sports

This genre is composed of games that attempt to simulate a real life sport. All four of the major American sports—basketball, baseball, ice hockey, and football—have their own video game titles. The most recent releases of the corresponding games are *NBA 2K15*, *MLB 14-The Show*, *NHL 15*, and *Madden 15*. Other sports that are depicted by video game titles are tennis, golf, NASCAR, and Formula One, to name a few.

6. Strategy

Strategy games revolve around making quick decisions involving war-like situations (Eldridge). In these types of games, participants are given a fixed amount of resources that can be used at their own discretion. Examples of strategy games are *Civilization* and *StarCraft*. The most popular international personal computer video game of any genre is *League of Legends*, a game that draws in an astounding 27 million gamers per day (Tassi).

7. Puzzle

This genre is simply composed of puzzle video games. *Tetris*, *Bejeweled* (*Candy Crush* etc.) and *Portal* are all staples of the puzzle genre. These games require the adequate formulation of shapes and colors to satisfy the completion of a scenario, similar to a tangible puzzle.

8. Other

This genre is comprised of games that are unique and unmatched by rival titles. Since video games have rapidly evolved there are often new games that do not fit neatly into the definitions of existing genres. The Other category also includes existing genres that represent niche markets. Music, party, and casual are all separate genres that fit into the Other category. Games like *Guitar Hero* (music), *Mario Party* (party), and *Jeopardy* (casual) fall into the Other category.

Within each genre and subgenre, each individual video game title is given its own separate rating. Most studies have focused solely on the

subgenres of first and third person shooters that have an ESRB rating of M for mature. The following table, taken directly from the Entertainment Software Rating Board website, describes each rating (Search).

Rating Categories



EARLY CHILDHOOD

Content is intended for young children.



EVERYONE

Content is generally suitable for all ages. May contain minimal cartoon, fantasy or mild violence and/or infrequent use of mild language.



EVERYONE 10+

Content is generally suitable for ages 10 and up. May contain more cartoon, fantasy or mild violence, mild language and/or minimal suggestive themes.



TEEN

Content is generally suitable for ages 13 and up. May contain violence, suggestive themes, crude humor, minimal blood, simulated gambling and/or infrequent use of strong language.



MATURE

Content is generally suitable for ages 17 and up. May contain intense violence, blood and gore, sexual content and/or strong language.



ADULTS ONLY

Content suitable only for adults ages 18 and up. May include prolonged scenes of intense violence, graphic sexual content and/or gambling with real currency.



RATING PENDING

Not yet assigned a final ESRB rating. Appears only in advertising, marketing and promotional materials related to a game that is expected to carry an ESRB rating, and should be replaced by a game's rating once it has been assigned.

[Back to Top](#)

Chapter 3. Survey 1 Results

Method

The first survey attempts to reveal the participants beliefs regarding the perceived impact violent content has on the gamer. For this survey, 110 participants responded—which will be discussed in further detail in the next section—by answering a variety of questions. Some of the questions asked the responders to rate their video game experience, while others asked them to rank the genres based on the likeliness of that specific category leading to violent behavior. In short, this survey attempts to reveal some of the beliefs that non-gamers and gamers have regarding the impact video games have on our society.

Participants

The minimum sample size was calculated as $n \geq \frac{1}{4} \left(\frac{1.645}{.08} \right)^2$, where the confidence (Z_c) was 90% with a maximum allowable error (E_{max}) of .08. The result was that $n \geq 106$ for there to be 90% confidence with a maximum allowable error of 8%. 110 participants ($n = 110$) were surveyed, 57 responders were targeted through email, and 53 were targeted through the survey website. The following charts break down the 53 responders targeted through the website.

Gender

Answer Choices	Responses	
▼ Male	47.17%	25
▼ Female	52.83%	28
Total	53	

Age

Answer Choices	Responses	
▼ < 18	0.00%	0
▼ 18-29	20.75%	11
▼ 30-44	22.64%	12
▼ 45-60	28.30%	15
▼ > 60	28.30%	15
Total	53	

Income

Answer Choices	Responses	
▼ \$0 - \$24,999	13.04%	6
▼ \$25,000 - \$49,999	17.39%	8
▼ \$50,000 - \$99,999	26.09%	12
▼ \$100,000 - \$149,999	36.96%	17
▼ \$150,000+	6.52%	3
Total	46	

Education

Answer Choices	Responses	
Less than high school degree	3.85%	2
High school degree	13.46%	7
Some college or Associate degree	21.15%	11
Bachelor degree	36.54%	19
Graduate degree	25.00%	13
Total		52

Location of Responder

Answer Choices	Responses	
New England	9.43%	5
Middle Atlantic	9.43%	5
East North Central	11.32%	6
West North Central	9.43%	5
South Atlantic	22.64%	12
East South Central	0.00%	0
West South Central	15.09%	8
Mountain	5.66%	3
Pacific	16.98%	9
Total		53

The gender range is close, though the majority of responders are males. No responder was under the age of 18, with 56.6% of participants over the age of 45. Of the 52 responders 82.6% had some form of higher education, and their income levels reflected this trend, with 69.57% earning \$50,000 or more. All 110 responders are located in the United States.

