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**THESIS**

**VIDEO GAMING AND BEHAVIORAL DISORDERS  
ASSOCIATED WITH MASS SHOOTINGS**

by

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September 2020

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**VIDEO GAMING AND BEHAVIORAL DISORDERS ASSOCIATED WITH  
MASS SHOOTINGS**

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## **ABSTRACT**

The recent aftermath of mass shootings in the United States has caused some experts, as well as President Donald Trump, to speculate that a link may exist between violent acts and video gaming. Mass shootings have become a severe problem in America. The National Institute of Justice research has shown that 20 percent of all public mass shootings in the U.S. have occurred between 2014 and 2019. This thesis examines the effects of video gaming on mental health and the link between violent video games and mass shootings, and offers skeptical views by other experts who argue no link exists between mass shootings and video games. Factors associated with violence involving video games and the gamers' behavior may explain what inspires the mass shooters. Although not all video gamers become violent, this thesis contends it is likely individuals with underlying conditions may be vulnerable to committing violent acts by developing internet gaming disorder (IGD).

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## LIST OF ACRONYMS AND ABBREVIATIONS

AAP	American Academy of Pediatrics
ADHD	attention-deficit/hyperactivity disorder
APA	American Psychological Association
CHDS	Center for Homeland Defense and Security
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
DSM-6	Diagnostic and Statistical Manual, Sixth Edition
ESA	Entertainment Software Association
FBI	Federal Bureau of Investigation
FCC	Federal Communication Commission
IGD	internet gaming disorder
MMOG	massively multiplayer online games
MMORPG	massively multiplayer online role-playing game
MSD	Marjory Stoneman Douglas
NES	Nintendo Entertainment System
NIJ	National Institute of Justice
PDD	pervasive developmental disorder
PS4	Playstation 4
RPG	role-playing games
SEGA	Sega Genesis
VRD	virtual reality devices
WoW	World of Warcraft

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## **I. VIDEO GAMING AND BEHAVIORAL DISORDERS ASSOCIATED WITH MASS SHOOTINGS**

In the aftermath of recent mass shooting events, some experts as well as President Trump have speculated that a link may exist between mass shootings and violent video games. However, other experts have argued that a link does not appear to exist between the two. Lately, in the wake of mass shootings and other incidents, the media has focused a lot of attention on the video game industry. The question has become whether exposure to brutal video games correlates to aggression in children and young adults. This thesis examines the following questions: How significantly, if at all, do violent video games influence children and young adults, and do they make it more likely that those who play them will become aggressive and even carry out mass shootings or other attacks?

### **A. SIGNIFICANCE OF THE RESEARCH QUESTION**

Mass shootings are becoming an increasingly severe problem in this country. The National Institute of Justice (NIJ) funded research into all of the public mass shootings—some 164 by NIJ’s count—that have occurred since 1966 in the United States. A 2019 NIJ study showed that 20 percent of these mass shootings occurred in the most recent five-year span under review, from 2014–2019.<sup>1</sup> In addition, even within this five-year period, a further increase in mass shootings occurred between 2017 and 2019, including five weeks between August and September 2019 that saw 38 public mass shootings.<sup>2</sup>

Among others, President Trump has blamed video games as a significant influence on mass shootings, saying “We have to look at the internet because a lot of bad things are happening to young kids and young minds, and their minds are being formed.”<sup>3</sup> Several

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<sup>1</sup> James Densley and Jillian Peterson, “Opinion: We Analyzed 53 Years of Mass Shooting Data. Attacks Aren’t Just Increasing, They’re Getting Deadlier,” *Los Angeles Times*, September 1, 2019, <https://www.latimes.com/opinion/story/2019-09-01/mass-shooting-data-odessa-midland-increase>.

<sup>2</sup> Densley and Peterson.

<sup>3</sup> “Trump Worried over Violent Video Games Shaping Young Minds,” *RTTNews*, February 2018, Proquest.

recent mass shooters have been identified as serious video gamers, including the Florida shooter Nikolas Cruz, who killed 17 people in Parkland, Florida, and was reported to have had an “infatuation” with video gaming.<sup>4</sup> Similarly, James Holmes, who killed 12 people at a movie theater in Aurora, Colorado, in 2012, was known to play *World of Warcraft* (WoW).<sup>5</sup>

Not all mass shooters, however, appear to have been influenced by video games. For example, a manifesto by Patrick Crusius, who killed 22 people at a Walmart in El Paso in August 2019, did not point to video games as the culprit.<sup>6</sup> Instead, he blamed the system of migration and interracial relationships amid broad references to the extremist alt-right theory of ethnic “replacement.”<sup>7</sup> Such material is widely available online, including books sold on Amazon.<sup>8</sup> Some experts who have studied the problem have found that video gaming poses no threat and that engaging in video gaming can lead to increased social and cognitive benefits for young people.<sup>9</sup>

Research also has been conducted on the impact of video gaming on national security. Keaton Kovatch, for example, studied the effect of video gaming on the U.S. Armed Forces and found it had a generally positive impact in the areas of recruitment and training.<sup>10</sup> Less studied is the connection between mass shootings and video gaming since

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<sup>4</sup> Megan O’Matz and Brittany Wallman, “A Mass Murderer’s Digital Trail: Nikolas Cruz Dropped Crumbs All across the World Wide Web,” *TCA Regional News, Chicago*, 2, October 27, 2018, Proquest.

<sup>5</sup> Pat Elder, “Target Practice,” *The Humanist; Washington, D.C.* 78, no. 4 (August 2018): 8, Proquest.

<sup>6</sup> Abutaleb Yasmineen, “‘What’s Inside the Hate-Filled Manifesto Linked to the Alleged El Paso Shooter (Suspect Patrick Crusius),’” *The Washington Post*, August 4, 2019, <https://www.washingtonpost.com/politics/2019/08/04/whats-inside-hate-filled-manifesto-linked-el-paso-shooter/>.

<sup>7</sup> Forest Cullings, “Alt-Right Influence on the Radicalization of White Nationalists in the United States, According to Significance Quest Theory” (master’s thesis, Naval Postgraduate School, 2020), 30.

<sup>8</sup> Cullings, 30.

<sup>9</sup> Andrew K. Przybylski and Netta Weinstein, “Violent Video Game Engagement Is Not Associated with Adolescents’ Aggressive Behaviour: Evidence from a Registered Report,” *The Royal Society Publishing* 6, no. 2 (January 18, 2019): 1, <https://dx.doi.org/10.6084/m9.figshare.c.4392665>.

<sup>10</sup> Keaton M. Kovatch, “Call to Duty: Video Game Effects on the Military” (master’s thesis, Naval Postgraduate School, 2018), 56, <http://hdl.handle.net/10945/60422>.

it appears that some shooters are susceptible to the influence of video gaming. This thesis seeks to add to the understanding of the problem.

## **B. LITERATURE REVIEW**

Many psychiatrists and other experts have examined both the positive and negative effects of video gaming. This literature review examines published research and expert opinion regarding whether video gaming can be linked to recent mass shooting events. It first reviews the work of scholars who argue that excessive video gaming can pose or create mental health problems for young people, including what is known as internet gaming disorder (IGD). The second section reviews work that suggests violent video games can have an even more extreme effect by encouraging young people to commit mass shootings and other types of violent, real-life attacks. The third section reviews the arguments of dissenting experts, who believe that the link between violent video games and real-life violence is unproven, or even that video games can have a beneficial effect on young people.

### **1. Video Games and Mental Health**

The American Psychiatric Association (APA) has recently added IGD as a potential diagnosis.<sup>11</sup> This disorder is defined as “persistent and recurrent use of the Internet to engage in games, often with other players, leading to clinically significant impairment or distress.”<sup>12</sup> The APA found that individuals who reveal symptoms of online addictions might exhibit signs of addiction offline as well.<sup>13</sup> Online role-playing is often also reported as addicting, and experts have linked video games and psychological problems.<sup>14</sup> Other experts who have studied the adverse effects of video games include Wendy Feng, Danielle

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<sup>11</sup> Douglas A. Gentile et al., “Internet Gaming Disorder in Children and Adolescents,” *American Academy of Pediatrics* 140 (Supplement 2) (April 19, 2017): S82, <https://doi.org/10.1542/peds.2016-1758H>.

<sup>12</sup> Gentile et al., S82.

<sup>13</sup> Gentile et al., S82.

<sup>14</sup> Gentile et al., S82.

Ramo, Steven Chan, and James Bourgeois. These experts have attempted to measure the phenomenon of IGD to determine whether the disorder has changed with time as video gaming has expanded with the broader access available today to internet gaming. They found that underlying psychological or social needs driving distinct behaviors could play a part in potentially developing IGD and that those separate behaviors might all be related.<sup>15</sup>

## 2. Violent Video Games and Mass Shootings

Some experts argue that a link exists between violent video games and increased aggression, including an increased tendency to commit mass shootings. The APA Task Force on Violent Media, for example, notes, “The research demonstrates a consistent relation between violent video game use and increases in aggressive behavior, aggressive cognitions, and aggressive affect, and decreases in prosocial behavior, empathy and sensitivity to aggression.”<sup>16</sup> Many reports have noted that several mass shooters, such as Columbine High School shooters Eric Harris and Dylan Klebold, were known to play violent video games. Pat Elder, for example, wrote that “the murderers in the Columbine High School massacre, [sic] were avid gamers. In the video Harris and Klebold made, Harris says the shooting would ‘be like [expletive] Doom’ and shortly after that described his sawed-off shotgun as being straight out of the game.”<sup>17</sup>

Noah Adams interviewed a former classmate of Harris and Klebold who reported, “Some of the video games they played on the computer were, I guess, kind of death-based, but I guess some people look at it as a form of entertainment, and being so good with computers and maybe knowing the games, they may be read into the game a little bit more

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<sup>15</sup> Wendy Feng et al., “Internet Gaming Disorder: Trends in Prevalence 1998–2016,” *U.S. National Library of Medicine National Institutes of Health*, vol. 75 (June 16, 2017): 21, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5582011/>.

<sup>16</sup> Mark Appelbaum et al., *Technical Report on the Review of the Violent Video Game Literature* (Washington, DC: APA Task Force on Violent Media Online Gaming: Demographics, Motivations, and Information Processing, 2015), 11, <https://www.apa.org/pi/families/review-video-games.pdf>.

<sup>17</sup> Elder, “Target Practice,” 24.

than they should have.”<sup>18</sup> A psychiatric report from 2014 about Cruz, stated, “Nikolas spends most of his time alone playing his Xbox.”<sup>19</sup> Moreover, a family counselor noted that Nikolas would repeat the lines, “die, die, die” from his *Call of Duty* game.<sup>20</sup>

### 3. Mass Shootings, but No Link to Violent Video Games

Other experts, on the other hand, argue that insufficient evidence exists to suggest that violent video games lead to mass shootings and other forms of violence. Christopher J. Ferguson, for example, writes, “studies have been inconsistent and some scholars have suggested that the studies themselves may be influenced by societal narratives regarding media effects.”<sup>21</sup> Ferguson points to research indicating that violent content does not match well with real-life exposure.<sup>22</sup> A part of his study suggests ways to examine the issue concerning youth and violence; according to Ferguson, “Youth are often conceptualized as being particularly vulnerable to media effects, relative to older populations.”<sup>23</sup> Ferguson explains that young people are most likely to consume such new media as videogames. Similarly, Andrew K. Przybylski and Netta Weinstein investigated youth playing violent video games and the levels of aggressive behavior compared to others who do not spend time playing violent video games.<sup>24</sup> Their study found that violent video gaming did not appear to be related to aggressive behavior or mass shooting events in young people.<sup>25</sup>

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<sup>18</sup> Noah Adams, *Profile: Eric Harris and Dylan Klebold, Columbine High School Shooters* (Washington, DC: NPR, 1999), 1, Proquest.

<sup>19</sup> O’Matz and Wallman, “A Mass Murderer’s Digital Trail,” 2.

<sup>20</sup> Cindy Krischer Goodman, “Gamers and Mass Shooters: Do Violent Video Games Really Make a Person More Aggressive?,” *South Florida Sun Sentinel*, August 9, 2019, <https://www.sun-sentinel.com/health/fl-ne-video-games-20190809-oojdsuosojesrihtrzvjdjnjou-story.html>.

<sup>21</sup> Christopher J. Ferguson, “Does Media Violence Predict Societal Violence? It Depends on What You Look at and When,” *Journal of Communication* 65, no. 1 (February 2015): E2, <https://doi.org/10.1111/JCOM.12129>.

<sup>22</sup> Ferguson, E2.

<sup>23</sup> Ferguson, E10.

<sup>24</sup> Przybylski and Weinstein, “Violent Video Game Engagement Is Not Associated with Adolescents’ Aggressive Behaviour,” 1.

<sup>25</sup> Przybylski and Weinstein, 12.

The Entertainment Software Association (ESA) has responded to reports linking violence to video games by stating, “Video games positively contribute to society, from new medical therapies and advancements, educational tools, business innovation, and more. Video games help players connect with family and friends, relieve stress, and have fun.”<sup>26</sup> The ESA also publicly announced on its website, “There is no question that our society has endured far too many tragic incidents of violence. These horrific acts understandably drive us to look for solutions. But blaming the media—and video games in particular—distracts from the underlying issues at play and tarnishes the incredibly positive impact video games have in our society.”<sup>27</sup>

### **C. POTENTIAL EXPLANATIONS AND HYPOTHESES**

This thesis hypothesizes that young men who suffer from such underlying conditions as anxiety, depression, social isolation, and schizophrenia, and who become obsessed with violent video games, are more likely to become violent and aggressive; rarely, but tragically to the point of planning or carrying out mass shootings or other types of attacks. Factors associated with violence involving video games and the gamers’ behavior may explain what inspired the shooter or set the shooter off. Although not all video gamers may become violent, it is likely that individuals with underlying conditions may become more susceptible to committing violent acts because of developing IGD. This thesis suggests that although not all young men who play violent video games are prone to aggression in the real world, several factors may help explain why some gamers are more susceptible to violence than others are. Thus, they may be more likely to commit mass shootings or other violent crimes.

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<sup>26</sup> Goodman, “Gamers and Mass Shooters,” 2.

<sup>27</sup> Stanley Pierre-Louis, “ESA Leadership Desk: Science Says Video Games Don’t Cause Real-World Violence,” Entertainment Software Association, 2020, <https://www.theesa.com/perspectives/esa-leadership-desk-science-says-video-games-dont-cause-real-world-violence/>.

#### **D. RESEARCH DESIGN**

This thesis examines four case studies of young males who have conducted mass shootings, and who have been identified in the media as having been violent video game players. For each case study, this thesis examines the background, environment, psychological states, social interactions, education, and emotional triggers of the shooters, and if their interactions with video gaming had influenced them to commit a mass shooting. Criteria drawn from the APA's analysis of IGD and traits drawn from a Federal Bureau of Investigation (FBI) study of school shooters are presented to determine a possible link between violent video games and mass shootings. These criteria are applied to the four specific cases selected due to their alleged association to violent video games. The research seeks to determine whether video gaming appears to have been a factor, whether the individual had suffered from underlying conditions that may have contributed to the problem, or whether video gaming may have had a significant impact even in the absence of other contributing factors.

