A Positive Side of Violent Video Game Play: The Negative Correlation Between Violent Video Game Play and Violent Crime

Shayla Batty*

Abstract

The rising popularity of video games among youth leaves many parents concerned that video game violence negatively affects their children and subsequently makes them more likely to commit crime. By denouncing literature that suggests that video game violence increases individual aggression and reviewing preexisting research to assert that video game violence does not lead to real-world violence, this paper argues that violent video game play and violent crime exist in a negative correlation. The Routine Activities Theory may be helpful in explaining this relationship, as perhaps the declined crime rate may be tied to the fact that violent video game play occurs in the home environment putting potential victims of crime out of harm's way- but this approach is not without its limitations. The catharsis effect is offered as another explanation of this phenomenon, suggesting that violent video game play is an outlet for aggressive behaviors. This paper will unpack relevant studies and discuss the importance of critically thinking about preexisting risk and protective factors for crime and violence when evaluating claims about video game violence and its effects. The Entertainment Software Rating Board (ESRB) and provincial regulations within Canada are discussed as integral implications of the perceived effects of video game violence among youth, while understanding that the rising popularity of eSports illustrates key contradictions within public policy. Following its discussions on relevant literature, this paper points to a comparative analysis and a further understanding of gender differences as directions for future research.

Keywords: crime, video games, media, violence

The claim that violent video game play increases aggression or is linked to violent crime has been debated amongst academics and in the media for decades. This paper addresses the effects of violent video game play (or lack thereof) on individual aggression, notes differences of these effects between genders, and discusses how violent video game violence does not lead to real-world violence, using violent crime rates to further illustrate this point. This paper argues that violent video game play and violent crime exist in a negative correlation. The catharsis effect as well was the

* Department of Sociology, College of Arts and Science, University of Saskatchewan, Saskatoon, SK, Canada
Correspondence: **srb850@usask.ca**

University of Saskatchewan Undergraduate Research Journal
Volume 6, Issue 3, 2020

Routine Activities Theory may be helpful in explaining this negative correlation, as perhaps the declined crime rate may be tied to the fact that violent video game play occurs in the home environment- but this approach is not without its limitations. This paper will unpack relevant studies and discuss the importance of critically thinking about preexisting risk and protective factors for crime and violence when evaluating claims about video game violence and its effects. Finally, this paper will provide an overview of public policy options regarding youth exposure to violent video games, as well as directions for future research in this area.

Aggressive Behavior and Violent Video Game Play

Before moving forward, it is imperative that two key terms be defined. Borrowed from Laczniak, Varlson, Walker, and Brocato (2017), violence within video game play is defined as "video game content that depicts intentional attempts by individuals to inflict harm on others" (p. 71). Next, aggressive behavior is defined as behavior that is intended to harm another individual (Dodge, Coie, & Lynam, 2006). With those definitions in mind, previous studies have suggested that violent video game play is linked to or is a risk factor for aggressive behavior (Anderson, Gentile, & Buckley, 2007; Willoughby, Adachi, & Good, 2012; Anderson, 2004; Anderson et al., 2010; DeLisi, Vaughn, Gentile, Anderson & Shook, 2013; Greitemeyer & Mugge, 2014; Shao & Wong, 2019). One of the largest meta-analyses on this relationship was conducted by Anderson and company in 2010, arguing that that there is little publication or analytic bias in the literature. Hilgard, Engelhardt, and Rouder (2017) completed a reanalysis of the piece and found strong evidence of publication bias (especially among studies deemed as "best practices" among the authors) as well as evidence that the observed effect sizes relating gaming to aggression were smaller than those originally proposed. This meta-reanalysis demonstrates the flaws embedded within research in this area, suggesting that some studies illustrating a connection between violent video game play and aggressive behavior may be further reaching than previously thought.