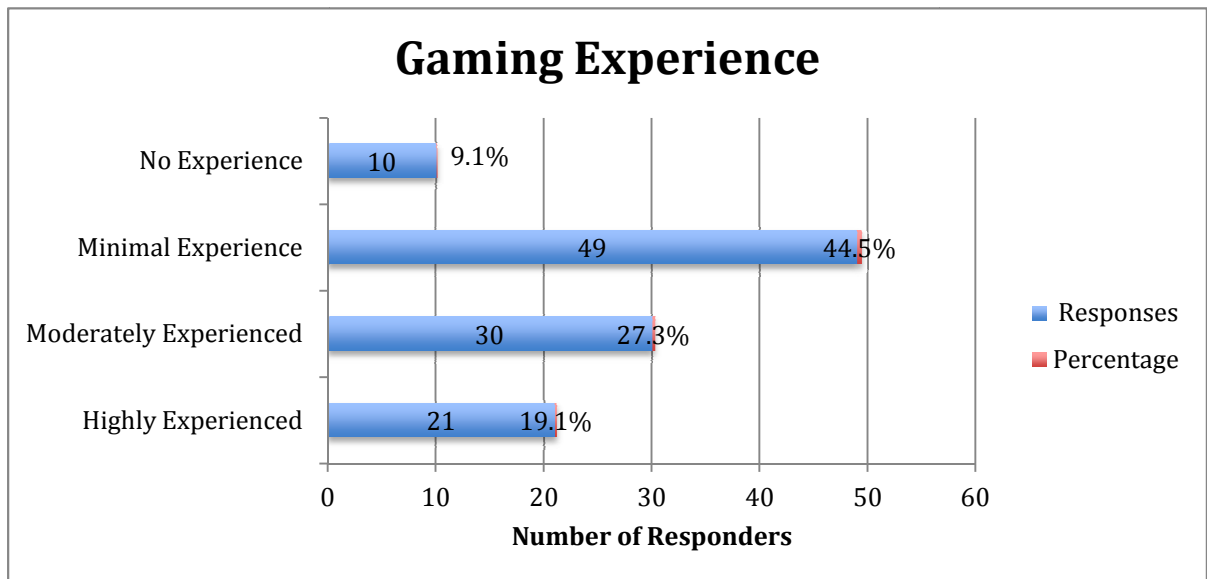
Questions

The survey was made up of ten questions. The questions and results are listed below, while the discussion section will follow the results section of survey 1 and 2.

1. What is your experience with video games?

Answer Choices	
▼	Highly experienced
▼	Moderately experienced
▼	Minimal experience
▼	No experience
Total	

The no experience group is composed of gamers who have reported never playing a video game, while minimal experience is defined as only having limited exposure to



video games. Moderate experience is defined as having at least an average amount of video game experience, while high experience is categorized as having the greatest exposure to video games. A majority of the participants possessed minimal

experience with 44.5% belonging to this group. Moderate to high experienced gamers comprised 46.4% of the survey population, and 9.1% claimed to have no video gaming experience

all. For this study, gamers refer to participants who claimed to have a high or moderate experience

Experience Level	Responses	Percentage
Highly Experienced	21	19.1%
Moderately Experienced	30	27.3%
Minimal Experience	49	44.5%
No Experience	10	9.1%

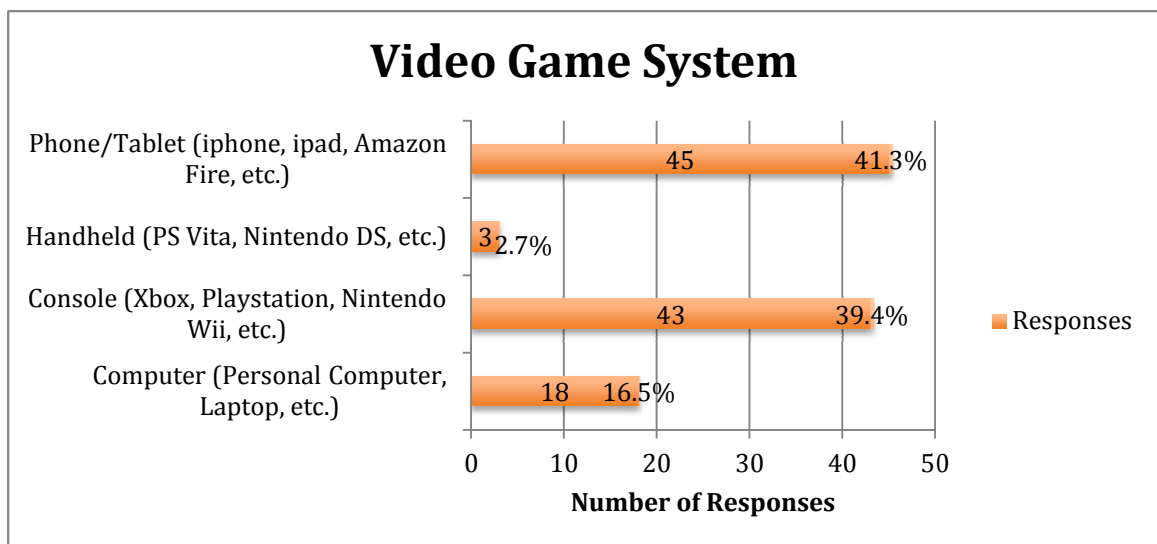
at will level

in relation to video game competency. Any participant who claimed to have no experience or minimal experience will be referred to as a non-gamer. Therefore, 46.4% of survey participants were gamers, while the other 53.6% were non-gamers.

2. What video game system do you play with the most?

Answer Choices
Computer (Personal computer, Laptop, etc)
Console (Xbox, Playstation, Ninetendo Wii, etc)
Handheld (PS Vita, Ninetendo DS, etc)
Phone/Tablet (iphone, ipad, Amazon Fire, etc)
Total

As the chart shows, 41.3% of survey respondents play video games on their phones

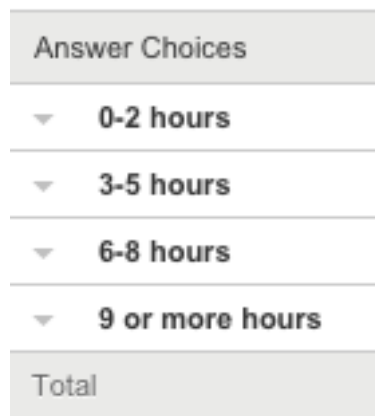


Game System	Responses	Percentage
Computer (Personal Computer, Laptop, etc.)	18	16.5%
Console (Xbox, PlayStation, Nintendo Wii, etc.)	43	39.4%
Handheld (PS Vita, Nintendo DS, etc.)	3	2.7%
Phone/Tablet (iPhone, iPad, Amazon Fire, etc.)	45	41.3%