#### **E. THESIS OUTLINE**

Following this introduction, Chapter II examines the history of video games and the evolution of violent video games. The chapter also examines which games are played, why violence sells, and the history of the outrage and fear of video games. Chapter III presents two frameworks, one from the APA regarding IGD and one from FBI's *School Shooter: A Threat Assessment Perspective*, which identify indicators and traits of mass shooters. Both frameworks are analyzed and applied to case studies in Chapter IV, in which four widely publicized mass school shootings where video games were presumed a factor in contributing to the resulting violence and death are examined. Lastly, Chapter V provides the findings and conclusion.

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## II. VIDEO GAMES AND VIOLENCE

This chapter examines how violence in video games has evolved over the years, and demonstrates that violence indeed sells. To support this analysis, this chapter is organized into three sections. The first section reviews the history of video games and illustrates that violence has been an essential part of video games, nearly from the start of the industry. The second section examines one of the most popular and most violent types of video games, the massively multiplayer online role-playing game (MMORPG). Many mass shooters have played these kinds of games. The final section reviews the most popular video games today and demonstrates that although not all games are violent, the five most popular games are among the most violent on the market.

### A. THE HISTORY OF VIDEO GAMING

In 1958, William Higinbotham, an American physicist who had contributed to the creation of the atomic bomb during World War II,<sup>28</sup> introduced one of the very first interactive video games to the public during a convention at the Brookhaven National Laboratories located in New York.<sup>29</sup> The game was called *Tennis for Two*, and Higinbotham invented it to show society that science has a place in the everyday world. Higinbotham stated that “it might liven up the place to have a game that people could play, and which would convey the message that our scientific endeavors have relevance for society.”<sup>30</sup> The game was played on an analog computer. It was controlled using two very big box-like controllers and two switches to move the ball.<sup>31</sup>

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<sup>28</sup> Ronald Sullivan, “William A. Higinbotham, 84; Helped Build First Atomic Bomb,” *New York Times*, November 15, 1994, <https://www.nytimes.com/1994/11/15/obituaries/william-a-higinbotham-84-helped-build-first-atomic-bomb.html?auth=linked-google1tap>.

<sup>29</sup> Roberto Dillon, *The Golden Age of Video Games* (Boca Raton, FL: CRC Press, 2016), 4, <https://doi-org.libproxy.nps.edu/10.1201/b10818>.

<sup>30</sup> Ernie Tretkoff, “October 1958: Physicist Invents First Video Game,” *American Physical Society* 17, no. 9 (October 2008), <https://www.aps.org/publications/apsnews/200810/physicshistory.cfm>.

<sup>31</sup> William Hunter, “Tennis for Two—The Original Video Game,” September 10, 2017, YouTube, video, 0:59, [https://www.youtube.com/watch?v=6PG2mdU\\_i8k](https://www.youtube.com/watch?v=6PG2mdU_i8k).

Higinbotham had no idea how popular video gaming would become. Since *Tennis for Two*, video gaming has become a worldwide pastime, and for some, a primary source of entertainment.<sup>32</sup> Video gaming allows users to control and navigate through a virtual world created to provide the most thrilling experience.

Among the first video games—and the first video game to be played at home on the TV—*Computer Space* was developed in 1969 by Nolan Bushnell, an engineering student at the University of Utah, and his colleague Ted Dabney.<sup>33</sup> The gameplay involved a rocket ship on a mission to destroy a computer-controlled saucer.<sup>34</sup> Dillon noted, “Once time was up, the player would see how many times he successfully hit the saucer and whether or not he scored more hits than the computer did.”<sup>35</sup> *Computer Space* became the first gameplay to provide gamers with a virtual first-person shooter experience.

In 1976, the first violent video game was released, an auto-racing game called *Death Race*. Unlike *Computer Space*, it was not played on a home TV; *Death Race* was an arcade game accessible to the general public and offered a more intense, immersive experience. Not long after *Death Race* debuted, it soon became the first violent video game to be recalled due to its symbolic acts of violence. *Death Race* involved running over “gremlins,” which were little analog pixel-generated characters, to earn points throughout the game.<sup>36</sup> Gaming historian Steve L. Kent stated that, “what got everyone upset about *Death Race* was that you heard this little ‘ahhkh’ when the person got hit, and a little gravestone came up.”<sup>37</sup> Eventually, manufacturers of the game recalled their video

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<sup>32</sup> Limelight Networks, *The State of Online Gaming—2019* (Scottsdale, AZ: Limelight Networks, 2019), 3, [https://img03.en25.com/Web/LLNW/%7B02ca9602-173c-43a4-9ee1-b8980c1ea459%7D\\_SOOG2019\\_MR\\_8.5x11.pdf](https://img03.en25.com/Web/LLNW/%7B02ca9602-173c-43a4-9ee1-b8980c1ea459%7D_SOOG2019_MR_8.5x11.pdf).

<sup>33</sup> Dillon, *The Golden Age of Video Games*, 8.

<sup>34</sup> Dillon, 9.

<sup>35</sup> Dillon, 9.

<sup>36</sup> Xavier Auberon, “XA Gaming | Death Race | Arcade,” August 9, 2019, YouTube, video, 4:24, <https://www.youtube.com/watch?v=EiEFZX5Co7U>.

<sup>37</sup> “A Timeline of Video Game Controversies,” National Coalition against Censorship, 2019, <https://ncac.org/resource/a-timeline-of-video-game-controversies>.

machines.<sup>38</sup> However, the fate of *Death Race* did not deter other violent video games from emerging.

In the 1990s, as violent video games began to push the boundaries of the socially acceptable, one-on-one fighting games began to emerge.<sup>39</sup> Such bestsellers as *Double Dragon* and *Mortal Kombat* paved the way for Nintendo Entertainment System (NES) to become the market leader during the late 1980s and early 1990s.<sup>40</sup> However, Acclaim, the developer of *Mortal Kombat*, owned the distribution rights to the game and subsequently chose to distribute it to both NES and Sega Genesis (SEGA) so it could be played on both video game systems. Soon, SEGA sold a different version of *Mortal Kombat* to compete with NES.<sup>41</sup>

*Mortal Kombat* is a fighting game that can be played player against player, or against the computer when on tournament mode. The original gameplay featured characters who specialized in unique combinations of violent moves capable of producing graphic scenes of violence. The video gamer uses the controller to initiate the character's fighting abilities, and in the event the video gamer comes close to defeating the opponent, the words "FINISH HIM" or "FINISH HER" appear. When "FINISH HIM/HER" appears, the gamer can potentially use a combination of special moves to receive extra "fatality" points.<sup>42</sup>

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<sup>38</sup> Ralph Blumenthal, "Death Race," *New York Times*, December 28, 1976, <https://www.nytimes.com/1976/12/28/archives/death-race-game-gains-favor-but-not-with-the-safety-council.html>.

<sup>39</sup> Craig A. Anderson, Douglas A. Gentile, and Katherine E. Buckley, *Violent Video Game Effects on Children and Adolescents: Theory, Research, and Public Policy* (Oxford, England: Oxford University Press, 2007), 5.

<sup>40</sup> Anderson, Gentile, and Buckley, 5.

<sup>41</sup> Damien McFerran, "Feature: How Mortal Kombat Defined the Console War between Sega and Nintendo," Nintendo, December 29, 2018, [https://www.nintendolife.com/news/2018/12/feature\\_how\\_mortal\\_kombat\\_defined\\_the\\_console\\_war\\_between\\_seg\\_and\\_nintendo](https://www.nintendolife.com/news/2018/12/feature_how_mortal_kombat_defined_the_console_war_between_seg_and_nintendo).

<sup>42</sup> "The Top 20 Fatalities in Mortal Kombat History," November 26, 2018, YouTube, video, 6:57, <https://www.youtube.com/watch?v=vrGodH-tnos>.

The NES version of *Mortal Kombat* was “toned down.”<sup>43</sup> It adhered to its standards of “no excessive blood and violence” and “no sex.”<sup>44</sup> However, the SEGA version, which allowed for blood and gore, ultimately outsold the Nintendo version three to one. Nintendo’s decision to lower the level of violence in its gameplay resulted in the company’s declining influence in the market.<sup>45</sup> As Craig Anderson, Douglas Gentile, and Katherine Buckley wrote, “Gradually it became clear that games sold better if they contained more violence.”<sup>46</sup>

*Wolfenstein 3D*, the first dominant first-person shooter game, was released in 1992 and provided the gamer a realistic approach to virtually seeing the game through the gamer’s character, as opposed to watching the character move from afar.<sup>47</sup> In *Wolfenstein 3D*, the video gamer navigates through the game and shoots at targets as they appear. Nazi symbols appear throughout the gameplay and some of the characters utter phrases in German prior to shooting back at the gamer.<sup>48</sup> According to Anderson, Gentile, and Buckley, “The effect is to make the game player feel as though he or she is in the game and is the one fighting, killing, and being killed.”<sup>49</sup> With the commercial success of *Wolfenstein 3D*, other game manufacturers began to incorporate violent shooter games, and as violent video games became accessible to the public, the gaming industry continued to incorporate increasing amounts of blood and gore.<sup>50</sup>

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<sup>43</sup> Anderson, Gentile, and Buckley, *Violent Video Game Effects on Children and Adolescents*, 5.

<sup>44</sup> Steven L. Kent, *The Ultimate History of Video Games*, vol. 2 (New York: Crown, 2010), 465.

<sup>45</sup> Anderson, Gentile, and Buckley, *Violent Video Game Effects on Children and Adolescents*, 5.

<sup>46</sup> Anderson, Gentile, and Buckley, 5.

<sup>47</sup> Anderson, Gentile, and Buckley, 5.

<sup>48</sup> “Wolfenstein 3D Trailer,” October 23, 2014, YouTube, video, 1:01, [https://www.youtube.com/watch?v=7P\\_dic-pSKo](https://www.youtube.com/watch?v=7P_dic-pSKo).

<sup>49</sup> Anderson, Gentile, and Buckley, *Violent Video Game Effects on Children and Adolescents*, 6.

<sup>50</sup> Michael Hitchens, “A Survey of First-Person Shooters and Their Avatars,” *The International Journal of Computer Game Research* 11, no. 3 (December 2011), [http://gamestudies.org/1103/articles/michael\\_hitchens](http://gamestudies.org/1103/articles/michael_hitchens).

Video games became more public through gaming consoles, which then resulted in a greater market share for in-house gaming consoles. Gaming consoles have evolved from standalone consoles played by one person at home, to games that can be played by two players at the same time, to games played online by multiple players. Multiplayer games are arguably the most-played online games. Online multiplayer games have been referred to as MMORPG.<sup>51</sup> Nick Yee defines MMORPG as depicting “a persistent world... that exists independent of the user.”<sup>52</sup> In this world, avatars and virtual environments are the norms and a home to which online gamers can return. Vincent Cicchirillo explains, “Users can login or logout anytime, but the world still exists online and is open to numerous users.”<sup>53</sup>

## **B. HOW MMORPG’S / ONLINE VIDEO GAMING WORKS**

The latest development in games today is the creation of vast online worlds in which some players—often young men—spend a great deal of their time. This section examines these online gaming worlds and the effect they have on players. MMORPGs are most closely associated with violence, and research by Cicchirillo and others indicates that mass shooters have spent a lot of time playing these types of games.

WoW is the first MMORPG to gain more than a million subscribers. According to Cicchirillo, by 2010, WoW averaged about nine million subscribers.<sup>54</sup> To date, WoW is still popular across generations of video game players. The amount of violence that appears in WoW is dependent on the video gamers’ preferences as different classes of characters can be selected, and each class of characters yields different types of weapons from which to choose, ranging from magic, to swords, or guns. Additionally, players can choose game

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<sup>51</sup> Vincent Cicchirillo, “Online Gaming: Demographics, Motivations, and Information Processing,” in *Handbook of Research on Digital Media and Advertising: User Generated Content Consumption*, ed. Matthew S. Eastin, Terry Daugherty, and Neal M. Burns (Hershey, PA: IGI Global, 2011), 457, <http://doi:10.4018/978-1-60566-792-8.ch023>.

<sup>52</sup> Quoted in Cicchirillo, 457.

<sup>53</sup> Cicchirillo, 457.

<sup>54</sup> Cicchirillo, 456.

realms or various servers that can set combat rules to use within the gameplay. The focus can be on defeating monsters and completing quests, or playing against opponents in a player's environment versus one determined and generated by the server itself.<sup>55</sup>

Most MMORPGs require monthly subscriptions ranging between \$10 and \$15, which provide user access to central servers. These servers expand gameplay and enable users to create avatars as representations of themselves in the 3D virtual world while interacting with other gamers in the environment of the gameplay.<sup>56</sup> Social interactions within the gameplay can occur through chat rooms, animated gestures, and expressions. Yee states, "It typically takes several hours to traverse the entire world of an MMORPG, although different types of transportation are available to teleport users to different locations in the world."<sup>57</sup> The users, therefore, invest time in navigating through the virtual gameplay, building technique or strategy, and creating or editing the appearance of their avatars.

The type of personal financial investment that goes into MMORPGs is also invested in other massively multiplayer online games (MMOG). For example, *Fortnite*, developed by Epic Games, is purely online gameplay that can be played on most video gaming consoles, including Playstation 4 (PS4), Xbox, and PCs; thus, video game players are not limited to just one console choice. *Fortnite* offers cooperative gameplay for up to four players and focuses on saving the world from the zombie-like creatures, as well as defending objects by building fortifications. Users playing *Fortnite* have the option of free gameplay, and financial investments only occur when customizing characters, weapons, and transportation devices. Communication between users is available between teammates or within an open chat option. Unlike *WoW*, *Fortnite* does not require a subscription;

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<sup>55</sup> "World of Warcraft Shadowlands—Official Gameplay Overview Trailer | Blizzcon 2019," November 1, 2019, YouTube, video, 2:16, <https://www.youtube.com/watch?v=0j9FblQUzQU>.

<sup>56</sup> Nick Yee, "The Psychology of Massively Multi-User Online Role-Playing Games: Motivations, Emotional Investment, Relationships and Problematic Usage," in *Avatars at Work and Play. Computer Supported Cooperative Work*, ed. Ralph Schroeder and Ann-Sofie Axelsson, vol. 34 (Berlin/Heidelberg, Germany: Springer, Dordrecht, 2006), 189, [https://doi.org/10.1007/1-4020-3898-4\\_9189](https://doi.org/10.1007/1-4020-3898-4_9189).

<sup>57</sup> Yee, 189.

however, annual (or seasonal) “battle passes” are available, which range from \$30 to \$40 and can be used to customize weapons or characters. Similar to *WoW*, *Fortnite* has some forms of violence, but the gameplay is considered safe for ages 10 and older.