Recent studies have revealed that there is no statistical or practical correlation between violent video game play and aggressive behavior. McCarthy, Coley, Wagner, Zengel, and Basham (2016), failing to confirm their hypothesis seeking a correlation between violent video game play and aggressive behavior, instead found no increased inclinations of aggressive behavior when playing a violent video game in relation to those playing a non-violent video game. Moreover, Przybylski and Weinstein (2019), when asking adolescents' guardians if they noticed aggressive behavioral changes in their children after playing violent video games, found no evidence to suggest that adolescents' aggressive behavior was influenced by violent video game play. These studies have produced results suggesting violent video games do not increase aggressive behavior. Interestingly, research has found that video game violence may promote an opposite effect to aggressive behavior if the violence is framed within a prosocial context. Gitter, Ewell, Guadagno, Stillman, and Baumeister (2013) suggest that violent video games with prosocial motives and storylines (i.e. using violence to protect a friend) can promote lower short-term aggression and higher levels of prosocial cognition in players. Considering these studies, one begins to question the widely circulated notion connecting aggression to video game violence.

Other factors associated with video game play aside from video game violence may contribute to observed increases in aggressive behavior. For instance, the environment in which violent video games are played may contribute to temporary increases of aggression. Hasan, Bègue, Scharkow, and Bushman (2012) completed a cumulative longitudinal study on aggressive behavior in violent video game players. They found that "aggressive behavior and hostile expectations increased over [the three] days for violent game players … and the increase in aggressive behavior was partially due to hostile expectations" (p. 224). This suggests that aggression is partially perpetuated by the hostile environment in which violent video game play typically takes place, not simply the violent content. Secondly, the competitive nature of video games may be another factor influencing aggressive behavior. Adachi and Willoughby (2011) confirmed this assumption when they found that competitiveness was the variable that increased aggression, as there was no difference in the effect between violent video games and non-violent video games on levels of aggression. These results indicate that the environment that is produced by game play in general increases aggression as opposed to a game's violent content.

Differences In Gender

Violent video game research, particularly when discussing linkages to aggressive behavior, has been primarily focused on male participants (Eastin & Griffith, 2006; Staude-Müller, Bliesener, & Luthman, 2008; Bösche, 2010). Research that has looked to understand this phenomenon within the context of gender differences is highly mixed. While some authors suggest that there are no differences between male and female responses to violent content (Anderson & Bushman, 2001), others say that males are more negatively affected than females (Bartholow & Anderson 2002), or assert that male aggression is increased while female aggression is not only static, but increases anti-violence norms (Shibuya, Sakomoto, Ihori & Yukawa, 2008). With such variation in

findings, scholars have begun to look at specific elements of game play that may impact aggression between genders.

Research has illustrated that the gender of a controlled character within a violent video game influences participants' outcomes of subsequent aggression. Anderson and Murphy (2003) set out to examine violent video game effects on aggression in women by focusing on a moderating variable: gender of the controlled avatar. By measuring aggression via a competitive reaction time task, they found that female participants who played with a female avatar showed more aggressive behavior after game play than female participants that played with a male avatar. Similar to these findings, a study found that aggressive thoughts in violent video game players were greater when the gender of the player and the avatar matched for both male and female participants (Eastin, 2006). However, Eastin (2006) notes that females generally had more aggressive thoughts while playing a female avatar, while aggressive thoughts in males were greater than those of the female participants, regardless of their avatar's gender. Interestingly, Yang, Huesmann, and Bushman (2014) produced opposite outcomes while examining both male and female participants' outcomes on aggression. They found that both male and female participants who played with a male avatar exemplified greater aggressive behavior than participants who controlled a female avatar. These mixed findings indicate that there may be other factors contributing to aggressive outcomes between genders, which needs to be further studied to understand the complex role that gender plays in aggressive behaviors and thoughts following violent video game play.

Violent Video Game Play and Violent Crime

It is unethical to create experimental studies to determine if violent video game play is a main contributor to violent crime, as that would include criminal acts of violence. That is why when studies assert this relationship, they are simply based on different ideas of how violent crime could arise from violent video game play. One of these ideas comes from Anderson et al. (2007), who state that violent crime is linked to violent video game play through a player's desensitization to violence. Desensitization adds a layer of "ease" to committing criminal acts, therefore making criminal behavior more likely throughout a player's lifetime. The flaw with this conclusion is the assumption that desensitization to violence will lead an individual to believe that real-world violence is an acceptable behavior, simply because of a diminished emotional response. For real-world violence to arise from desensitization to violence, an individual must have a previous understanding that crime is acceptable. For desensitization to translate into real-world violence, the player must be predisposed to anti-social tendencies to commit violent crime. Moreover, Jones (2002) explains that violent video games, in the same vein as the catharsis effect discussed later, provide a fictional space in which children can learn to control the emotions of anger and violence. Additionally, he notes that children understand the difference between fantasy and reality, further demonstrating how youths' exposure to violent video games alone is unlikely to promote criminal behavior.