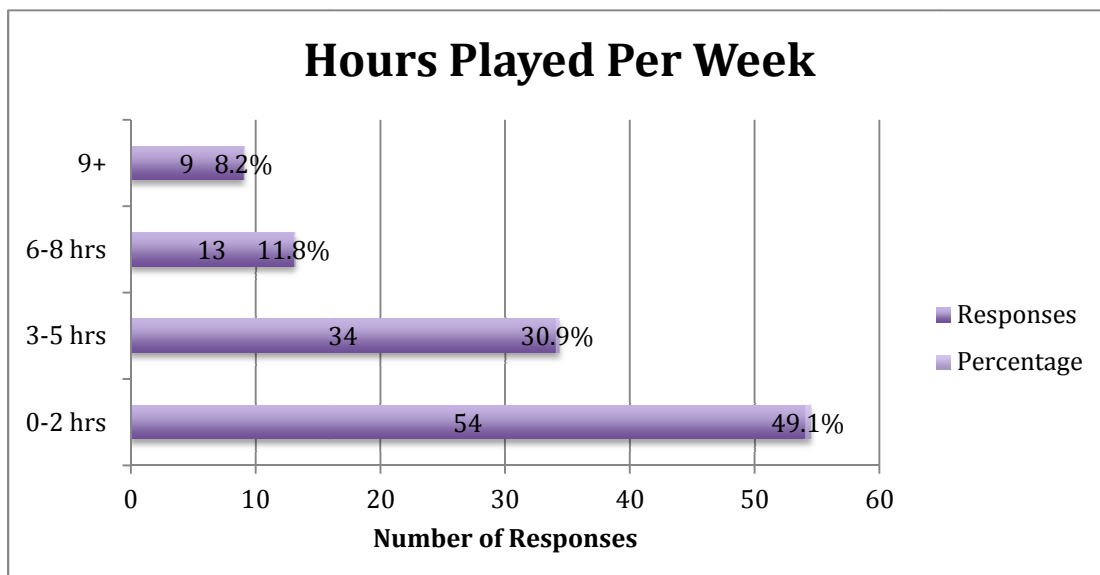
or

tablets. The traditional console comes in second at 39.4%, and computers at 16.5%, while handhelds represent a distant fourth.

3. How many hours a week do you play video games?



The results show, 49.1% of responders spent 0-2 hours playing video games per week. The number of hours played per week decreases incrementally from 3-5 hours at 30.9% all the way to 20% from 6 hours and up. Overall, 80% of the participants played less than five hours of video games per week.



Genre	Responses	Percentage
Action (Shooter, Party, Combat, etc.)	11	10.1%
Strategy (Tower defense, Empire Building, Cards, etc.)	30	27.5%
Sports (Football, Soccer, Hockey, Racing, Golf, etc.)	30	27.5%
Role Playing Games (RPGs) (Action RPGs, Western RPGs, etc.)	6	5.5%
Other (Adventure, Action Adventure, Music Game, etc.)	32	29.4%

4. What is your most played genre?

Answer Choices
▼ Action (Shooter, Party, Combat, etc)
▼ Strategy (Tower defense, Empire Building, Cards, etc)
▼ Sports (Football, Soccer, Hockey, Racing, Golf, etc)
▼ Role Playing Games (RPGs) (Action RPGs, Western RPGs, etc)
▼ Other (Adventure, Action Adventure, Music Game, etc)
Total

One of the key variables isolated in this paper is genre. Many studies have neglected to branch outside of the subcategory of first- and third-person shooters, so having a question on the habits of the participants along with supplemental questions will reveal the impact genre has on sparking violence and aggression.

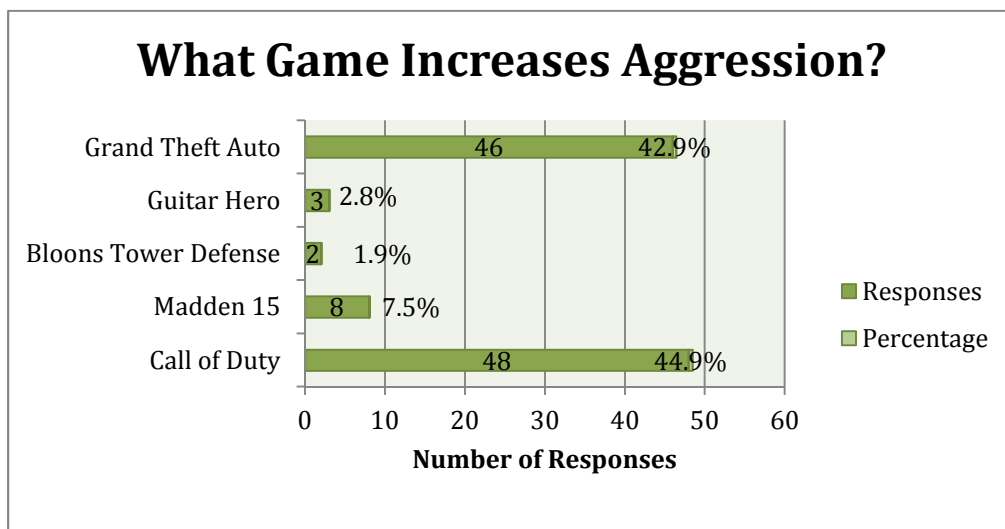
Survey 1 showed that the top genre was the other category, which garnered 29.4% of the total responses. The other category is comprised of multiple genres such as music, party, and casual games. For the purpose of this study, the adventure and music genres have also been placed into the other category to give the best representation of the major game genres. The next highest rated genres were strategy and sports, each at 27.5%. Action was the fourth most played genre at

10.1%. RPGs were the least played genre, with 5.5% of the total. Examples of RPG games are *The Legend of Zelda* and the *Fallout* series.

5. Which of the following games do you believe leads to the most aggression? In short, which of the following games makes people feel most angry, violent, or hostile?

Answer Choices	
▼	Call of Duty
▼	Madden 15
▼	Bloons Tower Defense
▼	Guitar Hero
▼	Grand Theft Auto
Total	

Call of Duty was the game that the participants thought would increase aggression the most. *Call of Duty* garnered 44.9% of the responses, and *Grand Theft Auto* followed closely behind at 42.9%. These two game titles represent the most scrutinized subgenres of the action category, and the statistics support that claim. Overall, 87.8 % of the survey participants believed that *Call of Duty* or *Grand Theft*



Auto
cause
the
biggest

increase in aggression.

Madden 15 from the

sports genre was a distant

at 7.5%. *Guitar Hero* of

Genre	Responses	Percentage
<i>Call of Duty</i>	48	44.9%
<i>Madden 15</i>	8	7.5%
<i>Bloons Tower Defense</i>	2	1.9%
<i>Guitar Hero</i>	3	2.8%
<i>Grand Theft Auto</i>	46	42.9%

third

the

music genre had 2.8% of the vote, and *Bloons Tower Defense* of the strategy genre

was last with 1.9%. It must be noted that the question asked for the participants to

pick a game title that leads to the most aggression, and not which game makes them

feel the most aggressive. Therefore the participants were most likely voting based

on how they think others might respond to a particular video game based on the

participants own experience, and how the participants predict others might respond

to their own experience.