To understand the motivations behind playing online video games better, Cicchirillo identifies aspects that differentiate MMORPGs from other online games: (1) persistence, (2) physicality, (3) social interactions and avatar-mediated play, (4) vertical gameplay, and perpetuity.<sup>58</sup> Different aspects of gameplay can determine how individuals relate to a reality beyond their real world. Therefore, online video games give them the opportunity to live in that reality. Furthermore, once motivation is understood, it is then possible to ascertain clearly how individuals process information during a gameplay.<sup>59</sup>

### **1. Persistence**

Cicchirillo attributes the persistence of an MMORPG to “the fact that the ‘virtual world,’ users inhabit exists continuously, whether or not that player is logged in or not.”<sup>60</sup> Furthermore, Cicchirillo explains that the aspect of *persistence* may motivate online gamers by providing an experience that resembles real-world consistency. He states, “players of online games may [desire] to escape the real world into a fantasy world, but still require a level of consistency or persistence that real worlds or environments provide.”<sup>61</sup> Cicchirillo concludes that another form of *persistence* relates to the gamer’s avatar, which is an identity or personality that the user maintains throughout the game:

Although, an individual’s avatar may increase in abilities (e.g. physical, magical, stamina, etc...), they generally keep the same contacts and personal characteristics. A player’s avatar is an important aspect of an online game. As will be discussed, individuals do not just spend time

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<sup>58</sup> Cicchirillo, “Online Gaming,” 458–59.

<sup>59</sup> Cicchirillo, 457.

<sup>60</sup> Cicchirillo, 459.

<sup>61</sup> Cicchirillo, 459.

advancing or enhancing their avatars, they spend money on enhancements for that avatar.<sup>62</sup>

## **2. Physicality**

The physicality of the gameplay represents the environment and objects within the 3D graphical environment.<sup>63</sup> In MMORPGs and other role-playing games (RPGs), the gamer interacts with virtual objects by moving the object or acquiring an item, such as a gun or shield. For example, Cicchirillo explains, “Individuals in the World of WarCraft [sic] can buy or trade for objects such as weapons, shields, potions, and even reputations.”<sup>64</sup> Money collected through the virtual world is used as a means to obtain health, powerful abilities, and other items, which are then used to survive during the game. Cicchirillo points out that the virtual commerce of these type of games provides users not only satisfaction but also the opportunity for economic gains.<sup>65</sup> He suggests, “This may also add a different kind of motivation that has not been considered by researchers.”<sup>66</sup>

## **3. Social Interactions and Avatar-mediated Play**

The *social interactions* and *avatar-mediated play* within MMORPGs is a specific characteristic that drives interaction between players. Since so many users can play online around the world at any time, players can then interact with each other much more extensively and exchange personal information or collaborate.<sup>67</sup> Cole and Griffith researched the social interactions between players and discovered that the interaction between players facilitates the development of friendships, both online and offline:

The study showed MMORPGs can be extremely social games, with high percentages of gamers making life-long friends and partners. It was concluded that virtual gaming may allow players to express themselves in

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<sup>62</sup> Cicchirillo, 459.

<sup>63</sup> Cicchirillo, 459.

<sup>64</sup> Cicchirillo, 459.

<sup>65</sup> Cicchirillo, 459.

<sup>66</sup> Cicchirillo, 459.

<sup>67</sup> Cicchirillo, 459.

ways they may not feel comfortable doing in real life because of their appearance, gender, sexuality, and/or age. MMORPGs also offer a place where teamwork, encouragement, and fun can be experienced.<sup>68</sup>

*Avatar-mediated play* is defined as a characteristic in which players develop an identity within the game. Cicchirillo describes the *avatar-mediated play* as a way to experience life as another person with different characteristics and personality traits.<sup>69</sup>

#### 4. Vertical Gameplay and Perpetuity

Several researchers have identified vertical gameplay and perpetuity as key aspects of MMOG. For example, Elaine Chan and Peter Vorderer have defined *vertical gameplay* and *perpetuity* as characteristics that belong to MMOG.<sup>70</sup> According to Zaheer Hussain and Mark Griffiths, *vertical gameplay* is how players perceive their progression throughout the game.<sup>71</sup> Cicchirillo explains that online games are never-ending virtual worlds and therefore have “no end or final completion to that game (*perpetuity*).”<sup>72</sup> Thus, because the game does not end per se, attachments to the game or virtual world exist in everyday use and avatar development.

### C. WHICH GAMES ARE PLAYED AND WHY VIOLENCE SELLS

Today’s top gaming consoles, such as Playstation and Microsoft’s Xbox, have emerged with capabilities to provide gamers faster and more graphic gameplays.<sup>73</sup> Playstation and Microsoft’s Xbox continue to evolve their consoles to deliver the most

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<sup>68</sup> Helena Cole and Mark D. Griffith, “Social Interactions in Massively Multiplayer Online Role-Playing Gamers,” *CyberPsychology & Behavior* 10, no. 4 (August 21, 2007): 608, <https://doi.org/10.1089/cpb.2007.9988>.

<sup>69</sup> Cicchirillo, “Online Gaming,” 459–60.

<sup>70</sup> Elaine Chan and Peter Vorderer, “Massively Multiplay Online Game,” in *Playing Video Games: Motives, Responses, and Consequences*, ed. Peter Vorderer and Jennings Bryant (Mahwah, NJ: Lawrence Erlbaum Associates Publishers, 2006), 181–94.

<sup>71</sup> Zaheer Hussain and Mark D. Griffiths, “Excessive Use of Massively Multi-Player Online Role-Playing Games: A Pilot Study,” *International Journal of Mental Health and Addiction* 7, no. 563 (February 20, 2009): 563–571, <https://doi.org/10.1007/s11469-009-9202-8>.

<sup>72</sup> Cicchirillo, “Online Gaming,” 460.

<sup>73</sup> Anderson, Gentile, and Buckley, *Violent Video Game Effects on Children and Adolescents*, 6.

explicit, most realistic video gaming experience, and that experience encourages players to spend more time gaming. Marketing research company Limelight Networks reported on gaming use in 2018, noting, “People who play video games spend an average of seven hours seven minutes each week playing. Playing time has increased by 19.3 percent in the last year.”<sup>74</sup> Limelight Networks based its findings on surveys taken from third-party companies with access to consumer information worldwide.<sup>75</sup> Between January 25, 2019 and February 14, 2019, 500 responses were taken from each contributing country, which resulted in 4,500 global responses.<sup>76</sup>

*Forbes* listed the top five most popular video games in 2019 as *Call of Duty*, *NBA 2k20*, *Madden NFL 20*, *Borderlands 3*, and *Mortal Kombat*.<sup>77</sup> The common denominator between four of these top five video games (the only exception being *NBA 2k20*) is some form of violence. In the past decade, *Call of Duty*, a very violent first-person shooter video game, dominated the gaming industry.<sup>78</sup> Multiple titles of *Call of Duty* have been released every year since 2003. The games allow the players to advance through different war eras in a series of campaigns or to battle it out against human opponents in a multiplayer mode online.<sup>79</sup> The graphics in *Call of Duty* gives the gamers a realistic wartime experience through the eyes of being either American soldiers or their adversaries. Furthermore, to add to the physical experience, the players can adjust their controller settings to vibrate in the event of being shot at, shot, or stabbed. As of 2020, 16 titles of *Call of Duty* have been released. According to *Forbes*, “The best-selling games of 2010–2019 are largely

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<sup>74</sup> Limelight Networks, *The State of Online Gaming—2019*, 3.

<sup>75</sup> Limelight Networks, 32.

<sup>76</sup> Limelight Networks, 32.

<sup>77</sup> Erik Kain, “The 20 Best-Selling Video Games of 2019,” *Forbes*, January 17, 2020, <https://www.forbes.com/sites/erikkain/2020/01/17/the-20-best-selling-video-games-of-2019/#5ea099e973da>.

<sup>78</sup> Erik Kain, “‘Call of Duty’ Totally Dominated the 20 Best-Selling Video Games of the Decade,” *Forbes*, January 17, 2020, <https://www.forbes.com/sites/erikkain/2020/01/17/the-20-best-selling-video-games-of-the-decade/#18c74b56f6db>.

<sup>79</sup> “Call of Duty: Modern Warfare | Multiplayer Reveal Trailer,” August 1, 2019, YouTube, video, 3:02, <https://www.youtube.com/watch?v=J71vdq5E-fs>.

dominated by *Call of Duty* and *Rockstar*. *Call of Duty* titles makes up seven out of the top ten games of the decade, and fully half the top 20 [sic].”<sup>80</sup> The common trend in popular video games from the very start of the first-person shooter and today is the added amount of violence in games to make them attractive and marketable for people to buy. Without a doubt, when it comes to the number of games sold, in the video game industry, violence does sell.

The most popular of the MMORPGs previously mentioned is WoW. Christina Gough at the research department of Statista reported that “the number of copies of World of Warcraft expansion packs sold on the first day of worldwide distribution between 2007 and 2018. As of August 14, 2018, Battle for Azeroth is the fastest-selling WoW expansion of all time, with more than 3.4 million copies sold in one day.”<sup>81</sup> Magdan Cvitesic from *THEGAMER* reported WoW remains popular 15 years after being released, “From the moment the original servers were launched until today, the game has consistently been the greatest and most popular MMORPG in the world, and many players stuck around from the very beginning.”<sup>82</sup> Cvitesic reported the number one reason why the WoW has remained the most popular MMORPG is, “because it just feels so real.”<sup>83</sup> He further explains:

Now combine this with a complex, real-life economy where professions and services are exchanged for gold and items. In *World of Warcraft* you can be anything you want, and there are a myriad of captivating stories and small quirks integrated into the game, such as books, pets, or even alcohol to entertain you. Every zone has a different climate, wildlife, and characters

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<sup>80</sup> Kain, “‘Call of Duty’.”

<sup>81</sup> Christina Gough, “Global World of Warcraft Expansion Pack 1st Day Sales 2007–2018,” statista, September 6, 2019, <https://www.statista.com/statistics/370010/world-of-warcraft-expansion-pack-sales/#statisticContainer>.

<sup>82</sup> Magdan D. Cvitesic, “World of Warcraft: 10 Reasons this MMORPG Is Still Popular after 15 Years,” *THEGAMER*, December 1, 2019, <https://www.thegamer.com/world-warcraft-mmorpg-reasons-popular/>.

<sup>83</sup> Cvitesic.

that make you forget all your woes and emerge into the fantasy. And that's fine, as long as you give the real world a chance as well.<sup>84</sup>

MMORPG games sell because consumers enjoy the art of storytelling, mainly when the gamer can make choices significant to the gameplay. According to Bromann, "The motivation to engage in and enjoy video games corresponds with principles that apply to human motivation in general."<sup>85</sup>

#### **D. CONCLUSION**

This chapter examined the history of video gaming and demonstrated that violence has been closely associated with video games throughout their history. However, does a connection actually exist between the violence in these games, and violence in the real world? As described in the literature review in Chapter I, researchers have been concerned about that possible link from almost the beginning when video games were first created. Much of that work today has focused on a possible link between violent games and mass shootings. Chapter III looks more closely at the research on gaming and violence. Chapter III identifies a set of criteria and traits that are then applied in the following chapter, which reviews several case studies of mass shootings in which such a connection appears to exist.

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<sup>84</sup> Cvitesic.

<sup>85</sup> Daniel Bromann and Tobias Greitemeyer, "Why Do People Play Violent Video Games? Storytelling and Meaningful Choices May Play a Part," *SAGE Publications* 6, no. 6 (April 9, 2015): 646–652, <https://doi.org/10.1177/1948550615578177>.

### **III. FRAMEWORK FOR ANALYSIS**

This chapter presents two frameworks for analysis that are then applied to the case studies in Chapter IV to determine if violent video games are a contributing factor to mass school shootings. The first section discusses how the human mind responds to violent video games, and then introduces the psychological disorder IGD. It also identifies those symptoms, which according to the APA, may be indicators of IGD. The APA framework of IGD is used as a diagnostic measure to determine if video gaming influenced the shooters. The second section of this chapter focuses on the FBI monograph, *The School Shooter: A Threat Assessment Perspective*, which identifies specific types of behavior, personality traits, family circumstances, and the community environments that may have influenced a mass shooter. The FBI monograph assists in determining if other factors are a more prominent influence.

#### **A. INTERNET GAMING DISORDER**

The APA has studied how the human mind responds to video games and internet stimuli. This section offers a brief literature review and analysis of the debate regarding how the human mind responds to violent video games. This analysis, which includes the APA's identification of IGD, is followed by a list of behavioral criteria commonly associated with the disorder.

##### **1. How the Human Mind Responds**

The personality of a video gamer can determine whether video gaming itself can influence the user. Experts, such as Anthony Bean and Gary Groth-Marnat, have stated, "Personalities consist of complex interworkings that cause people to react differently to various environmental interactions and have shown to influence motivating factors of

[video game] play.”<sup>86</sup> They have concluded that when gamers frequently identify with violent role-playing games, they become prone to developing aggressive characteristics shortly after playing.<sup>87</sup>

As video gaming becomes an increasingly popular form of entertainment, how interaction with video gaming affects the brain is concerning. According to the APA, video gaming has the potential to become addictive to its users, and the American Academy of Pediatrics (AAP) has stated, “gaming can also increase some mental health problems.”<sup>88</sup> Experts have found that video-gaming addiction, also known as IGD, creates problems in youths that can then lead to depression and poor grades.<sup>89</sup> The APA advises that symptoms of gaming addiction can occur equally for both offline and online video gaming. Additionally, the APA notes that the loss of real-life interests in relationships, hobbies, and other sources of entertainment (except for games) is potentially a result of IGD.<sup>90</sup>

Research studies conducted by Anderson et al. reported harmful effects when video gamers have been exposed to violent video games.<sup>91</sup> Craig Anderson discovered that exposure to violent video games created higher levels of aggression associated with behavior, cognition, and effects, and physiological arousal and lower levels of prosocial behaviors.<sup>92</sup> The APA has concluded that violent video gaming is a risk factor for aggressive behavior.<sup>93</sup> The APA advises that “the public policy debate should move to

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<sup>86</sup> Anthony Bean and Gary Groth-Marnat, “Video Gamers and Personality: A Five-Factor Model to Understand Game Playing Style,” *Psychology of Popular Media Culture* 5, no. 1 (January 2016): 27, <https://doi.org/10.1037/ppm0000025>.

<sup>87</sup> Bean and Groth-Marnat, 28.

<sup>88</sup> American Academy of Pediatrics, “Video Gaming Can Lead to Mental Health Problems,” *American Academy of Pediatrics*, 2, January 17, 2011.

<sup>89</sup> American Academy of Pediatrics, 2.

<sup>90</sup> Gentile et al., “Internet Gaming Disorder in Children and Adolescents,” S82.

<sup>91</sup> Craig A. Anderson et al., “Violent Video Game Effects on Aggression, Empathy, and Prosocial Behavior in Eastern and Western Countries: A Meta-Analytic Review,” *Psychological Bulletin* 136, no. 2 (March 2010): 151, <http://dx.doi.org.libproxy.nps.edu/10.1037/a0018251>,

<sup>92</sup> Anderson et al., 151.

