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A call to violence: Trends in violent content of video games

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A Call to Violence:
Trends in Violent Content of Video Games

A Project Presented to
the Faculty of the Undergraduate
College of Arts and Letters
James Madison University

in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Science

by Emily Molly Keller

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Accepted by the faculty of the Department of Justice Studies, James Madison University, in partial fulfillment of the requirements for the Degree of Bachelor of Science.

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Abstract

Violent content in video games has come under increasing scrutiny as the media highlights the potential involvement of violent games in deadly crimes. In addition, internet gaming disorder has been identified as a subject in need of further research in the *DSM-V*. The current study investigates whether year, genre, platform type, and victim and perpetrator identity influence the total amount of violent actions in 280 video game trailers. The hypothesis was that year, genre, and platform type would produce the most variance in total violence, but victim identity and perpetrator identity were significantly more influential. Thus, there is a tendency for the presence of certain types of perpetrators and victims in game trailers to be associated with higher counts of violent instances. Research implications are discussed, including the suggestion that future studies should measure the intensity of violent actions and sexuality in video game trailers and limitations stemming from lack of inter-rater reliability, overlap of genre categories, and the nature of trailer content.

Keywords: video game addiction, internet gaming disorder, violence, video game trailers

Introduction

On April 20, 1999, Eric Harris and Dylan Klebold killed 13 people in Columbine High School in an armed rampage after playing the video game *Doom* (Ward, 2001). Four years later, William and Joshua Buckner shot at vehicles on Interstate 40 in Tennessee on June 25, killing one person and wounding another after allegedly practicing what they had learned in the video game *Grand Theft Auto* (“GTA under Fire,” 2004). More recently, on July 22, 2011, Anders Behring Breivik killed 77 people and injured hundreds during the 2011 Norway attacks and revealed that he had trained for the massacre with *Call of Duty: Modern Warfare 2* (Pidd, 2012). Video games, such as *Call of Duty: Black Ops 2*, have also been linked to the Sandy Hook shooting on December 14, 2012 committed by Adam Lanza (Sandoval, Friendman, & Hutchinson, 2013). These brutal crimes and many more have been connected to violent video game play in the popular media and have in some cases sparked attention from government leaders.

However, it is difficult to prove that video games are truly at fault for the violent actions of a handful of its players. What influences these violent perpetrators to commit real-life violence? Could it be some segment of personality? A mental illness? Or maybe the answer lies in the content of the games themselves? What is it about such games as *Call of Duty* and *Grand Theft Auto* that make them so popular for media fodder when players turn virtual violence into reality? The following review will elaborate on these and other factors that often enter the dialogue of violent video game discussions in both academia and popular culture.

Literature Review

Since their introduction in 1972, video game mediums have spread from coin-operated machines to computers, consoles connected to television sets, and finally to handheld devices, such as smartphones (“The Henry J. Kaiser Family Foundation,” 2002). According to the 2012 report by the Entertainment Software Association (ESA), 49% of households in the United States owned a game console as of the end of 2012, and on average these households owned at least two consoles. Thus, video games are a prominent part of everyday life for many Americans and have the potential to infiltrate key aspects of existence, such as relationships, school, and occupation. With this popularity comes controversy, especially in the form of arguments centering upon the violent content of bestselling video games, such as the *Grand Theft Auto* and *Call of Duty* franchises. Media coverage often focuses on players of these games who act out game plots in real life, including the perpetrators of the tragic school shootings at Columbine and Sandy Hook. However, there are potential positive aspects that accompany video game playing, including educational attributes. There is also some debate as to whether the purported negatives that are said to accompany the playing of video games, such as aggression, actually exist in both laboratory settings and real life. In order to address these issues, this review will examine the breadth of literature on video game playing to date.

Game Consumers

The media often promote the stereotypical image of a typical gamer as male, and as either an adolescent boy or adult male still living in his parents’ basement. This portrayal can contribute to the rejection of the gamer identity by some players uneasy with being associated with what could be seen as a juvenile and unimportant practice (Shaw, 2011). Despite this

rejection by some players, the reality is that many people do play video games, some more than others, and the demographic realities can be quite different depending on certain factors.

According to the ESA (2012), the average video game player is thirty years old, with 37% at least 36 years of age, 31% between the ages of 18 and 35, and 32% under 18. The ESA (2012) also reports that 53% of players are male and 47% female, which contrasts with common perceptions and media portrayals. However, these figures reflect general video game play. Lemmens, Valkenburg, and Peter (2011) asserted that pathological play with computer or video games was mostly restricted to the adolescent boys in their study, indicating that males in general may be more susceptible to excessive playing that interferes with everyday life. The researchers also found that adolescent girls were less likely to play violent games and even those girls who did play games with a violent focus spent much less time on them than boys.

In terms of violent game preferences, Bijvank, Konijn, and Bushman (2012) found that the boys with the lowest educational levels favored violent games, identified more with the characters in the games they played, and perceived video games as more realistic than boys with higher levels of educational ability. Also, men were more likely to play first person shooter games, whereas the preferences of women lay more in exercise games (Coyne, Busby, Bushman, Gentile, Ridge, & Stockdale, 2012). Further, the boys in a study conducted by Coyne, Padilla-Walker, Stockdale, and Day (2011) selected more violent games, tended to play more video games in general than girls, and spent the time playing in isolation rather than with a co-player. At the same time, Desai, Krishnan-Sarin, Cavallo, and Potenza (2010) found that even though male gamers are at a higher risk for developing a problem with controlling their gaming habits, and also may find gaming more appealing in general, the overall risk of forming a gaming problem is fairly low.

Personality Factors and Motivations.

There are many motivators that contribute to the attraction of video games for males and females, including the factors that Bijvank et al. (2012) examined: social-interaction, competition, fantasy-escape, fantasy-arousal, unwind, challenge, and diversion. In terms of boys with low educational levels versus those with higher levels, the motivations of fantasy, arousal, challenge, and unwind were the most significant and were strongest for those in the lowest educational ability group. Chory and Goodboy (2011) further elucidated on these points by detailing that arousal plays on desires to stimulate emotions, challenge means pushing and testing oneself, competition indicates an aspiration to dominate, diversion functions as a way to escape from stress, fantasy reflects a desire to assume alternate identities, and social interaction provides players with an opportunity to socialize with others (p. 192). Many of these motivations are reflected through personality traits that are prominent in gamers.