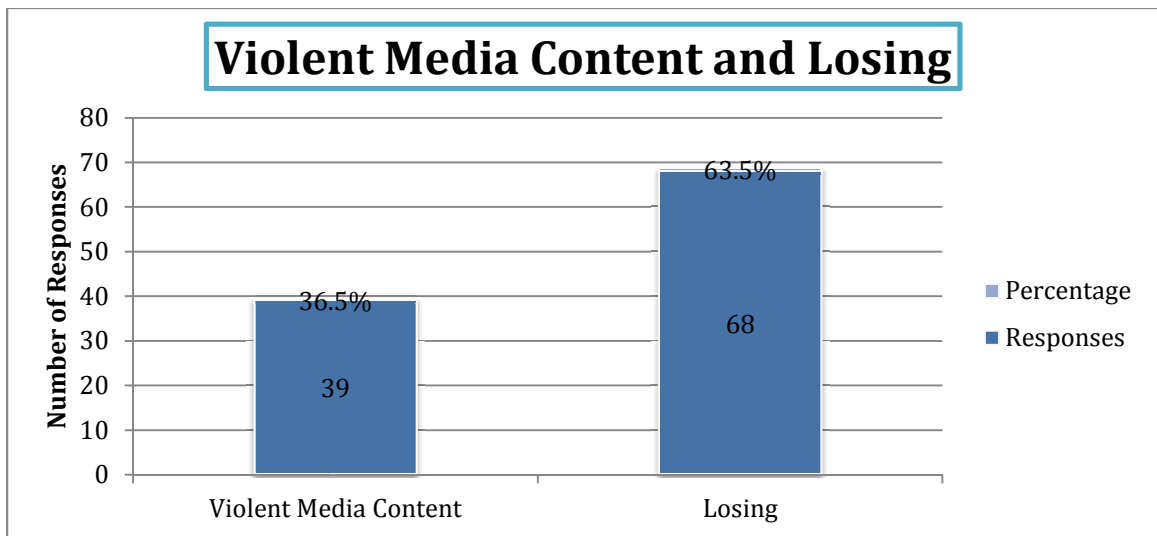
6. *What makes you feel most frustrated: violent media content or losing?*

Answer Choices
<input type="checkbox"/> Violent media content
<input checked="" type="checkbox"/> Losing
Total

The results of question six showed that roughly two thirds of responders believe that losing is a more significant factor in escalating frustration. This statistic is significant because frustration is often a precursor of aggression, meaning the more frustrated an individual is, the more likely they are to aggressively. A confidence level (Z_c) of 95% was used to test the confidence interval for the

	Responses	Percentage	
Violent Media Content	39	36.5%	46
Losing	68	63.5%	

population proportion. The equation to calculate the error is $\sqrt{.64)(.36)/107} = .09$. After subtracting and adding the .09 error from the p value, the confidence interval came out to .55 . Therefore, it can be claimed that with 95% certainty, if every person were to be surveyed between 55%-73% would agree that losing is a more significant factor in increasing aggressive behavior than violent content. The confidence interval reveals that a majority of people believe losing to be a greater risk factor.



7. *What do you communicate to non-gamers when discussing video games that you play?*

The purpose of this question was to simply understand how gamers spoke about their gaming habits to those lacking experience. Addressing questions such as what and how they communicated, if they spoke about video games at all, is important to

understand the interactions between gamers and non-gamers. The most common answer and other noteworthy responses are as follows.

A majority of responses were “nothing” or something comparable to this statement. Some comments went further into detail as to why so many gamers neglect to speak to non-gamers about their electronic experiences. A few responses claimed that speaking of video games to a non-gamer would only bring judgment on the part of the gamer due to the perception that video games are a waste of time. Many of the responders believed that non-gamers view video games as an unproductive use of time, as opposed to productive activities such as reading, exercising, and studying.

Another popular comment was about the positive effects gamers perceive to gain from playing video games. Some participants reported that video games reduced their stress levels, while others believed that gaming helped to rejuvenate their minds. The consensus from those subscribing to this line of reasoning, consider video games a tool to relax and blow off proverbial steam. While there were quite a few of these responses, another consistent answer kept popping up.

Many of the participants who classified themselves as gamers wrote something about communicating their record, stats, or a particular win to others. Saving face is the idea that people actively attempt to uphold their position in society as a way to maintain their self-image (Face). Maintaining a certain aura or prestige is imperative to many people of various professions, an idea that also happens to translate over to video games. While some people might use video games to relax, others play video games to compete. They play video games to climb

the rankings, to win money, or to make it to the Major League Gaming (MLG) pro circuit. To these individuals, video games are not just a form of entertainment, they are sports that represent their livelihood. It might seem unbelievable to refer to video games as a sport, but when competitive nature kicks in the prospect of winning and losing is very real. Losing as a risk factor for aggression, meaning that a video game of any genre requiring competition against another human or computer-controlled opponent, can ultimately lead to an increase of aggression.

8. Would you be angrier when you are killed in a shooting game, or when you lose in an online sports match?

One thing is for certain:
nobody likes to lose, and the

	Responses	Total Percentage
Shooting Game	42	38.2%
Sports Game	68	61.8%

responders agreed. Nearly two thirds—61.8%— of the participants admitted to feeling angrier after losing a sports game. The 38.2% for the shooting game is most likely high, considering that it is unknown whether the anger is stemming from the violent content of the game or the frustration of being killed and losing the round. The confidence level for conducting the population proportion of the confidence interval was 95% (Z_c) or 1.96. The error is $1.96\sqrt{(.615)(.385)/109} = .0054$. After adding and subtracting the error (.0054) from the p value (.615) the confidence interval came out to $.6096 \leq \square \leq .6204$. Calculating this statistic is important because it takes a relatively small sample size and shows what the confidence interval would be had every person taken the survey. It can be stated with 95%