<sup>93</sup> Anderson et al., 151.

questions concerning how best to deal with this risk factor.”<sup>94</sup> Hanneke Polman, Bram Orobio de Castro, and Marcel van Aken have theorized “participant modeling is assumed” when a person is playing violent video games:

According to the social learning theory [Bandura, 1994], in playing a violent video game participant modeling is assumed, in which the person playing a video game virtually becomes the character of the video game [Schutte et al., 1988]. Owing to the direct control over the character’s behavior, a larger effect is expected for video game violence than for television violence. Moreover, violent video game players are directly rewarded for their acts of aggression in terms of an extra life, a musical interlude, or a high score. The reinforcing effects of aggression in violent video games may thus instigate the use of aggression in real life.<sup>95</sup>

However, Ferguson argues that research conducted shows no evidence of violent video games influencing real-life violence.<sup>96</sup> According to Ferguson, “The resultant aggressive behaviors are also outside a real-world context, in which the aggression appears to be sanctioned by the researchers themselves, who provide the opportunity for aggression.”<sup>97</sup> Additionally, entities that focus on psychology and neurodevelopmental disorders, such as the Department of Health Psychology at the University of Missouri, along with Thompson Center for Autism and Neurodevelopmental Disorders, have shown evidence that violent video games do not affect the user in any way.<sup>98</sup>

The argument as to whether violent video games influence violence or aggressive behavior has been an ongoing debate, and both sides can present data either to support the theory violent games influence users, or contradict it. Kovatch noted, “Neither side of the

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<sup>94</sup> Anderson et al., 151.

<sup>95</sup> Hanneke Polman, Bram Orobio de Castro, and Marcel A. G. van Aken, “Experimental Study of the Differential Effects of Playing versus Watching Violent Video Games on Children’s Aggressive Behavior,” *Wiley-Liss, Inc.* 34, no. 3 (2008): 256, <https://doi.org/10.1002/ab.20245>.

<sup>96</sup> Ferguson, “Does Media Violence Predict Societal Violence?,” E2.

<sup>97</sup> Ferguson, E2.

<sup>98</sup> Christopher R. Engelhardt et al., “Effects of Violent-Video-Game Exposure on Aggressive Behavior, Aggressive-Thought Accessibility, and Aggressive Affect among Adults with and without Autism Spectrum Disorder,” *SAGE Publications* 26, no. 8 (2015): 1187, <https://doi.org/10.1177/0956797615583038>.

argument has been able to produce viable evidence to dispute the others [sic] claims.”<sup>99</sup> Yet, enough evidence is available concerning said link to suggest further research is needed. The APA, for example, has stated the following regarding the connection between mental health issues:

There is growing empirical evidence that IGD is comorbid with several other disorders and mental health issues. Further longitudinal research examining comorbidities with anxiety, depression, and attention deficit/hyperactivity disorder is important and will clarify whether IGD is an independent disorder that should be included as a separate category in DSM-6 (Diagnostic and Statistical Manual, Sixth Edition), or whether it is best seen as a symptom of other conditions. The overlap of IGD with other addictions, and problematic Internet use more generally, also requires greater study.<sup>100</sup>

While acknowledging the ongoing debate, the thesis draws from specific IGD criteria to assess whether the possibility exists that violent video games influenced the shooters in the four case studies in Chapter IV.

## **2. IGD Criteria**

The APA Diagnostic and Statistical Manual of Mental Disorders (DSM-5) for IGD suggests that identification of five or more out of the nine criteria listed next indicate the possibility that some school shooters may have also suffered from IGD.<sup>101</sup> These criteria include the following.

- Preoccupation with games. The individual thinks about previous gaming activity or anticipates playing the next game; gaming becomes the dominant activity in daily life.
- Withdrawal symptoms when gaming is taken away. These symptoms are typically described as irritability, anxiety, or sadness.

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<sup>99</sup> Kovatch, “Call to Duty,” 57.

<sup>100</sup> Gentile et al., “Internet Gaming Disorder in Children and Adolescents,” S83.

<sup>101</sup> Gentile et al., s82.

- Tolerance. The need to spend increasing amounts of time engaged in games.
- Unsuccessful attempts to control or reduce participation in games.
- Loss of interest in real-life relationships, previous hobbies, and other entertainment because of, and with the exception of, games.
- Continued excessive use of games despite knowledge of psychosocial problems.
- Deceiving family members, therapists, or others regarding the amount of gaming.
- Using games to escape or relieve a negative mood (e.g., feelings of helplessness, guilt, or anxiety).
- Participation in games has jeopardized or resulted in the loss of a significant relationship, job, or educational career opportunity.<sup>102</sup>

## **B. THE SCHOOL SHOOTER: THREAT ASSESSMENT PERSPECTIVE**

This section offers an overview of the FBI's monograph *The School Shooter: A Threat Assessment Perspective* by Supervisory Special Agent Mary Ellen O'Toole. In it, O'Toole identifies traits to be aware of when assessing the potential risk of a student becoming a school shooter.<sup>103</sup> The origins of why a student decides to bring an armed weapon to school and open fire on fellow students and teachers are complex, and draw upon multiple factors that vary according to the individual's circumstances. In O'Toole's assessment, she describes types of behaviors and traits that school shooters display.

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<sup>102</sup> Gentile et al., s82.

<sup>103</sup> Mary Ellen O'Toole, *The School Shooter: A Threat Assessment Perspective* (Washington, DC: Federal Bureau of Investigation, 1999), 10, <https://www.fbi.gov/file-repository/stats-services-publications-school-shooter-school-shooter>.

O'Toole's list is divided into four sections; of the four sections, this thesis focuses on selected traits from three sections: the personality of the student, family dynamics, and particularly, "the copycat effect" found in the social dynamics section of O'Toole's list.<sup>104</sup> The selection of these traits is based upon their direct applicability to the shooter's gaming experience.

Although not all the traits apply to all four cases, an examination of each case reveals whether a strong correlation exists between any of these traits and the mass shooters involved in the four case studies in the following chapter.

### **1. Personality of the Student**

- *Leakage*: This trait results when a student shows an interest in committing a violent act. Examples include signs of subtle threats, brags, innuendos, predictions, or ultimatums. More commonly, it has been found that students reveal leakage through writings, such as journal entries, stories that depict violent crimes, or schoolwork. Additionally, students may reveal their interests in committing a violent crime through online chats or video recordings that they share with their peers or strangers.
- *Poor Coping Skills*: The student consistently shows the lack of ability to deal with situations that involve humiliation, frustration, criticism, disappointment, failure, or rejection. The student's response is usually insensitive, embellished, immature, or disproportionate.
- *Narcissism*: The student is unable to connect or fully comprehend the feelings of others, and blames others for inadequacies and disappointments. The student is also self-centered. The narcissistic student may also incorporate the role of a victim to prompt sympathy and to feel for the time being superior to others. The student reveals signs of paranoia

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<sup>104</sup> O'Toole, 10.

and undertakes an attitude of self-importance or pretentiousness to mask feelings of unworthiness.

- *Alienation*: The student feels separated or indifferent from society. The student by choice becomes alienated from social gatherings with either friends or family members because of not being able to connect with society. The student may feel isolated, lonely, sad, and may not fit in.
- *Unusual Interest in Sensational Violence*: The student demonstrates an unusual focus on publicized acts of violence and school shootings. The student may declare an appreciation for those who committed mass shootings or may condemn them for ineffectiveness or failure to kill an adequate number of people. The student may openly express a desire to commit a mass shooting as perhaps an act of “justice.”
- *Fascination with Violence-filled Entertainment*: The student displays an uncommon attraction with violence-filled entertainment that can range in the form of TV shows, movies, videos, or computer games, or any other material that focuses on an excessive amount of violence. The student may read and reread a book about violence, or constantly watch one movie filled with violence or possibly involves school violence. These themes recur in nearly all the student’s activities, pastimes, and hobbies. An inordinate amount of time is spent playing violent video games, and the student seems more fascinated with the violent images within the gameplay. The student’s browsing history on the internet may reveal websites with violent content, other disturbing subjects, and weapons.
- *Negative Role Models*: The student has an attraction to negative role models who have committed mass murder or are dark in nature, such as Hitler or demonic entities.

- *Behavior Appears Relevant to Carrying out a Threat*: The student displays an interest in activities that involve carrying out a violent crime. For instance, the student invests an inordinate time in priming skills with firearms. A lack of interest is noticeable in day-to-day activities that may involve completing class assignments, attending school, working, and socializing.<sup>105</sup>

## 2. **Family Dynamics**

- *Access to Weapons*: Firearms or other weapons are not kept in a secure location to which the student does not have access. Exposure to the handling of weapons casually or recklessly by the student's parents or any individual who the student may look up to may convey weapons can be a practical method to settle differences or a way to intimidate others.
- *Student 'Rules the Roost'*: The student's parents set very few to no limits regarding behavior, and frequently submit to the child's demands. Additionally, the parents give in to the child's excessive need for privacy, and are unaware of the child's activities, friends, school life, or other relationships.
- *No Limits or Monitoring of TV and internet*: The student's time spent either watching TV or using the internet is not supervised, limited, or monitored. Furthermore, the student is distracted from being involved with family or friend's events due to the time spent on the internet or television.<sup>106</sup>

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<sup>105</sup> O'Toole, 16–21.

<sup>106</sup> O'Toole, 21–22.

### 3. Social Dynamics

- *The Copycat Effect*: This behavior is a common effect supported by strong anecdotal evidence. Additionally, this evidence has shown the surge of threats nationwide in schools following a mass shooting in the United States. Mass shootings at schools and other violent cases that receive an abundant amount of media attention can produce “the copycat effect” that may inspire other students.<sup>107</sup>

### C. CONCLUSION

The background reviewed in this chapter identifies a number of different ways to review possible links and causes for these mass school shootings, and these tools are used to analyze the four cases in Chapter IV. The research conducted by the APA suggests violent video games can make some adolescents more aggressive, depending on their personalities. Additionally, the symptoms of the gaming addiction can appear in the same way for both offline and online video gaming, and out of the nine criteria the APA has listed, identifying five or more of the criteria can indicate an individual may suffer from IGD. Correspondingly, O’Toole addresses that mass school shootings are not just a simple school or law enforcement problem, but are the result of the life experiences and influences, both positive and negative, the individual encounters. Furthermore, the FBI’s threat assessment perspective list explores the complexities of the circumstances the shooters may have experienced prior to committing a mass school shooting. The mental world of violence in gaming and in real life is complex, and the combination of an individual’s environment, character, exposure to violence, and the correlations are not easily surmised.

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<sup>107</sup> O’Toole, 24.

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## **IV. THE LINK BETWEEN MASS SHOOTERS AND VIDEO GAMES**

This chapter examines the argument and evidence regarding the connection between mass shooters and violent video games. It identifies how video games can potentially play a role in inducing individuals with underlying mental health conditions to become violent. Thus, this chapter asserts that while no direct causal link exists that violent video games alone incite mass shootings, in some cases, violent video games can either motivate or desensitize the user to acts of aggression. Consequently, this chapter is divided into two parts. The first explores two cases in which violent video games were initially assumed a factor but were ultimately determined not to be a primary cause. The second discusses two mass shooter cases in which it does appear that violent video gaming may have influenced the shooter.

Young adults at public schools, between 1999–2019, carried out the four mass shootings studied. These shooters all left behind their online browsing history, online social interactions, and writings that reveal more about them than initially assumed by their families and peers. Additionally, the evidence left behind in these four case studies are analyzed using the two frameworks—the APA-identified behaviors associated with IGD and the selected FBI traits associated with potential mass shooters—described in Chapter III.

### **A. VIDEO GAMES SUSPECTED, BUT NOT A MAJOR FACTOR**

This section first reviews the shooting at Columbine High School in Colorado in 1999, and then the Sandy Hook Elementary School shooting in Connecticut in 2012. In both cases, violent video games were suspected as being a cause of the violence but were determined to actually not be a major factor.

## 1. Columbine High School—Lakewood, Colorado

The Columbine High School shooting, arguably one of the most infamous school shootings in U.S. history, represents a case where the playing of violent video games was not a motivating factor; instead, possible untreated mental health issues may have evoked the shooting. On April 20, 1999, 18-year-old Eric Harris and 17-year-old Dylan Klebold mass murdered 12 of their fellow students and one teacher at Columbine High School, located in Lakewood, Colorado.<sup>108</sup> Additionally, they injured more than 24 others, before turning their guns on themselves and committing suicide.<sup>109</sup> The media reports of the day soon seized on stories that, leading up to the mass shooting, claim Harris and Klebold were known to spend a lot of their extra time engaged in violent video games.<sup>110</sup> The two were said to enjoy playing video games, such as first-person shooter games *Doom* and *Quake*.<sup>111</sup> Additionally, Harris and Klebold were known to be a part of a group at school referred to as the Trench Coat Mafia, which was a group of students who dressed in what was considered gothic clothing and black trench coats.<sup>112</sup> Elena Cherney, Jonathan Gatehouse, and Charles Gills at the *National Post*, noted their aggressive behaviors:

Both boys had records as juvenile offenders, according to local reports. But neither caused trouble at school, a county spokesman said. The Trench Coat Mafia's outlandish get-up of black trench coats and combat boots, their interest in Second World War lore and Nazi insignia, and their taste for dark, German techno music, made them outcasts—but not threats, said Leland Andres, a teacher at the school. “They took quite a bit of teasing, dressing like that,” said Mr. Andres. “They took quite a bit from athletes. But no

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<sup>108</sup> William H. Erickson, *The Report of Governor Bill Owens' Columbine Review Commission* (State of Colorado: Columbine Review Commission, 2001), iv, <https://schoolshooters.info/sites/default/files/Columbine%20-%20Governor's%20Commission%20Report.pdf>.

<sup>109</sup> Erickson, xxi.

<sup>110</sup> M. Brandon Robbins, “Games and Violence,” *Library Journal* 138, no. 5 (March 15, 2013): 88-n/a, Proquest.

<sup>111</sup> Colin Campbell, “A Brief History of Blaming Video Games for Mass Murder,” *Polygon* (blog), March 10, 2018, <https://www.polygon.com/2018/3/10/17101232/a-brief-history-of-video-game-violence-blame>.

<sup>112</sup> Peter Langman, *The Search for Truth at Columbine* (Allentown, PA: School Shooters Info, 2014), 2, [https://schoolshooters.info/sites/default/files/search\\_for\\_truth\\_at\\_columbine\\_2.2.pdf](https://schoolshooters.info/sites/default/files/search_for_truth_at_columbine_2.2.pdf).

more so than between jocks and freaks historically. We generally figure it's part of growing up." It was never clear to teachers why the members of the Trench Coat Mafia, who began sporting the ankle-length dusters about three years ago, did not fit in with the crowd at Columbine. There was nothing remarkable about their families, as far as any teacher knew, nothing that explained why they chose to dress in black from head to toe, to wear make-up and nail polish, and Nazi crosses.<sup>113</sup>

In journal entries found after the shooting, Klebold expressed suicidal thoughts, as well as his sadness over his lack of romantic relationships and indicated that video gaming did not diminish his interest in developing real-life relationships.<sup>114</sup> Harris also exhibited an interest in social settings outside the confines of video gaming, as when he confided to fellow-student Kelly Miller, his inability to fit in with the other students.<sup>115</sup> Klebold and Harris also kept video journals in which they expressed their rage and ideologies. Both were also known to share an interest in bombs and firearms. They openly expressed their dissatisfaction with "jocks" and socialized with a group considered to be made up of outcasts.