Personality factors appear to influence what types of games players prefer. The personality model commonly used by researchers is the five-factor personality model, which includes extroversion, neuroticism, agreeableness, conscientiousness and openness to experience (Costa & McCrae, 2008). Selected facets for each factor include: neuroticism is comprised of “anxiety” and “depression,” extroversion “warmth” and “gregariousness,” openness “fantasy” and “aesthetics,” agreeableness “trust” and “straightforwardness,” and conscientiousness “competence” and “order” (Revised NEO, 2000, p. 3). According to Chory and Goodboy (2011), extroverted persons play violent video games more frequently and exhibit a stronger preference for these violent games, which may be reflected in the increasing popularity of multiplayer games. In addition, these researchers found that an individual displaying traits of lesser

agreeableness also preferred multiplayer games, as did individuals lower in neuroticism and more open to experiences.

Dunn and Guadagno (2012) found that personality factors are also reflected in the attributes of the avatars that are often created by players. The researchers discovered that introverts preferred creating more attractive avatars than extroverts and that highly neurotic women fashioned more attractive avatars relative to their actual appearances, while highly neurotic men created less attractive avatars in comparison to their own appearances. In addition, people with high levels of either openness to experience or conscientiousness created avatars that more resembled themselves. High agreeableness in participants was typically associated with large chest sizes for men and small chest sizes for women. Another trait, sensation seeking, can increase the likelihood that children play games, specifically role-playing games (RPGs) and massively multiplayer online role-playing games (MMORPGs) and, for boys, both fighting games and games that involve the use of weapons. Thus, personality factors are key determinants in what types of games people play and the appearances of the characters they select.

Psychopathology

Psychological problems that appear in conjunction with video game addiction according to the literature are attention concerns, depression, and suicidal ideations. Although video game addiction does not necessarily cause these behavior issues, there could very well be bi-directional causality. People with these attention difficulties, depression, or suicidal inclinations may be more likely to play video games.

Definition of Pathological Gaming.

Although the DSM-IV-TR did not recognize pathological gaming as a clinical disorder, internet gaming disorder has been included in the appendix of DSM-V as a concept in need of

further study (Hodson, 2013). According to Lemmens, Valkenburg, and Peter (2009), the difference between mere excessive gaming and pathological gaming lies in an inability to control use despite social or emotional problems in the latter. Thus, using the DSM-IV-TR definition, the researchers define pathological gaming as “the persistent and recurrent inability to control excessive gaming habits despite associated social and/or emotional problems” (p. 38). This definition has allowed researchers to identify differences between gamers who play games recreationally, excessively, and pathologically.

As mentioned before, the recent publication of the DSM-V has produced changes in identifying a variety of disorders and has highlighted internet gaming disorder as a condition in need of further research before official classification (American Psychiatric Association, 2013). Involvement in internet gaming disorder indicates that an individual is playing compulsively, to the extent that clinically significant impairment or distress occurs as other interests are neglected. Withdrawal symptoms also often take place upon the cessation of playing. The DSM-V reveals that there may be effects to the brain pathways akin to biological effects on drug addicts, meaning that internet gaming disorder could potentially be classified as an addictive behavior.

Attention.

Ferguson (2011) found that television and video game use did not predict attention problems and that other factors, such as being male, belonging to a disturbed family environment, and displaying symptoms of anxiety were better contributors toward difficulties with paying attention. However, according to Gentile, Swing, Lim, and Khoo (2012), there are four possible explanations for the potential relationship between electronic media, such as video game playing, and greater attention problems: the excitement hypothesis, the displacement hypothesis, the attraction hypothesis, and the third variable hypothesis. The excitement

hypothesis predicts that contact with electronic media, such as video games, makes other pursuits seem less interesting in comparison. Another idea, the displacement hypothesis, states that spending time playing video games may weaken a person's self-control by displacing other activities that could have been used to control impulses. The attraction hypothesis asserts that people who have attention problems could be more attracted to electronic media, such as video games. Finally, a third unnamed variable could actually explain the association.

Over the course of their study, Gentile et al. (2012) found evidence in support of the displacement and attraction hypotheses, as well as for bidirectional causality between greater impulsiveness and playing video games and attention problems and video game playing. Coyne et al. (2012) also found that in conflicts about video games between couples, it is the time spent playing games that is a key source of strife, which supports the displacement hypothesis.

Although there are some mixed results in whether video games are a major contributor to attention problems, there does appear to be some sort of association between the two variables.

Depression.

Video game playing may also be related to depression according to some researchers. Mentzoni (2011) found that problematic playing of video games was connected with higher levels of depression and lower scores on measures of life satisfaction. Li, Liao, and Khoo (2011) asserted that gamers who held high levels of discrepancy between the person they wanted to be, or ideal self, and the person that they were, actual self, which can be shortened to "actual-ideal self discrepancy (AISD)" (p. 535), along with elevated levels of depression, tended to favor higher levels of escapism. Further, these players were more likely to display symptoms of pathological gaming.

However, Valadez and Ferguson (2012) did not find any evidence that exposure to violent games in a laboratory setting had an effect on depression. In fact, their results suggested that playing any type of game relaxes players and can have the effect of decreasing negative mood states. Desai et al. (2010) found that gaming was actually associated with a lower risk for depression for girls. Accordingly, even though depression may not be caused by video gaming, pathological male players, for example, may be more likely to have depression, whereas this relationship appears to be the opposite when considering females.

Suicide.

The relationship between suicide and video game use exists on more of a continuum based on one study. According to Messias, Castro, Saini, Usman, and Peoples (2011), playing five or more hours of video games a day, which could be reaching pathological levels for some players, was associated with higher levels of reports concerning suicidal ideation and planning about committing suicide. However, the researchers also found a possible protective effect toward measured levels of sadness when the playing of video games was limited to one or two hours a day.

Violence and Aggression

Most often, research on video games focuses on the violent content of some games and how the effect of viewing this content can carry over into real life when the lines between the virtual world and reality are blurred. There is still much debate among researchers as to the existence of these negative effects and, if they do exist, the extent. In fact, in the United States Supreme Court case of *Brown v. Entertainment Merchants Association*, the Supreme Court held that “psychological studies purporting to show a connection between exposure to violent video games and harmful effects on children do not prove that such exposure causes minors to act

aggressively” (“Brown v EMA,” 2011, p. 2), indicating that current research is inconclusive due to the typically small associations between real life violence and video game playing.