Experimental studies that measure aggression during violent video game play and link those findings to an increased likelihood of criminal behavior may be flawed, as lab-measured aggression may not translate into real-world violence. Typically, aggression in the lab is measured in mundane forms, such as the amount of hot sauce one player gives to another (fictional) player who does not like spicy food (Barlett, Branch, Rodenheffer & Harris, 2009), or punishing opponents by exposing them to loud and unpleasant noises (Anderson & Dill, 2000). However, this operationalization of aggressive behavior does not translate into real-world violence. To determine the validity of this claim, Markey, Markey, and French (2015) examined FBI crime data from the last thirty years alongside sales of video games, releases of popular video games, and internet searches for violent video game guides. They found no evidence that violent video games were even a minor contributing factor in violent crimes in America. Despite the media (i.e. Columbine High School shooting) and various researchers (Grossman, 1998; Bushman, 2008; Gentile & Anderson, 2003) claiming that violent video game players are more likely to commit criminal acts of violence, the real-world data do not support these hypotheses.

The Importance of Risk and Protective Factors in Predicting Future Crime

It is important to note that no one single risk factor causes someone to commit violent criminal acts. If violent video game play did contribute to violent crime, it alone could not be the only factor producing that outcome. The cumulative risk (CR) model predicts that the greater amount of risk factors a child is vulnerable to in the absence of protective factors, the greater chance that the child will experience negative emotional, behavioral, and cognitive outcomes (Bartol & Bartol, 2017). Therefore, the argument that violent video game play leads to or causes violent crime is inaccurate. A child must be exposed to many risk factors and have fewer protective factors to even be at risk of committing crime. Exelmans, Custers, and Bulck (2015) note that delinquent behavior is a product of multiple risk factors. Their study showed that violent video game play contributes a small, but significant risk when combined with

other known risk factors, such as "attitudes towards violence … overall screen exposure, [presence of a] psychopathic trait, prior aggression, and peer delinquency" (p. 275). A limitation of this study is that it does not address the possibility of protective factors present and their positive influence. Protective factors include (but are not limited to) prosocial behavior, presence of self-regulation skills, interpersonal and social skills, and positive preschool and grade school experiences (Bartol & Bartol, 2017). Protective factors can mitigate the effects of risk factors on an individual. For example, the CR model would suggest that an individual with high overall screen exposure and many protective factors compared to a person with the same risk factor, but fewer or no protective factors present, is less likely to commit crime. To expand, protective factors such as cognitive skills can aid in reducing the likelihood of violent behavior. Individuals with normal cognitive functioning are less likely to engage in violent or aggressive behaviors as a quick and "correct" solution to social predicaments (an indication of developed cognitive skills as cited in Bartol & Bartol [2017]). This plays a large role in an individual's susceptibility to violent media as a risk factor. In sum, violent video game play is not a risk factor for all players, as violent media or imagery alone does not produce criminal or violent behaviors.

Negative Correlation Between Violent Video Game Play and Violent Crime Data

There is evidence claiming that violent video game play may play a role in crime reduction. One of the first studies to report this finding was Ward (2011), who found that a decrease in property and violent crime, as well as mortality rates, correlated with an increase of video game stores in a county, which he used as a as proxy measure for violent video game play. Reduced crimes included burglary, larceny, motor vehicle theft, and arson, as well as one violent crime- robbery. A limitation of this study is that the proxy variable, video game stores, combined non-violent and violent video games. To address this limitation, Cunningham, Engelstätter, and Ward (2016) examined the short and medium run effects of violent video game sales on violent crime. This was done by using the fifty bestselling violent video games and violent criminal offences in America as listed by the National Incident Based Reporting System from 2005-2008. They found that violent video game sales and crime were in a small, but statistically significant negative correlation. In the weeks following popular violent video games being released, crime rates in those areas decreased by 0.16%. This translates to 2000 fewer crimes per year at most, considering the effect of video game sales occurs year-round. This evidence indicates that violent video game play can meaningfully reduce crime rates and produces insight into the negative correlation between violent video game play and crime.