Video games were initially blamed as the primary influence for their behavior. Several of the victim's families filed a lawsuit against 11 video game makers, including Sony Computer Entertainment America, Activision, and Id Software.<sup>116</sup> The families claimed the video games and products associated with these makers influenced Klebold and Harris to kill.<sup>117</sup> However, U.S. District Judge Lewis Babcock dismissed the case and

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<sup>113</sup> Elena Cherney, Jonathan Gatehouse, and Charles Gills, "Teenaged Killers Seen as Strange, but Not Monsters: Out of Place in Suburbia: Gunmen Obsessed with Killing, Nazi Regalia: [National Edition]," *National Post*, April 22, 1999, Proquest.

<sup>114</sup> "Dylan Klebold's Writing," a Columbine site, August 10, 2020, <http://www.acolumbinesite.com/dylan/writing.php>.

<sup>115</sup> Adams, *Profile: Eric Harris and Dylan Klebold*, 1.

<sup>116</sup> Nick Wadhams, "Columbine Suit against Game Dismissed," MRT, March 3, 2002, <https://www.mrt.com/news/article/Columbine-Suit-Against-Game-Dismissed-7811935.php>.

<sup>117</sup> Staff and Agencies, "Columbine Parents Sue Entertainment Companies," *The Guardian*, April 24, 2001, <https://www.theguardian.com/technology/2001/apr/24/internetnews1>.

ruled that the makers of the video games could not reasonably predict that their games would cause the Columbine shooting, or any other acts of violence.<sup>118</sup>

## 2. Analysis

The Columbine shooting news reports at the time were filled with allegations that suggested violent video games contributed to the Columbine shooting, but in fact, Klebold and Harris were negligibly connected to violent video games, and their motives for committing a mass shooting were more connected to the hatred they had for society and all humankind.<sup>119</sup>

Not much evidence is available that shows Klebold and Harris spent the majority of their time invested in, or even inspired by, video games alone. The two had an array of interests in addition to video gaming, such as an interest in firearms and Nazi ideology.<sup>120</sup> O'Toole refers to this type of trait as, *negative role models*, the attraction to mass murderers and sinister individuals guilty of heinous acts.<sup>121</sup> Klebold and Harris also demonstrated a trait O'Toole refers to as *fascination with violence-filled entertainment*, which would explain their interest in Nazi memorabilia, firearms, and the violent images in the video games that they *sometimes* spent time playing.<sup>122</sup> Additionally, Klebold and Harris revealed *leakage*, a third O'Toole trait, as the two intentionally or unintentionally revealed that they had intentions or fantasies of acting out violently against their peers.<sup>123</sup>

Evidence of mental health issues from Governor Bill Owens' report on the Columbine shooting revealed that both Klebold and Harris were coping with mental health

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<sup>118</sup> Cherney, Gatehouse, and Gills, "Teenaged Killers Seen as Strange."

<sup>119</sup> Erickson, *The Report of Governor Bill Owens' Columbine Review Commission*, 22.

<sup>120</sup> Langman, *The Search for Truth at Columbine*, 11.

<sup>121</sup> O'Toole, *The School Shooter*, 21.

<sup>122</sup> O'Toole, 20.

<sup>123</sup> O'Toole, 16; Erickson, *The Report of Governor Bill Owens' Columbine Review Commission*, 19–21.

issues.<sup>124</sup> Peter Langman concluded that Klebold appeared to have had a schizotypal personality disorder.<sup>125</sup> In contrast, Harris had a combination of “narcissism, sadism, impression management, delight in deception, and rejection of morality and law.”<sup>126</sup> These qualities led the two down a path of acting out their rage and interest in violence in real life. According to the APA DSM-5 criteria pertaining to IGD, it appears that Klebold and Harris possess only one or two of the indicators: (1) they continued to play violent video games despite having mental health issues, and (2) they possibly played violent video games as a way to cope with their feelings of anger. At least five or more out of the nine criteria would need to be met to suggest the possibility of IGD.<sup>127</sup>

### **3. Sandy Hook Elementary School—Newton, Connecticut**

The Sandy Hook Elementary School shooting left parents and many worldwide shattered in utter disbelief that someone would so violently end the lives of such young children, especially in a place where parents expected their children to be safe. The shooting at Sandy Hook spurred debates over school safety, security measures, and gun control. Violent video games were discovered at the shooter’s home; therefore, violent video games once again became the focus. However, this shooting occurred due to many other contributing factors.

On December 14, 2012, 20-year-old Adam Lanza shot his mother, Nancy Lanza, in the head and then traveled to nearby Sandy Hook Elementary School in Newton,

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<sup>124</sup> Erickson, 17–18.

<sup>125</sup> Peter Langman, “Rampage School Shooters: A Typology,” *KidsPeace, The Lee Salk Center for Research* 14, no. 1 (2009): 79–86, <https://doi.org/10.1016/j.avb.2008.10.003>.

<sup>126</sup> Langman, 84.

<sup>127</sup> Gentile et al., “Internet Gaming Disorder in Children and Adolescents,” S82.

Connecticut, and shot 20 children and six adults.<sup>128</sup> After the mass shooting at the school, Lanza then fatally shot himself in the head.<sup>129</sup>

Lanza was said to have been fascinated with past mass shootings.<sup>130</sup> The specifics of Lanza's motivation remain a mystery; however, Langman suggests that Lanza may have been an undiagnosed schizophrenic.<sup>131</sup> Lanza had previously met with a nurse at the Yale Child Study Center and asked questions about schizophrenia and obsessive-compulsive disorder, but would not admit to having any symptoms. Langman suggests, "The fact that Lanza was curious about schizophrenia and unwilling to disclose if he had any of the symptoms suggests the possibility that he had some of the symptoms but was unwilling to reveal this."<sup>132</sup> Furthermore, family members, classmates, and others who knew Lanza reported that he was socially distant and distracted as if in a trance.<sup>133</sup> Additionally, psychiatrists have stated that Lanza suffered from multiple developmental disorders, one of which was pervasive developmental disorder (PDD).<sup>134</sup> According to the Report of the Office of the Child Advocate, Lanza suffered from impairing developmental disorders and asserted that he required intensive help.<sup>135</sup>

Interestingly, the 20-year-old could have attacked the college he had attended, yet he opted for innocent children at an elementary school. Many factors surround why he

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<sup>128</sup> Dannel P. Malloy, *Final Report of the Sandy Hook Advisory Commission* (Hartford, CT: Sandy Hook Advisory Commission, 2015), 1, [https://portal.ct.gov/-/media/Malloy-Archive/Sandy-Hook-Advisory-Commission/SHAC\\_Final\\_Report\\_3-6-2015.pdf?sc\\_lang=en&hash=BDF55EC4ACE382E87941870AD9BF2A34](https://portal.ct.gov/-/media/Malloy-Archive/Sandy-Hook-Advisory-Commission/SHAC_Final_Report_3-6-2015.pdf?sc_lang=en&hash=BDF55EC4ACE382E87941870AD9BF2A34).

<sup>129</sup> Stephen J. Sedensky III, *Report of the State's Attorney for the Judicial District of Danbury on the Shootings at Sandy Hook Elementary School and 36 Yogananda Street, Newtown, Connecticut on December 14, 2012* (Hartford, CT: Office of the State's Attorney, Judicial District of Danbury, 2013), 27, <https://portal.ct.gov/-/media/DCJ/SandyHookFinalReportpdf.pdf>.

<sup>130</sup> Campbell, "A Brief History of Blaming Video Games for Mass Murder."

<sup>131</sup> Peter Langman, "The Enigma of Adam Lanza's Mind and Motivations for Murder," *National Behavioral Intervention Team Association* 1.1 (February 3, 2016): 1.

<sup>132</sup> Langman, 2.

<sup>133</sup> Langman, 2.

<sup>134</sup> Office of the Child Advocate, *Shooting at Sandy Hook Elementary School* (Hartford, CT: Office of Governmental Accountability, 2014), 51, <https://www.ct.gov/oca/lib/oca/sandyhook11212014.pdf>.

<sup>135</sup> Office of the Child Advocate, 51.

decided to target an elementary school versus schools he had attended in the past. One such factor includes the possibility that Lanza may have been a pedophile.<sup>136</sup> Lanza left a trail of information on what he was like, and that information suggests he focused on same-sex fantasies, and other interests.<sup>137</sup> More than 1,000 pages of documents found at Lanza's residence and released to *The Courant* revealed that Lanza spent the majority of his time isolated, and relied on the internet for social interaction.<sup>138</sup> Langman indicated that the possible motive for Lanza killing others could have been a result of the sexual frustration he was experiencing:

He deliberately sought out and killed young children. Perhaps he killed children out of sexual frustration, being attracted to them but unable to satisfy his desire for them. Perhaps he resented the power they had over him by stirring up feelings he could not express. In his personal message, he wrote, "the child has all of the control over the relationship" (Coleman, 2015c). This is a bizarre statement, and given his preoccupation with being a victim of society's control, his attack could have been a rebellion against children who "controlled" him by causing him to experience feelings he perhaps did not want or could not express.<sup>139</sup>

Yet the public, the media, and politicians claimed that violent video games influenced Lanza's motive to mass murder.<sup>140</sup> Lanza was indeed interested in video games; reports of the multiple video games found in the basement of the home of Lanza's mother included popular first-person shooter games, including the popular online computer game called *WoW* discussed in Chapter II.<sup>141</sup> However, violent video games do not appear to

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<sup>136</sup> Langman, "The Enigma of Adam Lanza's Mind and Motivations for Murder," 5.

<sup>137</sup> Langman, 5.

<sup>138</sup> Josh Kovner and Dave Altimari, "Courant Exclusive: More than 1,000 Pages of Documents Reveal Sandy Hook Shooter Adam Lanza's Dark Descent into Depravity," *Hartford Courant*, December 9, 2018, <https://www.courant.com/news/connecticut/hc-news-sandy-hook-landa-new-documents-20181204-story.html>.

<sup>139</sup> Langman, "The Enigma of Adam Lanza's Mind and Motivations for Murder," 5.

<sup>140</sup> Edgar Sandoval, Dan Friedman, and Bill Hutchinson, "News' Report on Sandy Hook Gunman Adam Lanza's Video-Game-Style Slaughter Score Sheet Inspires Calls in D.C. to Stiffen Regulation of Violent Games," *New York Daily News*, March 19, 2013, <https://www.nydailynews.com/news/national/crackdown-urged-violent-games-landa-report-article-1.1292402>.

<sup>141</sup> Office of the Child Advocate, *Shooting at Sandy Hook Elementary School*, 99.

have been the root of the problem, as Lanza had deeper interests in sexual content involving young children, and same sex fantasies as discovered in his browsing history.<sup>142</sup>

#### 4. Analysis

It appears insufficient evidence exists to suggest that Lanza possibly had IGD. Based on the IGD DSM-5, Lanza may have only met one of the criteria, as he played violent video games regardless of the mental health issues he had, which suggested that he did not have IGD.<sup>143</sup> Nor does enough evidence exist to support that video gaming was the perpetrator in his actions. Instead, experts have found several other potential reasons for his actions. According to Sedensky, the State's Attorney, "It is known that the shooter had significant mental health issues that affected his ability to live a normal life and to interact with others, even those to whom he should have been close."<sup>144</sup> Furthermore, he exhibited violent tendencies not associated with video games; as with the Columbine shooters, he indicated these tendencies through *Leakage*; for example, when expressing his hopelessness and rage in chatrooms online.<sup>145</sup>

Another explanation centers on his poor relationship with his mother. Nancy Lanza was intimidated by her son. Adam Lanza's writings reveal that he felt that his mother depended on him more than he depended on her. Thus, Lanza required an extraordinary amount of privacy from his mother. O'toole describes this characteristic as *student rules the roost*, in which the child requires an inordinate amount of privacy from parents or guardians.<sup>146</sup>

Lanza also demonstrated *the copycat effect*, a third behavioral trait from O'Toole's list wherein the student has a deep interest or obsession in previous mass school shootings

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<sup>142</sup> Kovner and Altimari, "Courtant Exclusive."

<sup>143</sup> Gentile et al., "Internet Gaming Disorder in Children and Adolescents," S82.

<sup>144</sup> Sedensky, *Report of the State's Attorney for the Judicial District of Danbury on the Shootings at Sandy Hook Elementary School and 36 Yogananda Street, Newtown, Connecticut on December 14, 2012*, 3.

<sup>145</sup> Kovner and Altimari, "Courtant Exclusive."

<sup>146</sup> O'Toole, *The School Shooter*, 22.

that received a lot of media attention.<sup>147</sup> Lanza’s browsing history and journals reveal his obsession with past school shootings, among other obsessions.<sup>148</sup> On July 23, 2012, Lanza wrote to a cyber-acquaintance, “My interest in mass murdered [sic] has been perfunctory for such a long time. The enthusiasm I had back when Virginia Tech happened feels like it’s been gone for a hundred billion years. I don’t care about anything. I’m just done with it all.”<sup>149</sup> The case also shows that Lanza suffered from undiagnosed mental health problems, and the continued social *alienation*, an O’Toole indicator that may have caused severe damage to his mental health.<sup>150</sup> Lastly, Lanza also possessed *access to weapons*, an O’Toole trait in which he had access to firearms within his household. The Connecticut State Attorney, Sedensky’s report states:

Investigators found a large number of firearms and related items in the home. All firearms involved in these incidents were legally purchased by the shooter’s mother over the years. The home also contained many edged weapons, knives, swords, spears, etc. A prescription bottle in the shooter’s name for acetaminophen with codeine was found in the mother’s bathroom, which was part of the master bedroom.<sup>151</sup>

According to the Report of the Office of the Child Advocate, “AL grew up in a home where it was common place to use guns for recreational activity. It cannot be overlooked that as his mental health deteriorated and his isolation from the world increased dramatically, his access to guns did not diminish.”<sup>152</sup> Although the actual reasons for his actions are not clear, it does not appear that violent video games are a significant factor.

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<sup>147</sup> O’Toole, 24.

<sup>148</sup> Ed Pilkington, “Sandy Hook Report—Shooter Adam Lanza Was Obsessed with Mass Murder,” *The Guardian*, November 25, 2013, <https://www.theguardian.com/world/2013/nov/25/sandy-hook-shooter-adam-lanza-report>.

<sup>149</sup> Office of the Child Advocate, *Shooting at Sandy Hook Elementary School*, 100.

<sup>150</sup> O’Toole, *The School Shooter*, 18.

<sup>151</sup> Sedensky, *Report of the State’s Attorney for the Judicial District of Danbury on the Shootings at Sandy Hook Elementary School and 36 Yogananda Street, Newtown, Connecticut on December 14, 2012*, 25.

<sup>152</sup> Office of the Child Advocate, *Shooting at Sandy Hook Elementary School*, 78.

## **B. CASES FOR WHICH VIOLENT VIDEO GAMES WERE A FACTOR**

This section reviews first the shooting at Marjory Stoneman Douglas High School in Florida in 2018, and then the Santa Fe High School shooting in Texas, which also occurred in 2018. In this section, video games played a more prevalent role in influencing the motives of the shooters.