Avatars.

One aspect that appears in many games is the creation of an avatar wherein players can customize their characters in order to make them close to their real life appearances or sometimes as different as possible. This process is especially popular in modern games where the new graphics capabilities allow increasingly complicated enhancements to one’s playable character, including all types of facial tweaks from tattoos to nose definition and body adaptations. Sometimes avatars may not even be human. Instead, one’s avatar may be an alien, elf, dwarf, or some other sort of creature. This more intense avatar creation could plausibly allow players to become more immersed in the game or to identify more strongly with their virtual character than their real life persona. In fact, Young and Whitty (2011) found that some players expressed a loss of perceived ability and prowess when separated from their virtual worlds and characters. This disparity can cause people to view the real world as holding the same rules as the virtual world, meaning that more extreme players may believe that they can affect states in reality through the same processes as they do in the virtual world.

Demonstrated Violence.

Although it is fairly difficult to measure the extent of actual violent acts in the laboratory setting due to restrictions on harm, some researchers offer tentative conclusions on whether violence in video games can translate to hostility in real life. One way that researchers measure propensity for violence is by calculating players’ opinions via recording judgments of criminal acts. For example, Fischer, Aydin, Kastenmüller, Frey, and Fischer (2012) found that being exposed to video games that reinforce delinquency increases both players’ acceptance for

violations of criminal laws and the likelihood of showing delinquent behavior in a subsequent laboratory theft situation. In another study by Lee, Peng, and Klein (2010), players who role-played as aggressive police officers committing violent virtual crimes subsequently displayed less punitive attitudes toward real life crimes that contained the same basic elements. In this study, the role of the players in the game had to match the crime they were judging. Another area in which violence is investigated by researchers is in family and relationships. As previously mentioned, time spent playing games and sometimes the content of the games can create friction and even aggression in couples (Coyne et al., 2012).

Content Promoting Aggression.

Although there are some mixed findings in the research field, some types of video games do appear to have an association with aggression, even if there must be some sort of interaction with another factor or if the effect is not very significant. It then becomes important to discover what specific elements of video games can trigger reactions in players, especially pathological gamers.

Violence in video games has already been discussed extensively in the sections above. Although other factors, such as family violence and personality, may play a greater role in real-life aggression, there does appear to be a link between the two variables, even if it is an indirect one. One of these factors is competitiveness. Adachi and Willoughby (2011a) found that regardless of whether a game was violent, competitiveness heightened aggressive behavior in the short-term throughout the course of their study. Somewhat in line with this argument, Wiloughby, Adachi, and Good (2011) proposed that non-significant results for a link between non-violent video games and aggression may be due in part to decreased competitiveness and the pace of the action in some of these games rather than lack of violent content.

In addition, the amount of time spent playing video games may have an effect on aggression in real-life, although, as Lemmens et al. (2011) point out, this effect only seems to exist in the playing of violent video games specifically. As mentioned before, time spent playing video games is especially instrumental in aggression between couples when the player is male (Coyne et al, 2012).

Controversy.

The data regarding the connection between violence and real life are mixed and the results are rife with conflict from both sides of the issue in the academic community. Some researchers argue that the fact that players typically control characters committing violence in video games makes gaming more dangerous than merely watching violent media on television. Others view video gaming as perhaps a factor but merely one additional aspect to a list of risks that can result in violence. Although video gaming, particularly violent video gaming, cannot easily be assessed in terms of causing aggression in real life, an abundance of research exists, which investigates an association between the two variables.

Theoretical Perspectives

Some theoretical models and perspectives have been put forth in an attempt to explain the correlation between violence and video game playing. The researchers who advocate the link usually subscribe to at least one of the major theories, which include the General Aggression Model, desensitization, and dehumanization.

General Aggression Model.

The General Aggression Model (GAM), developed by Anderson and Bushman in 2002, seems to be the most heavily cited theory in the literature concerning the link between video games and violence. This model, as described by Hasan, Bègue, and Bushman (2012), posits

that the inputs of person variables, which include “gender, genetic predispositions, personality traits, attitudes, beliefs, and values,” and situation variables, defined as “all external factors that can influence aggression” (p. 954), interact to control a person’s current internal state.

According to a description by Adachi and Willoughby (2011b), this internal state specifically includes “cognition (aggressive scripts or hostile thoughts), affect (anger or frustration), and arousal (elevated heart rate or blood pressure)” (p. 56), which can lead to either an impetuous or mediated action after appraisal.

According to Hasan et al. (2012), the cognitive resource within the GAM model that operates after playing violent video games is the hostile expectation bias, which is defined as an inclination to perceive others as possessing hostile intent. During the course of their study, they found that players of violent video games began to expect people to behave aggressively in the real world. This belief sparked a significant increase in the likelihood that these players would behave in a hostile manner to other people. Further support of the hostile expectation bias comes from Rothmund, Gollwitzer, and Klimmt (2011), who found that interaction with aggressive non-player characters (NPCs) in video games reduces cooperativeness in real life. This interaction was especially apparent when the players were victims of gaming violence because of enhanced fear of being exploited by others.

The GAM may also apply in the area of relationships. According to Coyne et al. (2012), as men spend more time playing video games, they end up arguing more with their partners about the use of their time, which is then related to physical and relational aggression in couples. Thus, playing violent video games excessively while in a relationship can increase physiological arousal and provoke angry emotions and thoughts as well as prime an impulsive and aggressive action.

Despite the findings of these studies, some researchers believe that it is challenging to find conclusive support for the GAM. According to Ferguson, Rueda, Cruz, Ferguson, Fritz, and Smith (2008), this difficulty is due to the methods employed by researchers. Momentary aggressive tendencies in the laboratory may not be reflected in any short-term or long-term changes in behavior that occur in an everyday setting. The researchers also point out that GAM does not consider genetic and biological factors that may influence behavior or other sources of exposure to aggression and hostility in the family aside from violent video games.

Desensitization.

Another theory that receives extensive attention with researchers investigating the effect of violent video games on real-life aggression is desensitization theory, which advances the view that people can become habituated to violent images in the area of media consumption.