Possible Explanations

Scholars have provided possible explanations as to why violent video game play exists in a negative correlation to violent crime. McCaffree and Proctor (2017) propose Routine Activities Theory (RAT) as an explanation. RAT describes the chances of an individual experiencing victimization by how frequently their routine behaviors put them into contact with motivated offenders and not with protective others, such as supervisory agents or people that encourage the potential victims to stay in safe environments (Cohen & Felson, 1979). Since violent video game play typically occurs in the home, RAT would suggest that this separates potential victims and motivated offenders, lowering the odds of violent video game players becoming victims of crime. Another point that McCaffree and Proctor (2017) bring to light is that violent video game play in the home is likely to increase the presence of protective others, ultimately decreasing a player's chances of victimization. In their study comparing the time spent at home playing video games to crime rates, there was a larger reduction in property crimes than violent crimes, apart from murder and robbery. They propose that reductions in property crimes and robbery can be attributed to victims staying at home more often, making potential criminals reluctant to commit those types of crimes. A few limitations of this study are that the data from 1997 – 2003 only included computer games and measured general video game play- it did not separate violent from non-violent games. Regardless, RAT is a plausible theory to explain the negative correlation.

It should be noted that there is a key limitation in using RAT as an explanation for this phenomenon. As mentioned previously, McCaffree and Proctor (2017) explain through RAT that violent video game play primarily takes place in the home around protective others which makes it a useful tool for keeping potential victims out of situations or entering encounters with criminals. However, this rationalization ignores bourgeoning bodies of research examining the realities of parent-child conflict and poorer parent-child relationships owing to the overuse of or problematic video game play (Choo, Sim, Gentile & Khoo, 2015; Da Charlie, HyeKyung & Khoo, 2011; Kwon, Chung & Lee, 2011; Kim & Kim, 2015; Zhu, Zhang, Yu & Bao, 2015), suggesting that engaging in excessive game play in the home has the potential to damage relationships with protective others.

The catharsis effect is another possible explanation, as violent video games may be used as an outlet for anger and potential subsequent violence. Markey

et al. (2015) drew this conclusion for the negative correlation from their data analysis. They propose that the reduction in violent crime is because players can release their aggression into a virtual world as opposed to the real world. Other research supports this notion: Olson, Kutner, and Warner (2008) reveled that after playing violent video games, male youth reported feeling less angry, and tended to purposely choose violent video game play as a tool to release anger. Ward (2011) also wrote about the catharsis effect as an explanation for his data results. He suggests that experiences within video game play serve as a socially acceptable substitute for violent behavior in the real world. The virtual world of violent video game play replaces the expression of anger that could have been projected onto the real world via criminal behavior. However, it should be noted that there is research suggesting the opposite- the release of anger into a virtual reality does not reduce real-world aggression (Bushman, 2002). Despite this, the former (and more recent) studies indicate that the catharsis effect may play a role in reducing crimes.

The impact of the catharsis effect is especially prevalent for people predisposed to aggressive and violent behaviors. This is because "individuals who are prone to aggression and violence tend to seek out violent media, like video games, to provide them with models that express behaviors and desires consistent with their own innate motivational system" (Markey, in press; Surette, 2012). This statement aligns with McCaffree and Proctor's idea of keeping potential victims and motivated offenders out of each other's paths (2017). Especially during the release of popular violent video games, individuals who are predisposed to violent behavior and use gaming as an outlet are more likely to be preoccupied in their homes and not committing crime. Catharsis is a possible explanation for violent video game play reducing property and violent crime because violent video games provide an outlet for aggression in both individuals that are predisposed to violent and aggressive behaviors and those who are not.