### **1. Marjory Stoneman Douglas High School—Parkland, Florida**

On February 14, 2018, 19-year-old Nikolas Cruz shot 17 students and faculty members at Marjory Douglas High School located in Parkland, Florida.<sup>153</sup> Cruz had a timeline full of hints that he was on the edge of committing a violent crime leading up to the mass shooting. On September 25, 2017, the FBI had received a tip from YouTube user Ben Bennight from Mississippi after Cruz commented on Bennight’s video, “I’m going to be a professional school shooter.”<sup>154</sup> The *Washington Post* reported:

In the years leading up to the mass shooting at Marjory Stoneman Douglas High School, accused gunman Nikolas Cruz accumulated a long list of disciplinary problems and mental health concerns. The teenager was suspended for a fight, transferred to a school for troubled students and reported to law enforcement numerous times. At least three times, people contacted law enforcement to warn that Cruz could carry out a school shooting.<sup>155</sup>

Relatives Roger and Lynda Cruz adopted Cruz and his brother Zachary shortly after they were born.<sup>156</sup> By the age of four, Cruz was diagnosed as being developmentally delayed.<sup>157</sup> Five years before the Parkland shooting, Lynda Cruz reported to the Broward

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<sup>153</sup> Washington Post Staff, “Red Flags: The Troubled Path of Accused Parkland Shooter Nikolas Cruz,” *The Washington Post*, March 10, 2018, <https://www.washingtonpost.com/graphics/2018/national/timeline-parkland-shooter-nikolas-cruz/>.

<sup>154</sup> Marjory Stoneman Douglas High School Public Safety Commission, *Initial Report, Submitted to the Governor, Speaker of the House of Representatives and Senate President* (Tallahassee, FL: Florida Department of Law Enforcement, 2019), 244, <http://www.fdle.state.fl.us/MSDHS/CommissionReport.pdf>.

<sup>155</sup> Washington Post Staff, “Red Flags.”

<sup>156</sup> Marjory Stoneman Douglas High School Public Safety Commission, *Initial Report*, 231.

<sup>157</sup> Washington Post Staff, “Red Flags.”

County sheriff that her son had “anger issues and attention-deficit/hyperactivity disorder (ADHD)” after then-14-year-old Nikolas became violent with Lynda for taking away his Xbox.<sup>158</sup> The Marjory Stoneman Douglas (MSD) High School Public Safety Commission (*MSD Commission Report*) reported that Cruz threw objects, “He was angry because he lost the privilege to play video games.”<sup>159</sup> On November 20, 2014, the Broward County sheriff received a call from Deborah Cooper, who stated that Cruz had shot her chickens with an airsoft gun, and eventually one of the chickens had died.<sup>160</sup> The *MSD Commission Report* stated, “Cooper did not wish to pursue charges after finding out that Nikolas Cruz was developmentally delayed.”<sup>161</sup> The following year Cruz was transferred to Cross Creek School, which offers psychiatric care for students with emotional or behavioral problems.<sup>162</sup>

By Cruz’s sophomore year of high school, he was allowed to leave Cross Creek School to enroll in public high school, MSD High School. Within a month of Cruz’s transfer, anonymous reports begin to emerge of Cruz’s intentions to “shoot up the school” after Cruz had posted a photo of himself with guns.<sup>163</sup> A peer counselor also reported that Cruz allegedly attempted to commit suicide by ingesting gasoline and cutting himself.<sup>164</sup> On September 28, 2016, a school resource officer reported that Cruz was hurting himself, but a mental-health clinician advised that Cruz did not require medical help or need to be held under the Baker Act.<sup>165</sup> The Baker Act gives families the ability to provide emergency mental health services and allows an individual who may harm others or themselves to be

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<sup>158</sup> Washington Post Staff.

<sup>159</sup> Marjory Stoneman Douglas High School Public Safety Commission, *Initial Report*, 236.

<sup>160</sup> Marjory Stoneman Douglas High School Public Safety Commission, 236.

<sup>161</sup> Marjory Stoneman Douglas High School Public Safety Commission, 236.

<sup>162</sup> Washington Post Staff, “Red Flags.”

<sup>163</sup> Marjory Stoneman Douglas High School Public Safety Commission, *Initial Report*, 237.

<sup>164</sup> Washington Post Staff, “Red Flags.”

<sup>165</sup> Tim Craig, “Mental-Health Counselors Twice Advised against Committing Nikolas Cruz before School Shooting, Records Show,” *Washington Post*, March 19, 2018, [https://www.washingtonpost.com/national/florida-law-that-forces-mental-health-treatment-faces-new-scrutiny-after-parkland-school-shooting/2018/03/18/cd7376c2-262a-11e8-874b-d517e912f125\\_story.html](https://www.washingtonpost.com/national/florida-law-that-forces-mental-health-treatment-faces-new-scrutiny-after-parkland-school-shooting/2018/03/18/cd7376c2-262a-11e8-874b-d517e912f125_story.html).

put into a detention room.<sup>166</sup> The Florida Department of Children and Families then opened a case for medical neglect after Cruz said he planned to buy a gun; the report stated that Cruz was “a vulnerable adult due to mental illness.”<sup>167</sup> Mary Hamel, a friend of Lynda Cruz filed a report with Deputy G. Treijs regarding Cruz’s access to weapons and his intent to “join the military to kill people.”<sup>168</sup> The MSD Commission reported, “Hamel reportedly stated that Cruz ‘might be a Columbine in the making’ and was a threat to kill himself.”<sup>169</sup>

## 2. Analysis

Meanwhile, as family and friends become more aware of Cruz’s aggression and mental vulnerabilities, Cruz spent most of his days playing violent video games. Investigative reporters O’Matz and Wallman stated, “Nikolas Cruz was an avid video gamer who frequently played as much as 15 hours or more a day, his neighbors and others told investigators.”<sup>170</sup> Hints of Cruz’s habitual video gaming and his response to having his Xbox video game console taken away from him as a disciplinary tool within the household were telltale signs that Cruz had the potential to be diagnosed with IGD. Reports show that Cruz met at least seven of the criteria under the APA’s DSM-5 as referenced in Chapter III: (1) Cruz had a preoccupation with violent video gaming;<sup>171</sup> (2) Cruz had withdrawal symptoms that caused him to act out violently when video games were taken away from him as a form of discipline;<sup>172</sup> (3) Cruz had the need to spend increasing amounts of time playing video games and was known to play for an entire day;<sup>173</sup> (4) Attempts to control Cruz’s participation in games were unsuccessful;<sup>174</sup> (5) Cruz continued

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<sup>166</sup> “Baker Act,” UFHealth University of Florida, August 15, 2020, <https://ufhealth.org/baker-act>.

<sup>167</sup> Washington Post Staff, “Red Flags.”

<sup>168</sup> Marjory Stoneman Douglas High School Public Safety Commission, *Initial Report*, 238.

<sup>169</sup> Marjory Stoneman Douglas High School Public Safety Commission, 238.

<sup>170</sup> O’Matz and Wallman, “A Mass Murderer’s Digital Trail,” 1.

<sup>171</sup> Gentile et al., “Internet Gaming Disorder in Children and Adolescents,” s82.

<sup>172</sup> Gentile et al., s82.

<sup>173</sup> Gentile et al., s82.

<sup>174</sup> Gentile et al., s82.

to play video games excessively despite being aware of his psychosocial problems;<sup>175</sup> (6) Cruz deceived therapists into allowing him to play video games as a form of treatment;<sup>176</sup> and (7) Cruz used video games as a means of escape from either his mood or feelings.<sup>177</sup>

Under these circumstances, Cruz was already in a vulnerable state of mind, and the exposure to violent video games possibly influenced Cruz to carry out a mass shooting confidently. O'Matz reported that Cruz often quoted lines from the first-person shooter game *Call of Duty*. The gameplay *Call of Duty* allows players to advance through a series of wars either as an American soldier or as their adversaries to provide the realistic experience of war. Teachers were concerned about the amount of time Cruz spent playing violent video games. Cruz exhibited *fascination with violence-filled entertainment*, an O'Toole trait, in which this type of behavior requires attention in the event of a threat.<sup>178</sup> In the case of Nikolas Cruz, it seems his obsession with violent video games inspired him to act out violently against his peers.

In the aftermath of the Parkland shooting, the media suggested that violent video games prepared Cruz to carry out the shooting.<sup>179</sup> According to O'Matz:

One contention is that mental health professionals, working for Henderson Behavioral Health, did not properly diagnose or treat Nikolas Cruz and, actually, provided therapies that aggravated his condition. The allegations included having him sign personal contracts that included playing violent video games as a form of anger management.<sup>180</sup>

Langman had reviewed video recordings Cruz had made before the Parkland shooting and noted that what differentiated Cruz from other school shooters was his

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<sup>175</sup> Gentile et al., s82.

<sup>176</sup> Gentile et al., s82.

<sup>177</sup> Gentile et al., s82.

<sup>178</sup> O'Toole, *The School Shooter*, 20.

<sup>179</sup> Megan O'Matz, "Violent Video Games May Have Primed the Parkland School Shooter," *South Florida Sun Sentinel*, April 29, 2019, <https://www.sun-sentinel.com/local/broward/parkland/florida-school-shooting/fl-ne-nikolas-cruz-mental-health-services-20190425-story.html>.

<sup>180</sup> O'Matz.

callousness and lack of empathy he had for the crime he was about to commit; a textbook description of “flow.”<sup>181</sup> The APA explains, “To the extent that enjoyment increases, players may experience what is described as ‘flow,’ which can facilitate sustained exposure to the violent video game over time. As exposure increases, deleterious effects of exposure, such as desensitization, may increase.”<sup>182</sup> The *lack of empathy*, an O’Toole trait, which Cruz exhibited in his video recordings, may have resulted from the long hours Cruz spent exposed to violent video games.<sup>183</sup>

### 3. Santa Fe High School—Santa Fe, Texas

In the case of the Santa Fe High School shooting, the shooter had a particular interest in joining the U.S. Armed Forces and spent most of his time playing a first-person shooter game used by the military to recruit. On May 18, 2018, 17-year-old Dimitrios Pagourtzis shot 14 and killed 10 at Santa Fe High School located in Santa Fe, Texas. Unlike the shooters in the previous cases, Pagourtzis did not appear to be disturbed, and he did not show an interest in violence. Official reports following the incident mention that he grew up in a loving home with positive principles.<sup>184</sup> The police did not have any records or reports concerning Pagourtzis, or any history of actual violence, other than suggestive photos portraying an interest in memorabilia that incites or commemorates violence.<sup>185</sup> CNN reported:

The suspect showed signs of aggression or violence: Photos posted on Facebook on April 30, 2018 show a T-shirt emblazoned with the words, “BORN TO KILL,” as well as a black duster jacket with Nazi, communist, fascist and religious symbols. Also, the background image of his profile page is the album cover of “Dangerous Days” by French electronic music

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<sup>181</sup> Rafael Olmeda, “Parkland Shooter Nikolas Cruz Brags on Cellphone Videos, ‘I’m Going to be the Next School Shooter,’” May 30, 2018, <https://www.sun-sentinel.com/local/broward/parkland/florida-school-shooting/fl-reg-florida-school-shooting-phone-video-release-20180530-story.html>.

<sup>182</sup> Appelbaum et al., *Technical Report on the Review of the Violent Video Game Literature*, 4.

<sup>183</sup> O’Toole, *The School Shooter*, 18.

<sup>184</sup> Elder, “Target Practice,” 6–8.

<sup>185</sup> Christian DuChateau, “What We Know so Far about the Santa Fe School Shooting,” CNN, May 18, 2018, <https://www.cnn.com/2018/05/18/us/what-we-know-santa-fe-school-shooting/index.html>.

artist “Perturbator.” A song on that album is called “Humans Are Such Easy Prey.”<sup>186</sup>

Moreover, like Cruz, Pagourtzis was an avid video gamer and had a particular interest in joining the U.S. Marines Corps in 2019.<sup>187</sup>

*America’s Army* is a game that both Cruz and Pagourtzis spent the majority of their time playing. The video game was a deadly first-person shooter game used by the military to recruit. The Director of the National Coalition to Protect Student Privacy, Pat Elder, wrote, “The military exploits the visceral appeal of virtual killing. More than that, the Pentagon seeks virtual shooters who have developed surprisingly complex strategic and tactical skills learned through thousands of hours of gaming experience. These skills are like those used in real combat.”<sup>188</sup> For example, *America’s Army* offers opportunities for the gamers to explore the U.S. Army in a simulated combat zone in which the video game players can explore their shooting abilities, and determine if the Army is the right fit.<sup>189</sup> Pagourtzis also spent a great deal of his free time on social media sites, such as Instagram, where he would post photos of another first-person shooter game *Silent Scope*, and followed other accounts that were mostly firearm related.<sup>190</sup> Pagourtzis had a particular interest in all things gun-related or military-related in addition to his obsession with first-person shooter video games. Although these are two separate interests, in his case, they intersect potentially to influence Pagourtzis in acting out violently in real-life scenarios.

The mystery surrounding what set Pagourtzis off may have more to do with desensitization to violence due to excessive gameplay. Elder writes:

Pagourtzis virtually killed thousands and he was a hero. (Adam Lanza, the Sandy Hook shooter, racked up 83,000 kills.) The virtual killing kept his mind off his social status at school and the emotional trauma of rejection by a pretty girl. He hated her for it and he wished her dead, along with her

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<sup>186</sup> DuChateau.

<sup>187</sup> Elder, “Target Practice.”

<sup>188</sup> Elder.

<sup>189</sup> “America’s Army Game Series,” U.S. Army, August 15, 2020, <https://www.americasarmy.com/>.

<sup>190</sup> Elder, “Target Practice.”

terrorist co-conspirators. He could take them all out with a brilliant strategy and carefully chosen tactics.<sup>191</sup>

#### 4. Analysis

Pagourtzis was desperate and traumatized by being turned down for a date by a pretty fellow-student named Shana Fisher, who was among the 10 people that he shot.<sup>192</sup> Sadie Rodriguez, Fisher's mother, recounted that her daughter had to endure four months of issues with Pagourtzis, and eventually humiliated Pagourtzis in front of other peers.<sup>193</sup> According to O'Toole's list, Pagourtzis possessed *poor coping skills*, as he was not able or equipped to handle rejection from his peers. Additionally, from O'Toole's list, Pagourtzis possessed an admiration for *negative role models*, such as Hitler and Nazi ideology. Pagourtzis held a *fascination with violence-filled entertainment*, and had *access to weapons*.<sup>194</sup> Nonetheless, if any signs that Pagourtzis posed a threat were apparent, those signs were vague. Mental-health issues appear to be a significant factor in Pagourtzis's case, and his playing of violent video games may well have also been a factor that influenced his actions. According to the APA IGD DSM-5, Pagourtzis met the minimum of five criteria that would suggest he might have had IGD. Of those five criteria, Pagourtzis exhibited: (1) "Preoccupation with games;" video gaming was a dominant activity in Pagourtzis life;<sup>195</sup> (2) "Tolerance: The need to spend increasing amounts of time engaged in games;"<sup>196</sup> (3) "Continued excessive use of games despite knowledge of psychosocial problems;"<sup>197</sup> (4) "Use of games to escape or relieve a negative mood (e.g., feelings of

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<sup>191</sup> Elder.

<sup>192</sup> Christal Hayes, "Texas School Shooting: Gunman Targeted Daughter because She Rejected Him, Mom Says," *USA Today*, May 20, 2018, <https://www.usatoday.com/story/news/2018/05/20/texas-school-shooting-suspect-targeted-teen-who-rejected-him-mom-says/626861002/>.