Desensitization may take several forms, but researchers seem especially interested in how this concept affects empathy and concern for others. Concern may appear in views toward crime, which will be discussed later, and general empathic concern for others. Fraser et al. (2012) investigated the effects of violent video games on empathic concern during the time of emerging adulthood and found that violent video gaming poses a weak indirect effect on the level of prosocial behavior that males display toward strangers and to some extent towards friends and family members. Experiencing this lack of prosocial behavior and empathic concern during emerging adulthood may prevent these gamers from developing such attitudes for use later in life.

Other evidence in support of desensitization theory comes from examining the brain. In research by Engelhardt, Bartholow, Kerr, and Bushman (2011), “acute sensitization following game play was determined using the amplitude of the P300 (P3) component of event-related

brain potential (ERP) elicited by photons depicting real violence [...]” (p. 1034). In the study, a smaller P3 reaction to violence indicated lesser aversion to the violent displays. The researchers found that when an individual had little prior experience with video game violence, acute desensitization occurred, meaning the brain’s response to some visual representation of real-life violence was reduced. However, brain responses of those participants who had already experienced high exposure to violent video games through their own use indicated that they were already desensitized so that further exposure to video games produced no changes in their responses to real-life violence. Montag et al. (2012) also investigated brain responses and found that gamers displayed lower brain activation in the left lateral medial frontal lobe that controls the processing of negative emotions, which implies that gamers have habituated and are less likely to experience empathy.

Dehumanization.

A third theory that often comes into play in the academic discussion of violent video games is dehumanization, which involves reducing the humanness of antagonists. Across the course of two studies, Bastian, Jetten, and Radke (2012) found that dehumanization can occur during the play of certain video games; more specifically, people see themselves as less human after playing games containing superfluous violence, and this view extends to perceptions of opponents when another player is the target of violence. The researchers interpreted their findings as an indication that dehumanization can be triggered by being perpetrators as well as victims of violence during game play.

Additional Studies on Video Gaming

Despite these findings, evidence as to the effects of violent video games in encouraging aggression in real life is mixed. Some skeptical researchers have given the fervor over the

association between violent video games and aggression a label: moral panic (Ferguson, Miguel, Garza, & Jerabeck, 2012). These researchers believe that violent video games are being used as a scapegoat so blame can be shifted from the true culprits.

For example, during the course of their longitudinal study of video game playing adolescents, Ferguson et al. (2012) found that violent video game exposure was not related to any negative outcome with adolescent players and that other factors, such as family violence and depression, were the best predictors of aggressive outcomes. Ferguson et al. (2008) also did not discover a link between the two variables and instead asserted that some combination of personality, gender, and family situation may be more predictive of aggressive outcomes. Engelhardt, Batholow, and Sauls (2011) found that participants who were high in the trait anger, defined as “emotional preparation for aggressive responding [...]” (p. 539), and first played a violent video game, were the most aggressive people in their study, meaning that there had to be some sort of interaction of factors. Adachi and Willoughby (2011a) also advised that mere video game violence was not sufficient to elevate aggression in real life.

Aside from the potential absence of video game effects in terms of contributing to violence, there may actually be some benefits to playing video games. As demonstrated by the potential protective effect of video gaming on suicide when used in smaller doses, there are potential positives associated with gaming, including cognitive benefits and sociability through co-playing with family members.

Some cognitive skills used during the playing of video games transfer into benefits in real life. According to Blumberg and Altschuler (2011), there are consistent findings that sustained exposure to games promoting the use of spatial skills can lead to improved performance of students on tests of spatial ability. Additionally, the researchers found that the ability to track

multiple targets in motion, an objective that often occurs in video games, may promote visual attention skills. In contrast, Valadez and Ferguson (2012) found that there was no causal link between a visuospatial cognition skill, such as pattern recognition, and exposure to violent video games. Generally, however, these skills do seem to be at least sharpened during game play, if not in other activities. Another effect that may be enhanced during the playing of certain games is concern. Males playing non-violent video games may actually experience an increase in empathic concern for others, according to Fraser, Padilla-Walker, Coyne, Nelson, & Stockdale (2012).

Video game playing seems to be especially beneficial for girls as an opportunity to interact with their parents. According to Coyne et al. (2011), co-playing between adolescent girls and parents can result in higher levels of connectedness when the games are age appropriate. However, there is little effect when considering the same factors with regard to boys playing with their parents. Further, Cruea and Park (2012) suggested that in order to facilitate inclusiveness, parents should take time to become familiar with the games their children are playing and share their views rather than denying or ignoring their children's gaming access.

Conclusion

Researchers have examined a broad range of topics in relation to video game use, including motivations for playing, personality factors, health effects, and violence. In part due to the mixed results, conclusions in these fields, especially regarding the association between violence and video games, would be difficult to produce in both a laboratory setting and in real life. More useful and deserving of investigation is the actual content of these games. The content can potentially be observed more concretely than research on video game effects by

viewing video game footage, articles, or advertisements. Recording how much violence is included in popular video games could reveal what types of games are most likely to impact the real lives of video game players. Thus, aspects worthy of further study include how much violence appears in video games, what the violent content in games actually consists of, and how popular these particular games are with consumers.

Several researchers have been developing techniques for conducting content analyses of video games. Miller (2009) pointed out that previous studies exploring the nature and amount of violence in video games use advertisements or actual game play for analysis. The advertisements are usually only a page or two of pictures in a magazine or bulletin board. Game play must typically be restricted to only a few minutes of time, which limits knowledge of game goals, the effects of in-game choices on storylines, and the influence of characters that may be in only certain parts of the games. Miller used articles about the games as a source of study. This method allowed her access to more data as articles reviewing games may be fairly long depending on the magazine, but her technique also lost the visual context that is so important to gamers who are attracted to graphics and other visual elements of games. Still, even with the limitations inherent in her techniques, Miller found that overall violence and realism did increase over time.

The current study introduces a new method of balancing the need for breadth and depth of knowledge, along with visual rather than literary depictions of games, by analyzing video game trailers. These trailers are designed in order to appeal to potential buyers of games and thus showcase the elements that game developers believe are most important and representative of the games they have created. The research specifically focuses on potential increases in

violence as a function of time, platform type, game genre, victim identity, and perpetrator identity.

Methods

It is predicted based on previous research that certain aspects of games will have a significant effect on total instances of violence. Specifically, it is hypothesized that year, genre, and platform together will have the most robust effect on total instances of violence in games; thus, they will account for most of the variance. It is also predicted that victim and perpetrator identities will have a significant effect on total violence, specifically male humans in both categories, but that these factors will explain less of the variance than year, genre, and platform.