Public Policy Options and Implications

Due to studies suggesting that violent video game play may lead to problematic behavior in children and adolescents (Anderson, Gentile & Buckley, 2007; Gentile et al., 2004), reports from professional heath associations (i.e. American Academy of Pediatrics, American Psychological Association, Canadian Paediatric Society) and concerns from parents of gaming adolescents' (i.e. Common Sense Media / Center for American Progress), the video game industry created rating systems to help inform consumers on the "appropriateness" of video games for certain age groups based on content. The two primary classification systems are the Pan European Game Information and the Entertainment Software Rating Board (ESRB). This paper will tailor its discussion to the ESRB, as it is officially recognized, implemented, and used in North America. The ESRB has a three-part self-regulated rating system that includes rating categories for age-appropriateness ranging from "C" for early childhood, "E" for everyone, "T" for teen, "M" for mature, and "AO" for adults only, descriptors to indicate possible inappropriate content, and interactive elements that provide information about online-gaming safety (ERSB, 2020).

This rating system, although arguably problematic due to producers having control over the rating of their own products (Felini, 2014), has been helpful in guiding parents to make informed choices on which video games they feel are safe for their children to play. Despite arguments stating that these rating systems do not accurately reflect the content in video games (Walsh & Gentile, 2001; Hanginger & Thompson, 2004), Laczniak, Carlson, Walker, and Brocato (2017) found that children of parents who employ restrictive household rules on video game play tend to play fewer video games. More importantly, the effects of those efforts are strengthened when parents use the ESRB system (Laczniak, Carlson, Walker & Brocato, 2017). Therefore, efforts to restrict violent video game play for children and adolescents may be most effective when pursued by parents who use the ESRB system.

Governments have attempted to restrict violent video game sales for the well-being of minors (Saunders, 2013). Primarily, legislation in the United States has failed to go through the courts as the restriction of violent video game sales has been deemed unconstitutional under the first amendment, as efforts to do so limit artistic expression (Brown v. Entertainment Merchants Association, 2011). When governments argue for legislation, they claim that that violent content in video games is similar to sexually obscene content when viewed by minors, and that violent content is harmful for children and can lead to criminal behavior (Collier, Liddel & Liddel, 2008). In their explanation on why governments have failed to restrict sales, Collier, Liddel & Liddel (2008) state that if the sale of violent video games is to be legislated, empirical research must be developed to show that violent video games are actually harmful to children, which has yet to be explicitly established. Chakraborty and Chakraborty (2015) assert that in this way, lawmakers are somewhat contradicting themselves. They claim that in some cases, such as minors purchasing lottery tickets or pornography, association to possible future harm is enough to restrict sales of those products. Contrarily for violent video games, a causal relationship to harm is necessary for the restriction of sales.

In Canada, the ESRB has been helpful in providing guidelines for provinces to enact legislation restricting the sale of age-inappropriate video games to minors. Ontario (Film Classification Act, 2005), Manitoba (The Amusements Act, 2005), Nova Scotia (Theatres and Amusements Act,

2016), and Saskatchewan (The Film and Video Classification Act, 2016), have all implemented similar legislative restrictions through film and motion picture boards. Regions of Canada can enact this legislation easier than the United States because Section 1 of Canada's Charter of Rights and Freedoms, which guarantees the right to freedom of expression to all Canadians, has reasonable limits (Canadian Charter, 1982, s 1). Courts agree that the protection of children from the potentially harmful effects of video game violence is enough to restrict the sales of those types of games (Global News, 2011).

Although both the United States and Canada seem to hold the position that violent video game play should be limited for the sake of their young citizens, this is somewhat contradictory considering the rising popularity of eSports. eSports refers to competitive video gaming, both professional and amateur, that is often played within various leagues, takes place in tournaments, and consists of customary teams that are sponsored by various business organizations (Hamari & Sjöblom, 2017). Despite many popular eSport games, particularly first-person shooter games being violent at their core, the revenue generated by this emerging sport is enough for places like North America and Asia to push aside the warnings by researchers that first prompted them to question the harm brought about by video game violence. According to Statista, the global eSports market is expected to reach nearly 1.6 billion U.S. dollars by 2023 (Gough, 2020). eSports illustrates the inconsistency of governments' approaches to understanding and managing video game violence and its perceived effects.