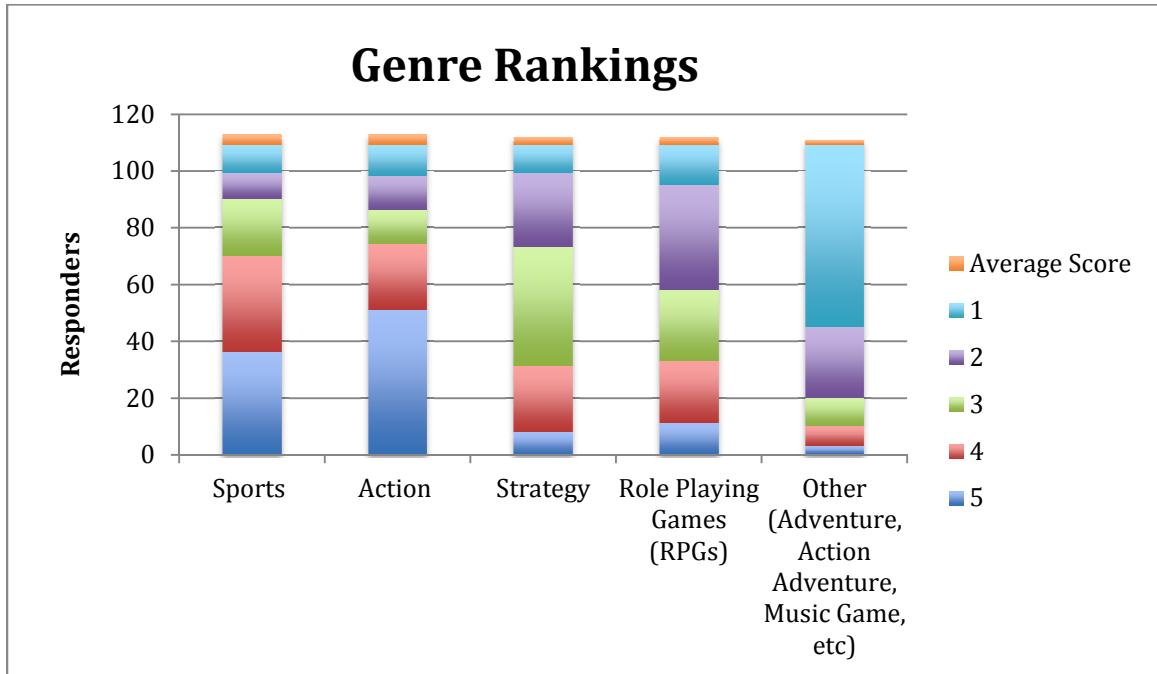
confidence that if everyone were to be surveyed the true number of those who agree that sports games lead to the most anger would fall within the confidence interval.

9. Rank the following genres in order of what you believe leads to the most aggression (5 being most aggressive, 1 being least aggressive).

For clarification of the results of this question, please note that each responder’s ranking of each genre accumulates with the rankings of all the other responders. For example, if one person ranked Strategy as a 5, the strategy genre will have a score of five added to its total. If another responder ranked strategy as a 2, then 2 will be

	5	4	3	2	1	Average Score
Sports	36	34	20	9	10	3.71
Action	51	23	12	12	11	3.83
Strategy	8	23	42	26	10	2.94
Role Playing Games (RPGs)	11	22	25	37	14	2.81
Other (Adventure, Action Adventure, Music Game, etc.)	3	7	10	25	64	1.76

added to the total score and so on. This scoring system occurs with the other four genres as well. The results show that action was perceived as the most anger-inducing genre, with an average rating of 3.83 out of 5. As the chart clearly illustrates, sports was a close second to action, receiving a 3.71 out 5, a mere .12 behind action. Strategy and role-playing games received scores of 2.94 and 2.81, respectively. The Other category was a distant fifth, with an average score of 1.76 out of 5. The importance of the results from this question lies in the fact that there are a number of unstudied genres in the video game market. It would be unfounded to simply jump to the conclusion that the subgenres of first- and third-person shooters in the action genre are the root of all evil.



10. Violent video games correlate with aggression. On a scale of 1 to 5 (5 being strongly agree, 1 being strongly disagrees), how do you respond to this statement?

As the chart shows, over half of the participants do believe there is a correlation between violent video games and aggression. Losing obviously also factors into the correlation with aggression, as discussed in the analysis of previous sections.

Further graphical and quantitative results are below.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Total Responses	10	17	27	41	15
Percentage	9.1%	15.5%	24.5%	37.3	13.6

Chapter 4: Survey 2 Results

Method

This second survey was conducted to look specifically at the self-reported feelings of frustration as a precursor to anger, among violent and non-violent gamers. The violent game described in this survey is a traditional first-person shooter, similar to *Call of Duty*, while the non-violent description is similar to *Madden 15*, *NHL 15*, and *Fifa 15* of the sports genre. In short, the comparison is between M rated shooter games, and E/T rated sports games. By grouping survey participants into the non-violent and violent categories, it is possible to gauge the impact genre has on frustration and aggression, by understanding the self-reported behaviors of the participants who either prefer, or do not prefer, violent video games. Please note that the 50 participants who took survey 2 were selected from the 110 participants who took survey 1.

Questions

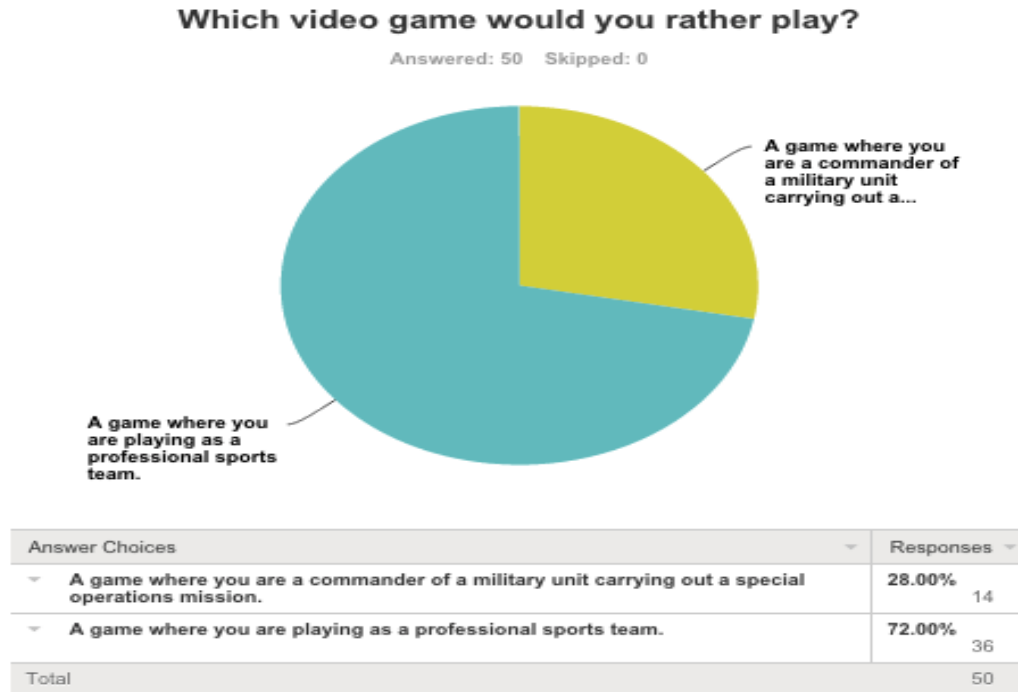
The survey was made up of six questions, and 50 participants took this survey. The analysis of the survey is below.