Of central interest to this study were video games played on consoles, meaning on such platforms as Xbox, Nintendo, and Playstation. Consoles are separated into generations, and with each subsequent generation, there are certain improvements in such elements as graphics cards that allow games to become more realistic. The focus of this study was games released from 2000 to 2012. The researcher's original intention was to select trailers based on popularity by year as obtained from the ESA, but those statistics only appeared to be available from the years 2006 to 2012. An alternative website, *VGChartz*, contains a chart listing of bestselling video games, which can be divided based on platform type. For this study, generations six and seven were of interest ("Video Game Timeline," 2009). The researcher had planned to study a more extended period of time, but it was concluded that video game trailers were a recent phenomenon after attempts to find earlier trailers failed. The sixth generation included Sony Playstation 2, Nintendo Gamecube, and Microsoft Xbox and the seventh generation console releases included Sony Playstation 3, Nintendo Wii, and Microsoft Xbox 360. The 40 global bestselling games from each console were selected for trailer viewing based on the statistics from *VGChartz* on May 29, 2013.

Also of interest in comparison to console games were computer (PC) games, but as there are not generations of PC games, in part because of constantly evolving graphics cards, selecting these games was more difficult. Due to the already large scope of this study, the 40 most popular PC games from the time period of interest were chosen and the trailers examined. Online mini-games were not considered as they are typically free and are not usually advertised via game trailers. In addition, no handheld games were chosen, meaning that cell-phone games and such handheld consoles such as the Sony PSP and Nintendo DS were not considered in the scope of this study.

A total of 280 video game trailers were selected for viewing and included most years within the range of 2000 to 2012. The trailers were principally obtained from *Gamespot*, a popular game website. This website was selected as a primary source because it tracked and listed the number of viewers of each trailer. Thus, the researcher was able to select the most popular trailer for viewing. If no trailer was available on *Gamespot*, first *IGN* and then *YouTube* were used. However, the trailers listed on the *IGN* websites were associated with no view count in order to determine popularity. Additionally, the researcher chose whichever trailer was listed first on the site. *YouTube* trailers were selected based on relevance due to the popularity of some videos that were mislabeled.

Total viewing time for each trailer ran between one and a half minutes and two minutes in order to ensure equality in trailer length. If the trailer proved to last for a shorter time period than required, a second trailer was viewed until total trailer viewing for that particular game equaled approximately two minutes. The time range was selected due to longer trailers spending more time introducing the creators, companies, and producers involved in their final product. Due to this time exclusion, some popular games were discarded because the total trailer time was

not within the range. In addition, some games were bestsellers in multiple platforms and were included in the data more than once. The researcher also had to read the descriptions of videos as some potential videos were mislabeled as trailers and could not be viewed despite their popularity.

In creating the codebook, the researcher used personal experience with game play to identify common themes. The amount and types of violence, the identity of the victims, and the characteristics of the violent perpetrator were all of interest in the current study. The types of violence included the categories described as small firearms, edged weapons, explosions, vehicles, magic and/or powers, eaten, and other. Victims were identified as property, male, female, senior, child, authorities, terrorists, criminals, monster/creature/animal, and other. Victims could belong to more than one category. For example, if a victim were identified as a terrorist and the gender of the victim was also easily determined, then the victim would belong to two categories. Characteristics of the perpetrators were first divided into four categories: human, alien, animal, and other. Further, the race and gender of the human perpetrators were identified, meaning that perpetrators could belong to more than one category. Due to the sheer amount of data that was being gathered per trailer, victim and perpetrator identity were only specified if these identities were definite. The gender of alien perpetrators was designated male, female, or unidentifiable. Video game genres included the designations specified as action, adventure, fighting, miscellaneous, platform, puzzle, role-playing, racing, shooter, simulation, sports, and strategy. Both the year released and the game genre were determined by the designation available on *VGChartz*.

In general, genres are somewhat difficult to define due to overlap in the categories. The focus of action games is typically reflexes, although these games may also include non-combat

games in which the goal is to avoid traps and perform jumps within a time limit (“Genre Definitions,” n.d.). The emphasis in adventure games is the storyline with a comparative lack of need for the quick reflexes of action games. Fighting games are about close combat and the use of precise moves with or without melee weapons; martial arts are often of key importance. Miscellaneous was used as a label when a game did not fit into any already distinct category. Platform games are action games where the setting is planes, such as levels or floors, for the player to navigate through. Puzzle games encompass actual puzzles for solving, along with games where the object is either clue gathering or manipulation of objects. The defining characteristic of role-playing games is that characters tend to level up based upon the actions dictated by the player. In racing games, the primary element of game play is either racing or driving. Shooter games are action games in which the object is for a player to shoot enemies. The goal of simulation games is to have a player perform some sort of task as realistically as possible. In sports games, players are in control of some sort of athlete or sports manager. Lastly, strategy games often involve manipulating armies where the object is to win through problem-solving.

Violence itself must also be defined. Some types of violence were easy to recognize, such as shooting another person or physically attacking an opponent. However, other potential types of violence, such as those committed in the course of playing a sports game, must also be considered. The researcher could not merely dismiss all sporting acts as non-violent because then sports games, in general, would be inherently non-violent. Thus, violence was defined as the intent to cause harm to a piece of property, creature, or person. In this way, merely hitting a target with an arrow for target practice would not be considered violent as the aim is to hit the

target rather than cause damage. Tackling in a virtual football game, and throwing a punch in a boxing game could be considered violent.

Sometimes, there were too many violent instances, perpetrators, or victims to record at one time. For example, many people may be shot at the same time during a war game. Thus, one instance of violence was recorded for each scene unless there were multiple methods on display. If in one scene a person was being stabbed while another was shot, this would count as two instances of violence. Two people being shot would only count as one instance of violence in the same scene. This same method was employed for victims and perpetrators. Two perpetrators or victims were recorded only if they were of a different race or gender. Scenes typically only lasted a few seconds for most trailers as the goal is to showcase as many aspects of a game as possible.

Results

The primary purpose of this paper is to explore the effects of time period, platform type, and video game genre on total instances of violence. A secondary goal is to discover the effects of the identities of the victims and the perpetrators on total violence.