Directions for Future Research

Future research should explore and compare the effects of both violent and non-violent video game play on violent crime rates. This would be beneficial to the field, as studies have examined violent video game play's effects on violent crime rates (Cunningham, Engelstätter & Ward, 2016; Markey, Markey & French, 2015) as well as these effects when violent and non-violent video games are combined (McCaffree & Proctor, 2017; Ward, 2011), but there appears to be a gap in the literature in understanding how (or if) each of type of game play can reduce crime in a comparative analysis. Finally, future research should work to understand the complex role that gender plays in influencing players' emotions and cognitive outcomes following violent video game play, contributing to the larger discussion of video games and its effects.

Conclusion

Given the provided evidence, violent video games should not be considered a threat to our youths' violent tendencies, but instead could be utilized as a crime reduction tool. Leading up to its main argument, this paper unpacked and sided against the widely accepted notion that violent video game play increases aggression in players and subsequently, their likelihood of participating in real-world violence. While reminding the reader to consider preexisting risk factors for criminal behavior when assessing the effects of video game violence, studies and crime data were presented to suggest that violent video game play and violent crime exist in a negative correlation. RAT and the catharsis effect were offered as possible explanations for this phenomenon. While this paper did assert its position that violent video games do not harm today's youth, it discusses public policy options regarding the parental- and governmental-regulation of age and content rated video games and addresses the contradiction produced by the popularity of eSports. Throughout this paper, gaps in the literature were identified and were offered as directions for future research.

References

Adachi, P. J., & Willoughby, T. (2011). The effect of violent video games on aggression: Is it more than just the violence? *Aggression and Violent Behavior, 16*(1), 55-62. doi:10.1016/j.avb.2010.12.002

Anderson, C. A. (2004). An update on the effects of playing violent video games. *Journal of Adolescence, 27*(1), 113-122. doi:10.1016/j.adolescence.2003.10.009

Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12, 353–359. doi:10.1111/1467-9280.00366

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology*, 78(4), 772–790. doi:10.1037/0022-3514.78.4.772

Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research and public policy* (13th ed.). New York: Oxford University Press.

Anderson, C. A., & Murphy, C. R. (2003). Violent video games and aggressive behavior in young women. *Aggressive Behavior,* 29, 423-429. doi: 10.1002/ab.10042

Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological Bulletin, 136*(2), 151-173. doi:10.1037/a0018251

Barlett, C., Branch, O., Rodeheffer, C., & Harris, R. (2009). How long do the short-term violent video game effects last? *Aggressive Behavior, 35*(3), 225-236. doi:10.1002/ab.20301

Bartholow, B. D., & Anderson, C. A. (2002). Effects of violent video games on aggressive behavior: Potential sex differences. *Journal of Experimental Social Psychology*, 38, 283-290. doi:10.1006/jesp.2001.1502

Bartol, C. R., & Bartol, A. M. (2017). *Criminal behavior: A psychological approach* (11th ed.). Harlow, England: Pearson. *Brown v. Entertainment Merchants Association*, 564 U.S. 786 (2011)

Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*, 22(4), 139-146. doi:10.1027/1864-1105/a000019

Bushman, B. J. (2002). Does venting anger feed or extinguish the flame? Catharsis, rumination, distraction, anger, and aggressive responding. *Personality and Social Psychology Bulletin, 28*(6), 724-731. doi:10.1177/0146167202289002

Bushman, B. J. (2008). Grand theft summer vacation. *Detroit Free Press*. Retrieved from http://www.rcgd.isr.umich.edu/news/bushman.06.29.08.freep.pdf

Chakraborty, J., & Chakraborty, N. M. (2015). Public policy and violence in video games. *Interactions, 22*(1), 64-67. doi:10.1145/2692813

Choo, H., Sim, T., Liau, A. K., Gentile, D. A., & Khoo, A. (2014). Parental influences on pathological symptoms of video-gaming among children and adolescents: A prospective study. *Journal of Child and Family Studies, 24*(5), 1429-1441. doi:10.1007/s10826-014-9949-9

Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review, 44*(4), 588-608. doi:10.2307/2094589

Collier, J. E., Liddell, P., & Liddell, G. J. (2008). Exposure of violent video games to children and public policy implications. *Journal of Public Policy & Marketing, 27*(1), 107-112. doi:10.1509/jppm.27.1.107

Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Understanding the effects of violent video games on violent crime. *Southern Economic Journal, 82*(4), 1247-1265. doi:10.2139/ssrn.1886419