1. Which game would you rather play?

- A game where you are a commander of a military unit carrying out a special operations mission*
- Or a game where you are playing as a professional sports team*

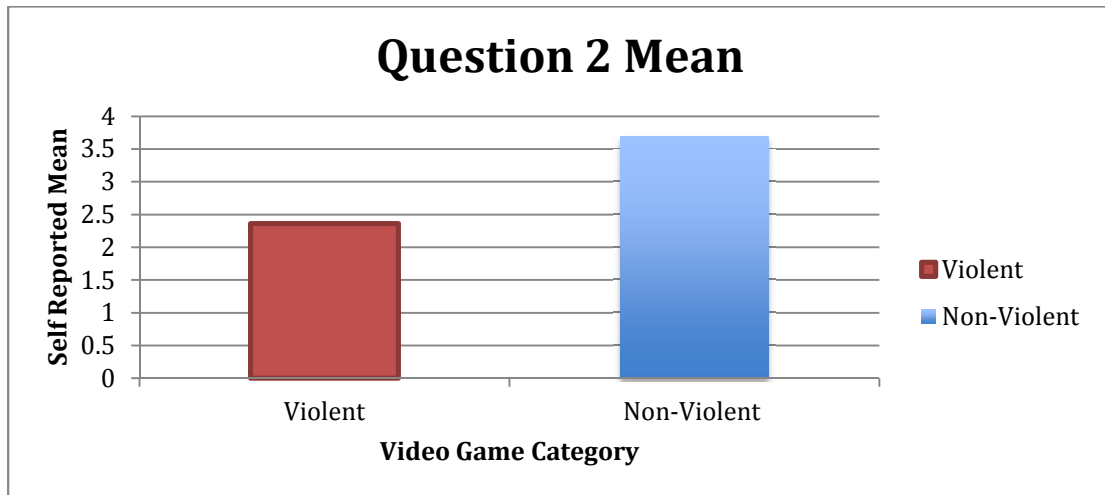
There were 14 responders who preferred the military warfare game (violent group), and 36 who preferred the sports game (non-violent group). Out of the 50

responders, 72% would rather play a non-violent sports game, while the other 28% would rather play a violent shooter game. While these results do not tell us much from the outset, it does illustrate the fact that violent shooters (action genre) are not as popular as sports games, according to the responses.



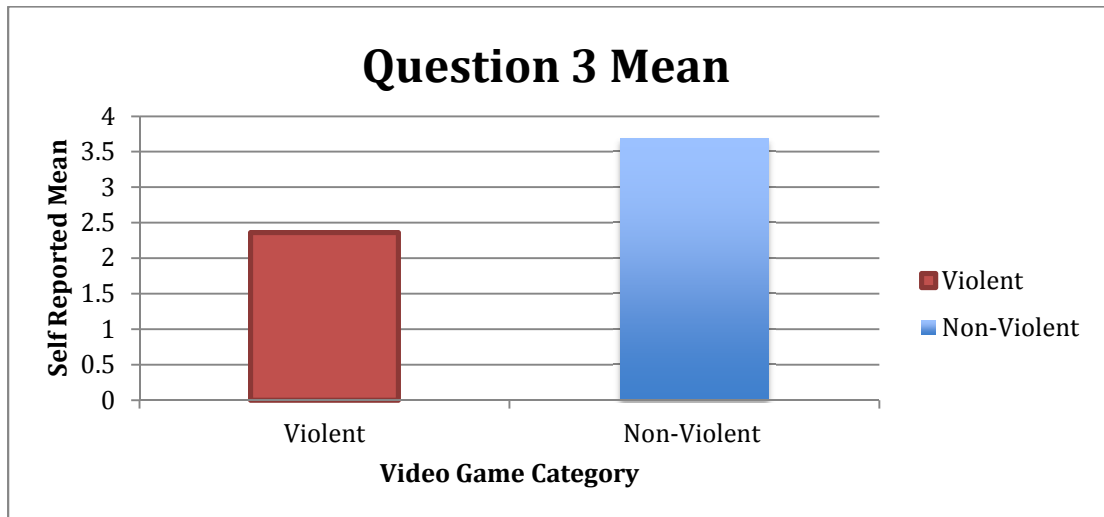
Question 2. On a scale of 1-10, how frustrated would you feel if someone were to cut you off in traffic? (1 being not frustrated at all, 10 being extremely frustrated)

The violent video game group had a mean score of 6.00, with a modal value of 5. The non-violent video game group had a mean score of 6.72, with a modal value of 8. The results show that the group who preferred the non-violent sports games reported a frustration score .72 greater than the group who preferred the violent shooter games. In short, non-violent gamers are more frustrated on the roadway.



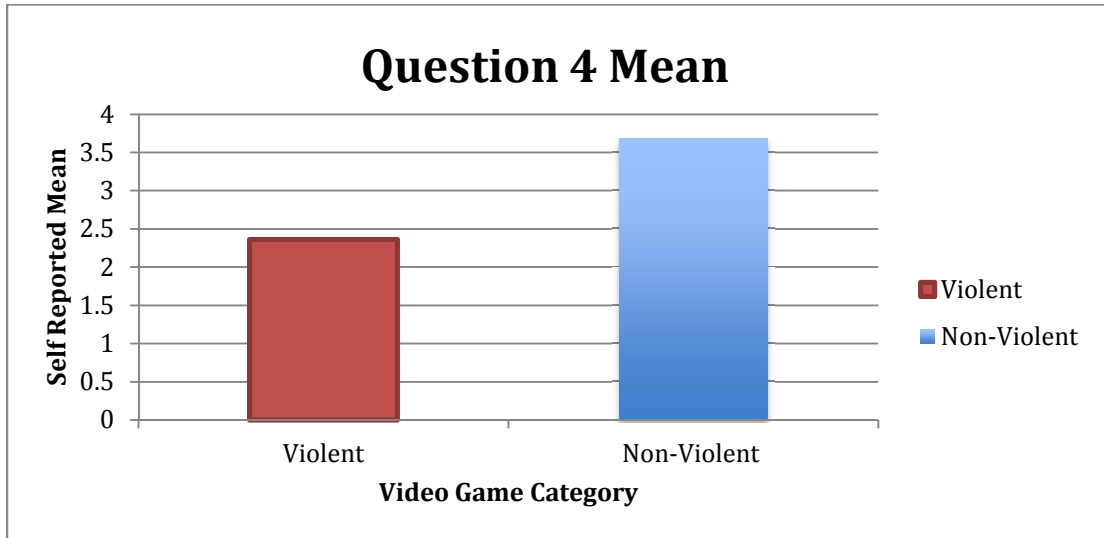
Question 3 On a scale of 1-10, how frustrated would you feel if your favorite sports team lost ? (1 being not frustrated at all, 10 being extremely frustrated)

This question asks how frustrated the participants would be—as opposed to violent or aggressive— if their favorite sports team lost a game. The violent video game group had a mean score of 3.71, with a modal value of 3. The non-violent group had a mean score of 5.81, with a modal value of 7. For this question, non-violent gamers produced a score 2.1 greater than the violent group, showing that they are more frustrated after a loss than violent gamers. It is interesting that the group that prefers playing sports video games, feels more frustrated passively watching their favored sports team lose, than the violent video game group who self-reported little frustration in this scenario.