Descriptive Statistics

Table 1: Frequencies and percentages for year, genre, and platform (N=280)

Year	<i>Frequency</i>	<i>Percent</i>
2000	3	1.1
2001	19	6.8
2002	22	7.9
2003	34	12.1
2004	26	9.3
2005	24	8.6
2006	14	5.0
2007	28	10.0
2008	19	6.8
2009	21	7.5
2010	31	11.1
2011	27	9.6
2012	12	4.3
Genre		
Action	49	17.5
Adventure	7	2.5
Fighting	6	2.1
Miscellaneous	23	8.2
Platform	16	5.7
Puzzle	3	1.1
Racing	24	8.6
Role-Playing	34	12.1
Shooter	52	18.6
Simulation	16	5.7
Sports	40	14.3
Strategy	10	3.6

Table 1 presents the frequencies and percentages for the selected games as organized by year, genre, and platform. Selecting the forty most popular games by platform type afforded a list of games that covered the full range of years from 2000 to 2012 along with twelve genres.

The method of selecting games based on platform meant that some genre types were represented by numerous examples, such as shooter games (n=52) and action games (n=49), while there were few games for other genres, including puzzle games (n=3), fighting games (n=6) and adventure games (n=7). Some years were also represented with many games, such as 2003 (n=34), while there were few bestselling games in other years, such as 2000 (n=3).

Table 2: Frequencies and percentages for the number of violent instances and the presence of violent aspects (N=280)

Violent Instances	<i>Frequency</i>	<i>Percent</i>
1-5	66	23.6
6-10	50	17.9
11-15	40	14.3
16-20	23	8.2
21-25	13	1.8
26-30	5	1.8
31 and Higher	3	1.1
Violent Methods		
Other	128	45.8
Small Firearms	103	36.8
Explosions	87	31.1
Edged Weapons	64	22.9
Magic/Powers	41	14.6
Vehicles	33	11.8
Eaten	14	5.0

Table 2 shows the frequencies and percentages of total violent instances in games and certain key violent aspects. Most games were on the low end of total violent instances. Many games contained one to five instances (n=66) or six to ten (n=55). The most common method of violence was “other” (n=128), which encompassed any of the types of violence that were not specially mentioned in coding; violence via small firearms was also fairly common (n=103).

Table 3 describes the frequencies and percentages of the types of victims and perpetrators that the researcher was able to identify. Males were the most frequent victims of violence (n=125), and property (n=98) was also commonly targeted. Females (n=16) and children (n=2)

were much rarer victims in video game trailers. Perpetrators tended to be male humans (n=139) and to be Caucasian (n=108). Female alien perpetrators of violence were rare (n=1), although female humans were somewhat more common (n=31). While violent perpetrators tended to be human in general, there were also various instances of the monsters, creatures, or animals (n=59).

Table 3: Frequencies and percentages for the identities of the victims of violence and the perpetrators of violence (N=280)

Victim Identity	<i>Frequency</i>	<i>Percent</i>
Male	125	44.6
Property	98	34.9
Monster/Creature/Animal	72	25.7
Authorities	40	14.3
Other	23	8.2
Terrorists/Criminals	17	6
Female	16	5.7
Child	2	.7
Perpetrator Identity		
Male Human	139	49.7
Caucasian	108	38.6
Monster/Creature/Animal	59	21.0
Female Human	31	11.1
African American	27	9.6
Asian	14	5.0
Other	9	3.3
Male Alien	7	2.5
Unidentifiable Alien	7	2.5
Hispanic	6	2.1
Other Human (Race)	5	1.8
Female Alien	1	.4

Inferential Statistics

Multivariate OLS regression models were employed in order to assess the impact of year, genre, platform, victim identity, and perpetrator identity on total instances of violence. The results are presented below by hypothesis. The main results are also included in Table 4 by model.

Year, Genre, and Platform: Total Instances of Violence.

On their own, two of the three variables of interest were significant predictors of total violence: *year* ($\beta=-.30, p<.05$) and *genre* ($\beta=-.43, p<.01$). The relationship between year and total violence was negative, indicating that as time passed, violence actually decreased. However, $R^2=.05$, signifying that year, genre, and platform explain only five percent of the variation of total violence.

Table 4: Multivariate Results by total violence

	Model 1		Model 2		Model 3	
	β	SE	β	SE	B	SE
Victim Identity						
Male	1.0**	.08			.28**	.11
Female	.96	.50			-.22	.56
Property	1.49**	.11			1.35**	.09
Monster/Creature/Animal	1.21**	.09			.78**	.11
Authorities	.72**	.16			.66**	.14
Terrorists/Criminals	.22	.20			.25	.21
Child	.11	2.89			-.07	2.32
Other	1.69**	.21			.18	.24
Perpetrator Identity						
Male Human			1.42**	.17	1.08**	.14
Female Human			.93**	.31	.64*	.28
Caucasian			-.32	.19	-.25	.13
African American			-1.03**	.35	-.70**	.27
Hispanic			-.52	1.34	-.36	.90
Asian			.02	.66	.91*	.47
Other Human (Race)			.16	1.08	1.21	.74
Male Alien			2.73**	1.07	2.36**	.74
Female Alien			-2.08	3.63	-1.18	2.49
Unidentifiable Alien			.64	.47	.11	.34
Monster/Creature/Animal			.92**	.15	.41**	.13
Other			1.76**	.22	1.43**	.18
Year					.09	.6
Genre					.20**	.07
Platform					-.02	.11

* $p<.05$, ** $p<.01$

Model 1: Victims and Total Instances of Violence.

Five categories of victim identity were significant predictors of total violence: *male* ($\beta=1.0, p<.01$), *property* ($\beta=1.49, p<.01$), *monster/creature/animal* ($\beta=1.21, p<.01$), *authorities* ($\beta=.72, p<.01$), and *other* ($\beta=1.69, p<.01$). A higher number of male, property, monster/creature/animal, authority, and other victims were associated with a higher total number of violent instances. The R^2 was .74, indicating that 74 percent of the variance in total violence can be explained by the victim identity variables.

Model 2: Perpetrators and Total Instances of Violence.