Da Charlie, C. W., Hyekyung, C. W., & Khoo, A. W. (2011). Role of parental relationships in pathological gaming. *Procedia - Social and Behavioral Sciences, 30*, 1230-1236. doi:10.1016/j.sbspro.2011.10.238

Delisi, M., Vaughn, M. G., Gentile, D. A., Anderson, C. A., & Shook, J. J. (2012). Violent video games, delinquency, and youth violence. *Youth Violence and Juvenile Justice, 11*(2), 132-142. doi:10.1177/1541204012460874

Dodge, K. A., Coie, J. D., & Lynam, D. (2006). Aggression and antisocial behavior in youth. In W. Damon, R. M. Lerner, & N. Eisenberg (6th ed.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 719-788). Hoboken, NJ, US: John Wiley & Sons Inc.

Eastin, M. S. (2006). Video game violence and the female game player: Self- and opponent gender effects on presence and aggressive thoughts. *Human Communication Research, 32*, 351-372. doi:10.1111/j.1468-2958.2006.00279.x

Eastin, M. S., & Griffiths, R. P. (2006). Beyond the shooter game; Examining presence and hostile outcomes among male game players. *Communication Research, 33*(6), 448-466. doi:10.1177/0093650206293249

Entertainment Software Ratings Board. (2020). Ratings guides. Retrieved from https://www.esrb.org/ratings-guide/

Exelmans, L., Custers, K., & Bulck, J. V. (2015). Violent video games and delinquent behavior in adolescents: A risk factor perspective. *Aggressive Behavior, 41*(3), 267-279. doi:10.1002/ab.21587

Felini, D. (2014). Beyond today's video game rating systems: A critical approach to PEGI and ESRB, and proposed improvements. *Games and Culture, 10*(1), 106-122. doi:10.1177/1555412014560192

Film Classification Act, 2005, S.O. 2005, c. 17. Retrieved from https://www.ontario.ca/laws/statute/05f17

Gentile, D. A., & Anderson, C. A. (2003). Violent video games: The newest media violence hazard. In D. A. Gentile (Ed.), *Media violence and children: A complete guide for parents and professionals* (pp. 131–152). West Port, CT: Praeger.

Gentile, D. A., Lynch, P. J., Linder, J. R., & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviors, and school performance. *Journal of Adolescence, 27*(1), 5-22. doi:10.1016/j.adolescence.2003.10.002

Global News. (2011, June 27). Video game law in Canada. Retrieved from https://globalnews.ca/news/124345/video-game-law-in-canada/

Gough, C. (2020, June 16). Revenue of the global eSports market 2018-2023. Retrieved from https://www.statista.com/statistics/490522/global-esports-market-revenue/

Government of Canada. (1982). Canadian Charter of Rights and Freedoms, s 1, Part I of the Constitution Act, 1982, being Schedule B to the Canada Act 1982 (UK), 1982, c11

Greitemeyer, T., & Mugge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin*, 40, 578–589. doi:10.1177/0146167213520459

Grossman, D. (1998, August 10). Trained to kill. Retrieved from http://www.christianitytoday.com/ct/1998/august10/8t9030.html?order&start12

Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? *Internet Research, 27*(2), 211-232. doi: 10.1108/IntR-04-2016-0085

Haninger, K., & Thompson, K. M. (2004). Content and ratings of teen-rated video games. *Jama, 291*(7), 856. doi:10.1001/jama.291.7.856

Hasan, Y., Bègue, L., Scharkow, M., & Bushman, B. J. (2012). The more you play, the more aggressive you become: A long-term experimental study of cumulative violent video game effects on hostile expectations and aggressive behavior. *Journal of Experimental Social Psychology, 49*, 224-227. doi:10.1016/j.jesp.2017.08.009

Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin, 143*(7), 757-774. doi:10.1037/bul0000074

Jones, G. (2002). Killing monsters: Why children need fantasy, super heroes, and make-believe violence. New York: Basic Books.