<sup>193</sup> Hayes.

<sup>194</sup> O'Toole, *The School Shooter*, 17–21.

<sup>195</sup> Gentile et al., "Internet Gaming Disorder in Children and Adolescents," s82.

<sup>196</sup> Gentile et al., s82.

<sup>197</sup> Gentile et al., s82.

helplessness, guilt or anxiety;”<sup>198</sup> and (5) “Has jeopardized or lost significant relationship, job, or educational career opportunity because of participation in games.”<sup>199</sup>

Cruz and Pagourtzis did not turn their weapons of violence on themselves. Instead, the two shooters eventually surrendered following their shootings. However, unlike Cruz, Pagourtzis is currently in a mental health facility and has been determined incompetent to stand trial. Langman wrote:

Finally, murdering people in video games or vicariously through movies like *Natural Born Killers* can serve as a rehearsal to the real thing. Having killed people thousands of times in video games or in their imagination may have desensitized the school shooters to violence and made easier for them to pull the trigger for real. Thus, there is no simple connection between media violence and murder. If there were, then the millions of people who play violent video games or watch violent films would all become killers. Nonetheless, violent images and content can be a powerful influence on young people who are already unstable and desperate.<sup>200</sup>

### C. CONCLUSION

Although some mass shooters have played violent video games, the vast majority of the estimated 164-plus million adults who also play violent video games do not go on to commit mass murder.<sup>201</sup> This chapter examined four recent mass school shooting cases in which the shooters spent a great deal of time playing violent video games. These case studies indicate that violent video gaming does appear to play a part in some cases, but the causes of mass shootings are complex. In the cases of the Columbine and Sandy Hook shootings, untreated mental health conditions appear to have played a more significant role than violent video games. However, in the cases of Nikolas Cruz and Dimitrios Pagourtzis,

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<sup>198</sup> Gentile et al., s82.

<sup>199</sup> Gentile et al., s82.

<sup>200</sup> Peter Langman, *Why Kids Kill: Inside the Minds of School Shooters* (London: Palgrave MacMillan, 2009), 1.

<sup>201</sup> Entertainment Software Association, *2019 Essential Facts about the Computer and Video Game Industry* (Washington, DC: Entertainment Software Association, 2019), 2, <https://www.theesa.com/wp-content/uploads/2019/05/2019-Essential-Facts-About-the-Computer-and-Video-Game-Industry.pdf>.

experts argue that exposure to violent video gaming may have caused desensitization and primed the shooter's shooting skills through violent first-person shooter games.

## V. CONCLUSION AND ANALYSIS

This thesis examined the possible connection between violent video games and mass shootings. The research conducted has led to a conclusion partially different from the initial hypothesis: Although several cases have indicated that playing violent video games appears to be a relatively minor factor, untreated mental illness may contribute to a person's decision to engage in mass violence. This finding suggests mental and public health efforts may be more critical in reducing mass violence. This concluding chapter first provides an overview of the research conducted and then concludes by presenting the overall findings of the thesis, along with recommendations for policies that provide stricter regulations for rating video games and the possibilities for future research.

Chapter II examined the history of video gaming and demonstrated that violence had closely remained associated with video games throughout their history. From almost the first development of video games, researchers have been concerned about a possible link between the violence depicted in games and violence in the real world. Much of that work today has focused on a possible link between violent games and mass shootings. The media has long leaned on the theory that violent video gaming has influenced young adults to become mass shooters. Yet, little evidence is available to prove that video gaming is indeed the driving factor.

Chapter III presents a set of two frameworks, the APA's IGD and the FBI's monograph, *The School Shooter: A Threat Assessment Perspective*. These frameworks identify possible links and causes for mass school shootings. The APA asserts that violent video games can trigger aggression in young adults, which causes them to act out violently. The criteria that the APA presents include nine possible indicators that suggest a child may suffer from IGD. In contrast, the FBI's monograph provides an overview of traits, family dynamics, school dynamics, and social dynamics assessed to determine if a student is likely to be a threat for mass shootings at school. As O'Toole states, "All aspects of a threatener's

[sic] life must be considered when evaluating whether a threat is likely to be carried out.”<sup>202</sup>  
Both frameworks were applied to the case studies discussed in Chapter IV.

Chapter IV reviewed four recent highly publicized school shooting cases in which violent video games were considered a possible cause for violence. In two of those cases—the mass shootings at Columbine High School and Sandy Hook Elementary School—experts found that the motive for the shooters’ actions was not entirely dependent on violent video gaming and that untreated mental health conditions were more of a factor. However, in the other two cases—the shootings at MDS High School and Santa Fe High School—it does appear that overindulgence in violent video gaming desensitized the users, which suggests that, dependent on the mental health of the gamer, violent video gaming *may* aid in influencing the shooters who prime their shooting skills through violent first-person shooter games.

#### **A. ANALYSIS**

Given the different life circumstances facing each shooter in the case studies, this research suggests that untreated mental health conditions combined with violent video gaming may lead to severe consequences. Chapter IV revealed that the single common denominator between the four case studies was the strong possibility for mental illness, which was either left untreated or received insufficient treatment. Interestingly, the Parkland, Florida shooter, Nikolas Cruz, received therapy in the form of playing violent video games when feeling distressed. The treatment that Cruz received may have induced high levels of aggression and possibly desensitized him to the violent acts he was going to commit. This desensitization, according to Kovatch, occurs in many forms:

People exposed to a lot of violent media: (a) tend to become meaner, more aggressive, and more violent; (b) tend to see the world as a scarier place; (c) tend to become more desensitized to violence (both in the media and in real life), more callous, and less sympathetic to victims of violence; (d) tend to

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<sup>202</sup> O’Toole, *The School Shooter*, 10.

get an increased appetite for seeing more violent entertainment; and (e) are less likely to behave prosocially.<sup>203</sup>

The advancement in video gaming technology and graphic capabilities has given today's gamer a realistic sense of the first-person shooting experience. From the comfort of their couches, possible shooters can prime their strategic shooting skills. With the rise of virtual reality devices (VRD), video gamers interested in first-person shooter games, such as *Call of Duty*, can now become more physically involved in the experience. Previously school shooters may not have been heavily involved in violent video gaming, but today's generation of video gamers experiences far more detail and precision. The potential that generations may meet the threshold of violence they are exposed to today through video gaming may not be too far away.

Yet, video gaming does have added benefits, as some researchers have concluded that gaming aids in building teamwork, prosocial behaviors, as well as developing problem-solving skills.<sup>204</sup> The skills that gamers attain through violent video games have become effective training aids for military recruits. Kovatch explains, "With having prior exposure to video games, new recruits will have been conditioned to learn in the way that the military is attempting to affect. Due to this conditioning, new recruits will be more likely to exhibit cognitive and problem-solving skills acquired through prior video game play."<sup>205</sup> Additionally, Kovatch wrote that the military utilizes first-person shooter games to recruit and train military personnel for real-life scenarios.<sup>206</sup>

## **B. RECOMMENDATION FOR POLICY**

Video gaming companies rate their games according to the type of content acceptable for particular age groups. Along with the current rating system, this thesis recommends that gaming companies include warnings on packaging and in advertising

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<sup>203</sup> Kovatch, "Call to Duty, 3.

<sup>204</sup> Kovatch, 5-7.

<sup>205</sup> Kovatch, 7.

<sup>206</sup> Kovatch, 33.

regarding the gameplays' potential to increase levels of aggression in individuals with particular mental illnesses. Users with mental illnesses, such as schizophrenia or personality disorders, or the parents of such users, can then proceed with caution when purchasing or indulging in violent video games. Additionally, the Federal Communication Commission (FCC), or whichever organization is better equipped to regulate warning signs on violent video games, should require that the gaming industry incorporate policies that include additional warnings for potential harm.

### **C. RECOMMENDATION FOR FURTHER RESEARCH**

Additional research regarding individuals with mental illnesses more prone to acting out violently after being exposed to violent media would assist in educating and bringing awareness to how vulnerable patients with mental illness respond when exposed to violent media. Furthermore, this thesis recommends further research regarding the current regulations and policies (or the lack thereof) currently in place to protect minors from being exposed to content that may be harmful to their mental health. Although the FCC can enforce policies by placing fines and penalties on most entertainment, they do not govern the rating system or warnings presented within the gameplay content, or on the packaging of the game itself. Federal law currently bars the FCC from being able to prevent the release of the specific content of any kind from television or radio networks.<sup>207</sup>

In the United States, since 2009, an average of 30 mass school shootings has occurred per year.<sup>208</sup> According to a CNN report:

Since 2009, at least 177 of America's schools experienced a shooting. These tragedies are as diverse as our nation, but the depth of trauma is hard to convey. There is no standard definition for what qualifies as a school shooting in the US. Nor is there a universally accepted database. So CNN built our own. We examined 10 years of shootings on K-12 campuses and

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<sup>207</sup> "The FCC and Freedom of Speech," Federal Communication Commission, last updated/reviewed December 30, 2019, <https://www.fcc.gov/consumers/guides/fcc-and-freedom-speech>.

<sup>208</sup> Christina Walker et al., "10 Years. 180 School Shootings. 356 Victims.," CNN, 2019, <https://www.cnn.com/interactive/2019/07/us/ten-years-of-school-shootings-trnd/>.

found two sobering truths: School shootings are increasing, and no type of community is spared.<sup>209</sup>

Additionally, data gathered by the Center for Homeland Defense and Security (CHDS) on school shootings from K-12 showed that 391 school shootings occurred between 2009–2019. The peak of mass school shootings occurred in 2018 with 97 school shootings reported.<sup>210</sup>

Many factors contribute to the increase of mass shootings happening at schools. The accessibility to firearms, the pervasive violence in media, and the severe lack of treatment for children suffering from mental illness can all play a part. For example, the Office of the Child Advocate report recommends the following:

Appropriate, multidisciplinary and expert treatment, integrated into the family setting, community, and school might have prevented the later deterioration in AL's [Adam Lanza's] mental state. The lack of sustained, expert-driven and well-coordinated mental health treatment, and medical and educational planning ultimately enabled his progressive deterioration. Though again, no direct line of causation can be drawn from these failures to his commission of mass murder.<sup>211</sup>

Additionally, O'Toole's observation of *rules the roost*, discussed in Chapter III, is important, as problems are more likely to occur when parents do not set boundaries on their child's conduct and often abide by the child's inordinate demands. The parent will likely lack information regarding the student's activities, school life, social interactions, or other relationships. The type of attention that these young adolescents require may vary, but some form of additional attention is needed.<sup>212</sup> Officer Mike Clumpner, who specializes in active shooter training, may have put it best when he stated, "Today we have kids who are so isolated inside—playing video games and glued to their (tablets) and everything else—

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<sup>209</sup> Walker et al.

<sup>210</sup> Center for Homeland Defense and Security, *CHDS K-12 School Shooting Database* (Monterey, CA: Center for Homeland Defense and Security, 2019), 1, [https://www.chds.us/ssdb/resources/uploads/2019/04/K12-SSDB\\_Findings-Summary\\_032219.pdf](https://www.chds.us/ssdb/resources/uploads/2019/04/K12-SSDB_Findings-Summary_032219.pdf).

<sup>211</sup> Office of the Child Advocate, *Shooting at Sandy Hook Elementary School*, 80.

<sup>212</sup> O'Toole, *The School Shooter*, 22.

that they don't learn those problem-solving skills."<sup>213</sup> In addition, FBI agent Chris Cole agreed that today's youth continually exhibit poor coping and conflict resolution skills. Therefore, this thesis also recommends research to design and incorporate courses within the school's curricula that focus on developing coping skills, as well as conflict resolution skills, with a focus on helping reduce future school shootings.

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<sup>213</sup> Walker et al., "10 Years. 180 School Shootings. 356 Victims."

## LIST OF REFERENCES

- a Columbine site. "Dylan Klebold's Writing." August 10, 2020.  
<http://www.acolumbinesite.com/dylan/writing.php>.
- Adams, Noah. *Profile: Eric Harris and Dylan Klebold, Columbine High School Shooters*. Washington, DC: NPR, 1999. Proquest.
- American Academy of Pediatrics. "Video Gaming Can Lead to Mental Health Problems." *American Academy of Pediatrics*, January 17, 2011.
- Anderson, Craig A., Akiko Shibuya, Nobuko Ichori, Edward L. Swing, Brad J. Bushman, Akira Sakamoto, Hannah R. Rothstein, and Muniba Saleem. "Violent Video Game Effects on Aggression, Empathy, and Prosocial Behavior in Eastern and Western Countries: A Meta-Analytic Review." *Psychological Bulletin* 136, no. 2 (March 2010): 151–173. <http://dx.doi.org.libproxy.nps.edu/10.1037/a0018251>.
- Anderson, Craig A., Douglas A. Gentile, and Katherine E. Buckley. *Violent Video Game Effects on Children and Adolescents: Theory, Research, and Public Policy*. Oxford, England: Oxford University Press, 2007.
- Appelbaum, Mark, Sandra Calvert, Kenneth Dodge, William McDougall, Sandra Graham, Gordon Nagayama Hall, and Sherry Hamby et al. *Technical Report on the Review of the Violent Video Game Literature*. Washington, DC: APA Task Force on Violent Media Online Gaming: Demographics, Motivations, and Information Processing, 2015. <https://www.apa.org/pi/families/review-video-games.pdf>.
- Auberon, Xavier. "XA Gaming | Death Race | Arcade." August 9, 2019. YouTube. Video, 4:24. <https://www.youtube.com/watch?v=EiEFZX5Co7U>.
- Bean, Anthony, and Gary Groth-Marnat. "Video Gamers and Personality: A Five-Factor Model to Understand Game Playing Style." *Psychology of Popular Media Culture* 5, no. 1 (January 2016): 27–38. <https://doi.org/10.1037/ppm0000025>.
- Blumenthal, Ralph. "'Death Race.'" *New York Times*, December 28, 1976. <https://www.nytimes.com/1976/12/28/archives/death-race-game-gains-favor-but-not-with-the-safety-council.html>.
- Bromann, Daniel, and Tobias Greitemeyer. "Why Do People Play Violent Video Games? Storytelling and Meaningful Choices May Play a Part." *SAGE Publications* 6, no. 6 (April 9, 2015): 646–652. <https://doi.org/10.1177/1948550615578177>.