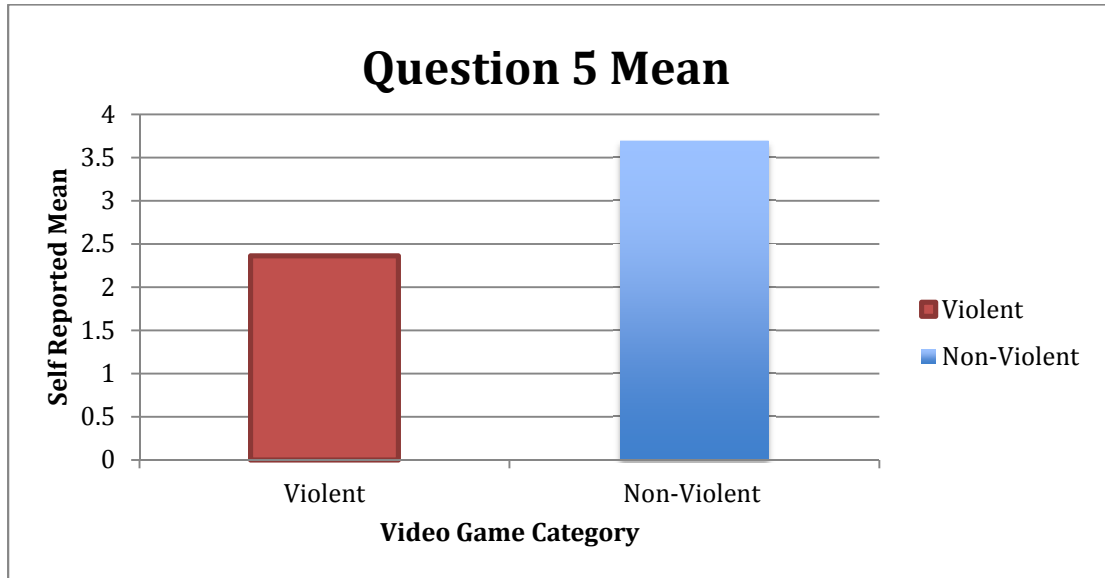
Question 4 On a scale of 1-10, how frustrated would you feel if you lost in a non-violent competition? (1 being not frustrated at all, 10 being extremely frustrated)

This question is similar to the previous question, but with one distinct difference. Instead of asking how frustrated the participants felt passively watching their favorite sports team lose, this question asks how frustrated they would feel if they were the one who lost. Testing the difference in frustration between active and passive activities is crucial to examine which has the greater effect on human behavior. The violent video game group had a mean score of 5.14, with a modal value of 4. The non-violent group had a mean score of 5.72, with a modal value of 5. Between the two groups, non-violent video gamers continued the trend of having a higher self-reported frustration level. As the results show, non-violent video game participants reported a frustration score .58 greater than violent video game participants.



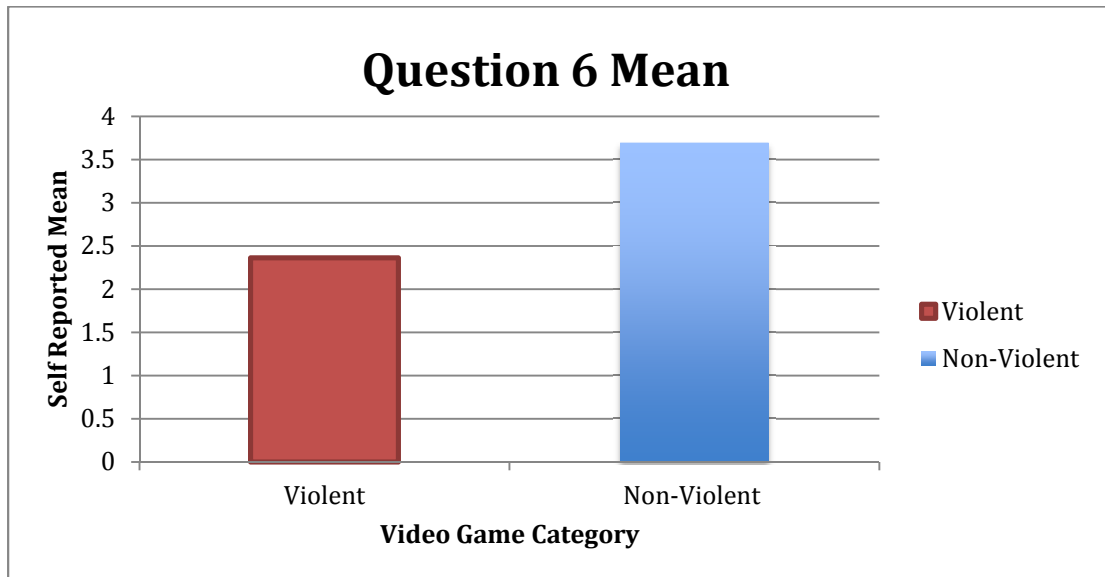
Question 5. On a scale of 1-10, how angry would you be if you witnessed a violent act in person? (1 being not angry at all, 10 being extremely angry)

Notice that this question asks how angry the participants would be, and not how frustrated they would be. Witnessing a violent act in person would most likely illicit anger on behalf on the audience, not frustration, because those witnessing the act would have the opportunity to physically intervene. The responses to this question received a strong reaction from both violent and non-violent video gamers. Violent video gamers scored a mean score of 8.50, with a modal value of 7 and 10. Non-violent gamers had a mean of 8.75, with a modal value of 10. Both groups had an almost equally strong spike in anger, if they witnessed a violent act in person.