Five of the categories of perpetrator identity were positive and significant predictors: *male human* ($\beta=1.42, p<.01$), *female human* ($\beta=.93, p<.01$), *male alien* ($\beta=2.73, p<.01$), *monster/creature/animal* ($\beta=.92, p<.01$), and *other* ($\beta=1.76, p<.01$). This means that as the number of perpetrators in these categories increased, so did total instances of violence. Another category, *African American* ($\beta=-1.03, p<.01$), was negative and significant, indicating that violence decreased in game trailers when there were more African American perpetrators. The R^2 was .63 for these variables, indicating that perpetrator identity accounts for 63 percent of the variance in total instances of violence.

Model 3: All Variables and Total Instances of Violence

Model 3 examines the impact of victim identity, perpetrator identity, year, genre, and platform on the total instances of violence. Of the victim identity variables, four variables were positive and significant: *male* ($\beta=.28, p<.01$), *property* ($\beta=1.35, p<.01$), *monster/creature/animal* ($\beta=.78, p<.01$), and *authorities* ($\beta=.66, p<.01$). This means that as the number of these victims increases, so does total violence. Six of the perpetrator identity variables were positive and significant: *male human* ($\beta=1.08, p<.01$), *female human* ($\beta=.64, p<.05$), *Asian* ($\beta=.91, p<.05$), *male alien* ($\beta=2.36, p<.01$), *monster/creature/animal* ($\beta=.41, p<.01$), and *other* ($\beta=1.43, p<.01$).

These results show that when these types of perpetrators appear more often in game trailers, violent representations increase. The variable *African American* ($\beta=-.70$, $p<.01$) was negative and significant, revealing that the presence of African American perpetrators often coincided with a lesser amount of violence. *Genre* ($\beta=.20$, $p<.01$) was positive and significant in regard to the total amount of violence in video game trailers. The R^2 was .85 for these variables, indicating that victim identity, perpetrator identity, year, genre, and platform explain 85 percent of the variance in total violent instances.

The variable *male alien* perpetrator influenced the total instances of violence in video game trailers the most robustly. Although the variable was significant in Model 1, the *other* victim identity variable was no longer significant in Model 3. In Model 3, the variable *Asian* perpetrator became significant, although it was not significant in Model 2 when perpetrator identities were the only variables being examined. Also, year was no longer significant in Model 3, even though it was significant when year, genre, and platform were the only variables in question.

Discussion

Video games are becoming more and more popular as technology improves the amount of realism these games can portray. Some hand-held consoles, such as the Nintendo 3DS are transitioning into three-dimensional game play so players can better immerse themselves in the game world with the enhanced space and depth (Nintendo, 2013). Microsoft is releasing Xbox One and Sony is releasing the Playstation 4 in the winter of 2013 (Rivington, 2013). Microsoft asserts that the graphics with the new console are of cinematic quality, so much so that the developers boast that it is “as real as real life” (As Real as Real Life section, para. 1). With this new technology, video games may become more immersing to players and thus carry more weight in desensitizing and dehumanizing experiences. Thus, it is important to investigate just how much violence is in the most popular games that people are playing.

The first hypothesis predicted that year, genre, and platform would all be significant predictors of total violence on their own and that these variables would account for most of the variance in the sample. However, the data showed that only year and genre were significant and that together these three variables accounted for only five percent of the variance in the sample. Further, violence actually seemed to decrease as time went on. Thus, this hypothesis was not fully supported.

There are several potential reasons that could account for these mixed findings. Although violence apparently decreased as time passed, violent realism appeared to do the opposite. Nintendo Gamecube games were often fairly violent, even though there was never any bloodshed or other realistic aspects to the violence. Oftentimes, the sheer amount of violence in these early games was comparable to the amount of violence in the current war games, especially when instances of mass violence were counted as a single act of violence. Realism increased in many

later games as technology improved and more detail can be included in virtual depictions of scenes. The lack of measurement of realism may also account for why platform type was not significant. Both Nintendo Gamecube and Nintendo Wii games seemed to contain less realistic depictions of violence, meaning there was little blood and more cartoon violence, but the amount of violence was comparable to the Playstation and Xbox games.

The significance of genre is more easily understood, and it also remained significant in Model 4 when victim and perpetrator identity factors were included as variables. Certain types of genres inherently seem to contain more violence. By definition, the object of shooter games is to kill other characters or players with weapons. Fighting games often involve the use of martial arts and other weapons to defeat players. Other genres, such as puzzle games, do not necessarily involve these elements. Thus, it makes sense that genre would be a significant predictor of violence.

The first hypothesis also indicated that year, genre, and platform would account for a significant portion of the variance in the total instances of violence, a prediction that was not supported by the data. The second hypothesis predicted that the male human variables of victim identity and perpetrator identity would be significant predictors of total violence. Additionally, it was posited that victim identity and perpetrator identity would explain less of the variance in the sample than year, genre, and platform. Some aspects of this hypothesis were supported and others lacked support.

Several factors were significant in all three of the models. The male, property, monster/creature/animal, authorities and other variables were significant in Model 1, when only victim identity factors were included. In Model 2, the male, human, female human, African American, male alien, monster/creature/animal, and other variables were all significant when

only perpetrator identity factors were included. Finally, in Model 3, victim identity, perpetrator identity, year, genre, and platform were all examined in relation to total violent instances. Male, monster/creature/animal, and authorities were significant among the victim identities. Male human, female human, African American, Asian, male alien, and monster/creature/animal were significant among the perpetrator identities. Genre was also significant. Thus, while male humans were significant predictors of total violence for both victims and perpetrators, they were not the only significant variables within these categories.

Victim identity and perpetrator identity actually explained more of the variance in total instances of the violence than year, genre, and platform. While year, genre, and platform explained only five percent of the variance, victim identity and perpetrator identity accounted for 74 percent and 63 percent, respectively. Combining all of the variables explained 85 percent of the variance in total violence.

Although the markedly high variance accounted for by victim and perpetrator identity was unexpected, it does make sense. It stands to reason that as the numbers of victims and perpetrators increase, so will violence, despite the fact that blurriness of the picture and other factors sometimes prevented the recording of these identities. If violence does occur, there must be a perpetrator and at least an intended recipient. More interesting are the identities that were significant.

Of the significant variables, the increasing presence of that factor indicated an elevation in total violent instances except for the presence of African American perpetrators. The relationship between African American perpetrators and total violent instances was negative, meaning that violence decreased when these perpetrators were present. African American perpetrators typically appeared in sports games, especially American football where tackling is

an integral part of the sport. These game trailers were not usually very violent, especially in comparison to shooter games. Also, it tended to be difficult to tell the race of the players in these games. The quality of these particular trailers was low as the earlier versions were frequently obtained from *YouTube*. Thus, there may have been more African American perpetrators than was recorded.