Kim, K., & Kim, K. (2015). Internet game addiction, parental attachment, and parenting of adolescents in South

Korea. *Journal of Child & Adolescent Substance Abuse, 24*(6), 366-371. doi:10.1080/1067828x.2013.872063

Kwon, J., Chung, C., & Lee, J. (2011). The effects of escape from self and interpersonal relationship on the pathological use of internet games. *Community Mental Health Journal, 47*(1), 113-121. doi:10.1007/s10597-009-9236-1

Laczniak, R. N., Carlson, L., Walker, D., & Brocato, E. D. (2017). Parental restrictive mediation and children's violent video game play: The effectiveness of the entertainment software rating board (ESRB) rating system. *Journal of Public Policy & Marketing, 36*(1), 70-78. doi:10.1509/jppm.15.071

Markey, P. M. (2014). Video games and mental health. In H. Friedman (Ed.), *Encyclopedia of mental health*. Elsevier Ltd., Oxford, UK.

Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture, 4*(4), 277-295. doi:10.1037/ppm0000030

McCaffree, K., & Proctor, K. R. (2017). Cocooned from Crime: The relationship between video games and crime. *Society, 55*(1), 41-52. doi:10.1007/s12115-017-0211-0

Mccarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology, 67*, 13-19. doi:10.1016/j.jesp.2015.10.009

Olson, C. K., Kutner, L. A., & Warner, D. E. (2008). The role of violent video game content in adolescent development. *Journal of Adolescent Research, 23*(1), 55-75. doi:10.1177/0743558407310713

Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents aggressive behaviour: Evidence from a registered report. *Royal Society Open Science, 6*(2), 1-16. doi:10.1098/rsos.171474

Saunders, K. W. (2013). A comparative look at children and free expression. *Transnational Law & Contemporary Problems, 2*(1), 445-510. doi:10.1017/9781316771129.012

Shao, R., & Wang, Y. (2019). The relation of violent video games to adolescent aggression: An examination of moderated mediation effect. *Frontiers in Psychology, 10*, 1-9. doi:10.3389/fpsyg.2019.00384

Shibuya, A., Sakamoto, A., Ihori, N., & Yukawa, S. (2008). The effects of the presence and contexts of video game violence on children: A longitudinal study in Japan. *Simulation & Gaming*, *39*(4), 528–539. doi:10.1177/1046878107306670

Staude-Müller, F., Bliesener, T., & Luthman, S. (2008). Hostile and hardened? An experimental study on (de-) sensitization to violence and suffering though playing video games. *Swiss Journal of Psychology*, 67(1), 41-50. doi:10.1024/1421-0185.67.1.41

Surette, R. (2012). Cause or catalyst: The interaction of real world and media crime models.*American Journal of Criminal Justice*, 38(3), 392-409. doi:10.1007/s12103-012-9177-z

The Amusements Act, 2005, C.C.S.M. c. A70. Retrieved from https://web2.gov.mb.ca/laws/statutes/ccsm/a070e.php

Theatres and Amusements Act, 2016, N.S. Reg. 259/2016, Retrieved from https://novascotia.ca/just/regulations/regs/taregs.htm

The Film and Video Classification Act, 2016, SS 2016, c F-13.21. Retrieved from https://www.canlii.org/en/sk/laws/stat/ss-2016-c-f-13.21/latest/ss-2016-c-f-13.21.html

Walsh, D. A., & Gentile, D. A. (2001). A validity test of movie, television, and video-game ratings. *Pediatrics, 107*(6), 1302-1308. doi:10.1542/peds.107.6.1302

Ward, M. R. (2011). Video games and crime. *SSRN Electronic Journal, 29*(2), 261-273. doi:10.2139/ssrn.1021452

Willoughby, T., Adachi, P. J., & Good, M. (2012). A longitudinal study of the association between violent video game play and aggression among adolescents. *Developmental Psychology, 48*(4), 1044-1057. doi:10.1037/a0026046

Yang, G.S., Huesmann, L. R., & Bushman, B. J. (2014). Effects of playing a violent video game as male versus female avatar on subsequent aggression in

male and female players. *Aggressive Behavior, 9999*, 1-5. doi:10.1002/ab.21551

Zhu, J., Zhang, W., Yu, C., & Bao, Z. (2015). Early adolescent internet game addiction in context: How parents, school, and peers impact youth. *Computers in Human Behavior, 50*, 159-168. doi:10.1016/j.chb.2015.03.079