Question 6. On a scale of 1-10, how angry would you be if you witnessed a violent act in a video game? (1 being not angry at all, 10 being extremely angry)

Violent video gamers had a mean value of 2.36, with a modal value of 3. Non-violent gamers had a mean value of 3.69, with modal values of 1 and 2. Overall, non-violent video gamers had an anger score 1.33 greater than violent gamers. The cause of the deviation could be for a number of reasons. Scholars that believe violent video games correlate with violence and aggression would argue that violent video games “desensitize” the gamer to violence, therefore making them less prone to becoming angry when they witness a violent act in a video game. If violent video games truly desensitize gamers to video game violence, it would explain why non-violent gamers would become angrier when witnessing a violent act in a video game than those who are accustomed to video game violence. Due to fact that both violent and non-violent gamers felt extremely angry witnessing a violent act in person, it appears that video games have not desensitized gamers to instances of real world violence.



Survey 1 & 2 Discussion

Understanding the differences between non-violent and violent gamers' self-reported frustration and anger is crucial to understand how genre can impact the behavior of a gamer. Survey 2 showed that the sports genre was preferred over the shooter sub category of the action genre by a 46% margin. The results were conclusive. Gamers who prefer playing games in the sports genre have greater feelings of frustration and anger while playing the video game, and while interacting with society, than gamers who play shooter games within the action genre. This contradicts the results of question 5 of survey 1—which asked the participant which video game title they thought was more prevalent in increasing aggression—because the participants of survey 1 believed that first and third person shooters had the greatest impact on aggression. This discrepancy can be attributed to the design of survey 1, which asked the participants questions based on their beliefs, and not based on personal experience, which survey 2 asked. Question 8 of survey 1

backed the findings of the survey 2, showing that 61.8% of gamers would be angrier if they lost in a sports video game, than if they were to die in a shooter video game. Therefore gamers and non-gamers appear to believe that first and third person shooters have a greater correlation with frustration, aggression, and violence, but as survey 2 and question 8 of survey 1 reveals, it appears that non-violent activities and non-violent video games actually have a greater correlation with frustration and aggression than violent activities and violent video games have. While violent video games certainly evoke self-reported feelings of frustration and anger, it appears that non-violent games have a greater impact on the behavior of gamers, despite the beliefs of media consumers, mass media, and politicians.

The results from survey 1 and 2 illustrate two distinct points. Firstly, there are more gamers who prefer non-violent games than those who prefer violent games. Secondly, gamers who prefer the sports genre have greater feelings of frustration and anger, than those who prefer M rated games within the shooter sub category. As question 6 of the first survey showed, the participant's admitted to being more frustrated over a loss, than if they were to experience violent media content. Therefore, genre—specifically non-violent rated games—is a relevant factor when considering the impact video games have on frustration and aggressive behaviors of gamers. Obviously frustration and anger does not always lead to aggression and violence. But understanding that non-violent gamers have greater feelings of frustration and anger means that the potential for aggression and violence is also greater. In addition, as question 4 of survey 1 showed, the Action genre, which is comprised of first and third person shooters, only accounted for

10.1% of the participants most played genre. This means that roughly 90% of the participant's based their responses off of their beliefs of the effects of shooters, and not from any personal experience with the first and third person sub categories, experience in which they most likely lack altogether.

Chapter 5: Discussion and Future Studies

So what does all this mean? The discussion between Groups A and B has escalated in recent years and only looks to increase in volatility. Group A continues to claim that violent video games cause violence and are corrupting anyone who plays first and third person shooters. This theory has been forced on news consumers and society by the media and politicians condemning the use of violent video games. Group A has focused solely on shooter games, but to truly understand the impact of their results similar studies must be conducted utilizing game titles of different genres. Their procedure has consistently drawn on results from the same subgenres of first-and-third-person shooters, without the foresight necessary to study other genres that could disprove their claims. Without branching out and studying other non-violent games and genres, their argument will continue to be hindered by one-dimensional results. Results from these anti-video game studies have also failed to control for losing. Dr. Anderson's belief that violent video games cause aggression is obviously premature given the limited scope of his genre usage. As survey 1 from this study shows, 63.5% of people believe that losing is a more important factor than violence in any account of aggression levels; indeed, 61.5 % would be angrier after losing a video game than after dying in a violent video game. The results from survey 1 and 2 must be taken with a grain of salt for two reasons. The first reason is that each responder self reported their answers. The fault with self-reporting is that the participants could have either misunderstood a question or could have possibly been unaware as to what constitutes frustration, aggression,

and violence. The second shortcoming of the survey results is that the participants could have responded based on how they thought others might respond. Despite the flaws of survey research, the corresponding statistics aid in showing the major shortcomings of Group A.

Group B's main argument is that violent video games do not cause aggression and violent behavior. The evidence supporting their claim is that violent crimes decreased inversely with a rise of violent video game sales. This is an interesting point but it is still flawed. Aggression and violence are not limited to the most serious forms like murder, rape, and assault, like Group B has claimed. If it looks aggressive it probably is aggression. If it looks violent it probably is violent (please refer to Chapter 4 for definitions of these terms). It would be very difficult for Group B to account for mild occurrences of aggression and violence, but it is obvious that referring to the most extreme cases of violence is not enough to state that violent video games don't have a negative impact on gamers. As the results from survey 2 show, both violent and non-violent gamers self-reported feelings of anger and frustration within the video game and in the real world. Although non-violent gamers have more intense feelings of frustration, violent games also evoke the same emotions to a lesser degree. Scholars such as Ferguson, Markey, and Ward have made a valiant effort to defend the integrity of the video game industry, especially because their stance is unpopular compared to the majority of mainstream opinion. I agree with Group B's thinking that violent video games are a convenient scapegoat, just as comic books were in the 1950's. However, I disagree with their belief that

video games have no effect on gamers because it is clear that losing in any genre is a trigger of aggression.

The most important future area of study is within the genre variable. It is known that losing is a potential trigger of frustration, but to fully understand the impact of video games, genres other than action must be studied. Studying the possible effects of video game exposure on non-traditional gaming systems— smart phones and tablets—is another future area of exploration that will examine the evolving gamer population. So far, studies have only included traditional gaming units like consoles and computers. To cope with the technological leap, it is imperative to study the effects of video games on phone and tablet gamers, who comprised 41.3% of survey participants, to understand if the platform plays a part in altering the behavior of gamers.

In order to conclusively determine that video games cause aggression, a longitudinal study that examines participants playing a variety of genres must be conducted, while the conductors of the experiment follow the lives of the participants to see how they interact in society. Until then, the academic community will continue to evaluate the effects of violent and non-violent media. Despite the literature existing in a state of limbo, one thing is for certain, no one likes to lose. Realizing the previous statement to be true only emphasizes this paper's argument that non-violent video games are just as prevalent—if not more—in altering a gamer's frustration and aggression levels. This is not to say that violent video games have no impact on frustration or any precursor of it, but only that the academic community would be well served to study primarily non-violent video game genres.

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