Male humans were very common, both as perpetrators and as victims, in violent games. Main characters in many games did tend to be male, probably to appeal to their principally male audience. Soldiers in the most violent war games were usually male as well. The male perpetrators were also often Caucasian, which may speak to the audience that the game developers are attempting to attract. On the other hand, violence to property often occurred in the course of racing games as players attempted to run their opponents off the road. For example, the principal victims of violence in the *Need for Speed* series and *Gran Turismo* series consisted of damage done by vehicles to other vehicles.

Monster, creature, and animal victims and perpetrators were often in games that contained more fantasy elements and higher instances of violence. For example, creatures were often involved in cartoon violence in the *Mario* games showcased on the Nintendo console. They also appeared in games with horror elements, such as the *Doom 3* and the *Resident Evil* series, where enemies could be especially grotesque and numerous. Authority figures were often victims in war games, although it was difficult to tell definitively whether a person was a soldier due to an occasional lack of uniform and picture quality. In such cases, authority figures were not recorded as victims.

So-called “other” victims were significant in Model 1 but not in Model 3 when year, genre, and platform were included in the analysis. This may be because the “other” category was

used most principally when robots were present as victims. The appearance of robot victims was mainly limited to the action, shooter, and simulation genres, which may have prompted the loss of significance in Model 3. “Other” perpetrators were also significant in both Model 2 and Model 3. High counts of these perpetrators could often be pinpointed to games in the *Star Wars* series or the game *MechAssault*, where robot violence was high.

The presence of female human perpetrators was also a significant predictor of total violent instances. These perpetrators were present in the comparatively violent *Mario* games, usually in the form of Princess Peach. There was also a tendency for female perpetrators to appear in fighting games and in the *Star Wars* games where Princess Leia was a playable character. These games contained moderate amounts of violence.

The appearance of Asian perpetrators became significant in Model 3 when year, genre, and platform were added into the analysis, but it was not significant in Model 1. Asian perpetrators tended to only appear in the fighting games where martial arts moves are a primary form of violence.

Interestingly, the presence of male alien perpetrators exerted the most robust influence on total violence. Male aliens only appeared as perpetrators seven total times, and they were only in *Star Wars* and *Halo* games. These games tended to contain fairly high numbers of violence, but the realism of this violence was not very high in comparison to the *Call of Duty* games.

Limitations

Although there are some strong findings in this study, there are some inherent limitations. Firstly, as coding was compiled only by one researcher, there is no inter-rater reliability. Thus, there may be instances where violence and victim or perpetrator identities were overlooked, particularly when the researcher questioned picture quality. However, the researcher tended to

err on the side of caution, especially when recording identity particularities. Additionally, there were so many variables to look for at one time that the possibility of missing at least a few violent instances was quite high, particularly when the scenes changed very quickly. Similar research in the future should make full use of teams looking for each factor group. For example, at least two or three coders should code for violence only, two or three for victims only, and so on. This type of coding may also make it possible to code all of the victims and perpetrators during scenes of mass killings, thus allowing for a more accurate count.

Another aspect to consider that could potentially weaken the study is that the genre categories might not always be accurate. Although *VGChartz* designated the genres as belonging to one category, other websites labeled some games as different genres entirely or even a combination of genres. Thus, genre may be more important than the data suggests or may not be significant.

A third limitation of the study when comparing trailer viewing to the actual playing of games stemmed from the content of the trailers themselves. There were different types of trailers and some were more suited to this study than others. Cinematic trailers and a few game play trailers were composed of one or only a few scenes, which limited the coding of violence. Future studies should take the peculiarities of these trailers into account, perhaps by coding new instances of violence both when there is a scene change and when five seconds have passed without a scene change. Trailers with scene changes tended to be easier to code unless the scene changes were very quick. It may be easier to code these types of trailers more accurately using more coders. It could even be possible to code the total number of victims and perpetrators in war trailers.

The point of view of the trailers also mattered. Trailers featuring game play footage in which the scenes were depicted in first-person made it impossible to code for perpetrator identity if the playable character was the one committing the violence. In addition, the trailers tended to feature only one aspect of game play, such as playing a campaign, while neglecting others, such as the multiplayer aspect of games. Lastly, some of the older trailers, such as *The Sims* games for PC, featured live-action actors rather than video game footage, which was not expected.

Future studies should also measure realism of violence and sexualized imagery, which may again be possible with additional coders. Games with cartoon violence may have the same total amount of violence, which was accounted for in this study, but this does not mean that the depictions of violence are detailed to the same caliber. In order to properly gauge the true level of violence, both amount and intensity of violence should be accounted for in future studies. Additionally, it may be useful to code for sexualized images in these trailers to see if there is a connection between levels of violence and sexually explicit imagery. Some of the *Grand Theft Auto* trailers contained few instances of violence but numerous sexually charged images.

The study also neglected hand-held consoles and online games. In addition to expanding the selection of PC games in order to assess further differences, studying hand-held consoles games, including the *Pokémon* series, and popular Internet flash games are potential areas of study. It may prove to be impossible to study trailers for Internet flash games, however, as trailers were already sometimes difficult to find or even nonexistent for some console games.

Lastly, future research may employ potential game addicts in order to discover which aspects of trailers most provoke their interest. This would reveal which types of game features, such as realism, violence, or sexualized content, are most appealing to players who are

compelled to play to the extent of significant distress or impairment. Specifically, it might also allow researchers to identify which aspects of violence appear in the most addicting games.

Conclusion

The primary intent of this study was to discover whether violence has changed over time, whether genres impact the amount of violence, and if some consoles are more prone to carrying games with violent content than others. Beyond answering these questions, the current research has revealed that the identity of victims and perpetrators may have more of an impact on violent content than any other factors.

It has been established that violence is firmly present in video games and that there are unexpected factors, such as victim and perpetrator identities that are affecting the amount of violent content. Further investigation into the intensity of violence and sexualized images along with an expansion of the platforms of the study and the employment of actual people who are addicted to video games will allow for more concrete conclusions. Discovering the impact of these factors could pave the way for further behavioral and legal implications, especially if it is the realism rather than the amount of violence that is increasing as video game technology improves.

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