- Campbell, Colin. "A Brief History of Blaming Video Games for Mass Murder." *Polygon* (blog). March 10, 2018. <https://www.polygon.com/2018/3/10/17101232/a-brief-history-of-video-game-violence-blame>.
- Center for Homeland Defense and Security. *CHDS K-12 School Shooting Database*. Monterey, CA: Center for Homeland Defense and Security, 2019. [https://www.chds.us/ssdb/resources/uploads/2019/04/K12-SSDB\\_Findings-Summary\\_032219.pdf](https://www.chds.us/ssdb/resources/uploads/2019/04/K12-SSDB_Findings-Summary_032219.pdf).
- Chan, Elaine, and Peter Vorderer. "Massively Multiplay Online Game." In *Playing Video Games: Motives, Responses, and Consequences*, edited by Peter Vorderer and Jennings Bryant, 181–94. Mahwah, NJ: Lawrence Erlbaum Associates Publishers, 2006.
- Cherney, Elena, Jonathan Gatehouse, and Charles Gills. "Teenaged Killers Seen as Strange, but Not Monsters: Out of Place in Suburbia: Gunmen Obsessed with Killing, Nazi Regalia: [National Edition]." *National Post*, April 22, 1999. ProQuest.
- Cicchirillo, Vincent. "Online Gaming: Demographics, Motivations, and Information Processing." In *Handbook of Research on Digital Media and Advertising: User Generated Content Consumption*, edited by Matthew S. Eastin, Terry Daugherty, and Neal M. Burns, 456–479. Hershey, PA: IGI Global, 2011. <http://doi:10.4018/978-1-60566-792-8.ch023>.
- Cole, Helena, and Mark D. Griffith. "Social Interactions in Massively Multiplayer Online Role-Playing Gamers." *CyberPsychology & Behavior* 10, no. 4 (August 21, 2007): 608–609. <https://doi.org/10.1089/cpb.2007.9988>.
- Craig, Tim. "Mental-Health Counselors Twice Advised against Committing Nikolas Cruz before School Shooting, Records Show." *Washington Post*, March 19, 2018. [https://www.washingtonpost.com/national/florida-law-that-forces-mental-health-treatment-faces-new-scrutiny-after-parkland-school-shooting/2018/03/18/cd7376c2-262a-11e8-874b-d517e912f125\\_story.html](https://www.washingtonpost.com/national/florida-law-that-forces-mental-health-treatment-faces-new-scrutiny-after-parkland-school-shooting/2018/03/18/cd7376c2-262a-11e8-874b-d517e912f125_story.html).
- Cullings, Forest. "Alt-Right Influence on the Radicalization of White Nationalists in the United States, According to Significance Quest Theory." Master's thesis, Naval Postgraduate School, 2020.
- Cvitesic, Magdan D. "World of Warcraft: 10 Reasons this MMORPG Is Still Popular after 15 Years." *THEGAMER*, December 1, 2019. <https://www.thegamer.com/world-warcraft-mmorpg-reasons-popular/>.

- Densley, James, and Jillian Peterson. "Opinion: We Analyzed 53 Years of Mass Shooting Data. Attacks Aren't Just Increasing, They're Getting Deadlier." *Los Angeles Times*, September 1, 2019. <https://www.latimes.com/opinion/story/2019-09-01/mass-shooting-data-odessa-midland-increase>.
- Dillon, Robert. *The Golden Age of Video Games*. Boca Raton, FL: CRC Press, 2016. <https://doi-org.libproxy.nps.edu/10.1201/b10818>.
- DuChateau, Christian. "What We Know so Far about the Santa Fe School Shooting." CNN, May 18, 2018. <https://www.cnn.com/2018/05/18/us/what-we-know-santa-fe-school-shooting/index.html>.
- Elder, Pat. "Target Practice." *The Humanist; Washington, D.C.* 78, no. 4 (August 2018): 6–8. ProQuest.
- Engelhardt, Christopher R., Micah O. Mazurek, Joseph Hilgard, Jeffrey N. Rouder, and Bruce D. Bartholow. "Effects of Violent-Video-Game Exposure on Aggressive Behavior, Aggressive-Thought Accessibility, and Aggressive Affect among Adults with and without Autism Spectrum Disorder." *SAGE Publications* 26, no. 8 (2015): 1187–1200. <https://doi.org/10.1177/0956797615583038>.
- Entertainment Software Association. *2019 Essential Facts about the Computer and Video Game Industry*. Washington, DC: Entertainment Software Association, 2019. <https://www.theesa.com/wp-content/uploads/2019/05/2019-Essential-Facts-About-the-Computer-and-Video-Game-Industry.pdf>.
- Erickson, William H. *The Report of Governor Bill Owens' Columbine Review Commission*. State of Colorado: Columbine Review Commission, 2001. <https://schoolshooters.info/sites/default/files/Columbine%20-%20Governor's%20Commission%20Report.pdf>.
- Federal Communication Commission. "The FCC and Freedom of Speech." Last updated/reviewed December 30, 2019. <https://www.fcc.gov/consumers/guides/fcc-and-freedom-speech>.
- Feng, Wendy, Danielle Ramo, Steven Chan, and James Bourgeois. "Internet Gaming Disorder: Trends in Prevalence 1998–2016." *U.S. National Library of Medicine National Institutes of Health*, vol. 75 (June 16, 2017): 17–24. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5582011/>.
- Ferguson, Christopher J. "Does Media Violence Predict Societal Violence? It Depends on What You Look at and When." *Journal of Communication* 65, no. 1 (February 2015): E1–E22. <https://doi.org/10.1111/JCOM.12129>.

- Gentile, Douglas A., Kira Bailey, Daphne Bavelier, Jeanne Funk Brockmyer, Hilarie Cash, Sarah M. Coyne, and Andrew Doan et al. "Internet Gaming Disorder in Children and Adolescents." *American Academy of Pediatrics* 140 (Supplement 2) (April 19, 2017): S81–S85. <https://doi.org/10.1542/peds.2016-1758H>.
- Goodman, Cindy Krischer. "Gamers and Mass Shooters: Do Violent Video Games Really Make a Person More Aggressive?." *South Florida Sun Sentinel*, August 9, 2019. <https://www.sun-sentinel.com/health/fl-ne-video-games-20190809-ooidsuosojesrihtrzvjdjnxou-story.html>.
- Gough, Christina. "Global World of Warcraft Expansion Pack 1st Day Sales 2007–2018." *statista*, September 6, 2019. <https://www.statista.com/statistics/370010/world-of-warcraft-expansion-pack-sales/#statisticContainer>.
- Hayes, Christal. "Texas School Shooting: Gunman Targeted Daughter because She Rejected Him, Mom Says." *USA Today*, May 20, 2018. <https://www.usatoday.com/story/news/2018/05/20/texas-school-shooting-suspect-targeted-teen-who-rejected-him-mom-says/626861002/>.
- Hitchens, Michael. "A Survey of First-Person Shooters and Their Avatars." *The International Journal of Computer Game Research* 11, no. 3 (December 2011). [http://gamestudies.org/1103/articles/michael\\_hitchens](http://gamestudies.org/1103/articles/michael_hitchens).
- Hunter, William. "Tennis for Two—The Original Video Game." September 10, 2017. YouTube. Video, 0:59. [https://www.youtube.com/watch?v=6PG2mdU\\_i8k](https://www.youtube.com/watch?v=6PG2mdU_i8k).
- Hussain, Zaheer, and Mark D. Griffiths. "Excessive Use of Massively Multi-Player Online Role-Playing Games: A Pilot Study." *International Journal of Mental Health and Addiction* 7, no. 563 (February 20, 2009): 563–571. <https://doi.org/10.1007/s11469-009-9202-8>.
- Kain, Erik. "'Call of Duty' Totally Dominated the 20 Best-Selling Video Games of the Decade." *Forbes*, January 17, 2020. <https://www.forbes.com/sites/erikkain/2020/01/17/the-20-best-selling-video-games-of-the-decade/#18c74b56f6db>.
- . "The 20 Best-Selling Video Games of 2019." *Forbes*, January 17, 2020. <https://www.forbes.com/sites/erikkain/2020/01/17/the-20-best-selling-video-games-of-2019/#5ea099e973da>.
- Kent, Steven L. *The Ultimate History of Video Games*. vol. 2. New York: Crown, 2010.
- Kovatch, Keaton M. "Call to Duty: Video Game Effects on the Military." Master's thesis, Naval Postgraduate School, 2018. <http://hdl.handle.net/10945/60422>.

- Kovner, Josh, and Dave Altimari. "Courtant Exclusive: More than 1,000 Pages of Documents Reveal Sandy Hook Shooter Adam Lanza's Dark Descent into Depravity." *Hartford Courant*, December 9, 2018. <https://www.courant.com/news/connecticut/hc-news-sandy-hook-landa-new-documents-20181204-story.html>.
- Langman, Peter. "Rampage School Shooters: A Typology." *KidsPeace, The Lee Salk Center for Research* 14, no. 1 (2009): 79–86. <https://doi.org/10.1016/j.avb.2008.10.003>.
- . "The Enigma of Adam Lanza's Mind and Motivations for Murder." *National Behavioral Intervention Team Association* 1.1 (February 3, 2016): 1–9.
- . *The Search for Truth at Columbine*. Allentown, PA: School Shooters Info, 2014. [https://schoolshooters.info/sites/default/files/search\\_for\\_truth\\_at\\_columbine\\_2.2.pdf](https://schoolshooters.info/sites/default/files/search_for_truth_at_columbine_2.2.pdf).
- . *Why Kids Kill: Inside the Minds of School Shooters*. London: Palgrave MacMillan, 2009.
- Limelight Networks. *The State of Online Gaming—2019*. Scottsdale, AZ: Limelight Networks, 2019. [https://img03.en25.com/Web/LLNW/%7B02ca9602-173c-43a4-9ee1-b8980c1ea459%7D\\_SOOG2019\\_MR\\_8.5x11.pdf](https://img03.en25.com/Web/LLNW/%7B02ca9602-173c-43a4-9ee1-b8980c1ea459%7D_SOOG2019_MR_8.5x11.pdf).
- Malloy, Dannel P. *Final Report of the Sandy Hook Advisory Commission*. Hartford, CT: Sandy Hook Advisory Commission, 2015. [https://portal.ct.gov/-/media/Malloy-Archive/Sandy-Hook-Advisory-Commission/SHAC\\_Final\\_Report\\_3-6-2015.pdf?sc\\_lang=en&hash=BDF55EC4ACE382E87941870AD9BF2A34](https://portal.ct.gov/-/media/Malloy-Archive/Sandy-Hook-Advisory-Commission/SHAC_Final_Report_3-6-2015.pdf?sc_lang=en&hash=BDF55EC4ACE382E87941870AD9BF2A34).
- Marjory Stoneman Douglas High School Public Safety Commission. *Initial Report, Submitted to the Governor, Speaker of the House of Representatives and Senate President*. Tallahassee, FL: Florida Department of Law Enforcement, 2019. <http://www.fdle.state.fl.us/MSDHS/CommissionReport.pdf>.
- McFerran, Damien. "Feature: How Mortal Kombat Defined the Console War between Sega and Nintendo." Nintendo, December 29, 2018. [https://www.nintendolife.com/news/2018/12/feature\\_how\\_mortal\\_kombat\\_defined\\_the\\_console\\_war\\_between\\_sega\\_and\\_nintendo](https://www.nintendolife.com/news/2018/12/feature_how_mortal_kombat_defined_the_console_war_between_sega_and_nintendo).
- National Coalition against Censorship. "A Timeline of Video Game Controversies." 2019. <https://ncac.org/resource/a-timeline-of-video-game-controversies>.

- O'Matz, Megan. "Violent Video Games May Have Primed the Parkland School Shooter." *South Florida Sun Sentinel*, April 29, 2019. <https://www.sun-sentinel.com/local/broward/parkland/florida-school-shooting/fl-ne-nikolas-cruz-mental-health-services-20190425-story.html>.
- O'Matz Megan, and Brittany Wallman. "A Mass Murderer's Digital Trail: Nikolas Cruz Dropped Crumbs All across the World Wide Web." *TCA Regional News*, Chicago, October 27, 2018. Proquest.
- O'Toole, Mary Ellen. *The School Shooter: A Threat Assessment Perspective*. Washington, DC: Federal Bureau of Investigation, 1999. <https://www.fbi.gov/file-repository/stats-services-publications-school-shooter-school-shooter>.
- Office of the Child Advocate. *Shooting at Sandy Hook Elementary School*. Hartford, CT: Office of Governmental Accountability, 2014. <https://www.ct.gov/oaca/lib/oaca/sandyhook11212014.pdf>.
- Olmeda, Rafael. "Parkland Shooter Nikolas Cruz Brags on Cellphone Videos, 'I'm Going to be the Next School Shooter.'" May 30, 2018. <https://www.sun-sentinel.com/local/broward/parkland/florida-school-shooting/fl-reg-florida-school-shooting-phone-video-release-20180530-story.html>.
- Pierre-Louis, Stanley. "ESA Leadership Desk: Science Says Video Games Don't Cause Real-World Violence." Entertainment Software Association, 2020. <https://www.theesa.com/perspectives/esa-leadership-desk-science-says-video-games-dont-cause-real-world-violence/>.
- Pilkington, Ed. "Sandy Hook Report—Shooter Adam Lanza Was Obsessed with Mass Murder." *The Guardian*, November 25, 2013. <https://www.theguardian.com/world/2013/nov/25/sandy-hook-shooter-adam-landa-report>.
- Polman, Hanneke, Bram Orobio de Castro, and Marcel A. G. van Aken. "Experimental Study of the Differential Effects of Playing versus Watching Violent Video Games on Children's Aggressive Behavior." *Wiley-Liss, Inc.* 34, no. 3 (2008): 256–264. <https://doi.org/10.1002/ab.20245>.
- Przybylski, Andrew K., and Netta Weinstein. "Violent Video Game Engagement Is Not Associated with Adolescents' Aggressive Behaviour: Evidence from a Registered Report." *The Royal Society Publishing* 6, no. 2 (January 18, 2019): 1–16. <https://dx.doi.org/10.6084/m9.figshare.c.4392665>.
- Robbins, M. Brandon. "Games and Violence." *Library Journal* 138, no. 5 (March 15, 2013): 88-n/a. Proquest.

*RTTNews*. “Trump Worried over Violent Video Games Shaping Young Minds.” February 2018. Proquest.

Sandoval, Edgar, Dan Friedman, and Bill Hutchinson. “News’ Report on Sandy Hook Gunman Adam Lanza’s Video-Game-Style Slaughter Score Sheet Inspires Calls in D.C. to Stiffen Regulation of Violent Games.” *New York Daily News*, March 19, 2013. <https://www.nydailynews.com/news/national/crackdown-urged-violent-games-lanza-report-article-1.1292402>.

Sedensky, Stephen J. III. *Report of the State’s Attorney for the Judicial District of Danbury on the Shootings at Sandy Hook Elementary School and 36 Yogananda Street, Newtown, Connecticut on December 14, 2012*. Hartford, CT: Office of the State’s Attorney, Judicial District of Danbury, 2013. <https://portal.ct.gov/-/media/DCJ/SandyHookFinalReportpdf.pdf>.

Staff and Agencies. “Columbine Parents Sue Entertainment Companies.” *The Guardian*, April 24, 2001. <https://www.theguardian.com/technology/2001/apr/24/internetnews1>.

Sullivan, Ronald. “William A. Higinbotham, 84; Helped Build First Atomic Bomb.” *New York Times*, November 15, 1994. <https://www.nytimes.com/1994/11/15/obituaries/william-a-higinbotham-84-helped-build-first-atomic-bomb.html?auth=linked-google1tap>.

Tretkoff, Ernie. “October 1958: Physicist Invents First Video Game.” *American Physical Society* 17, no. 9 (October 2008). <https://www.aps.org/publications/apsnews/200810/physicshistory.cfm>.

U.S. Army. “America’s Army Game Series.” August 15, 2020. <https://www.americasarmy.com/>.

UFHealth University of Florida. “Baker Act.” August 15, 2020. <https://ufhealth.org/baker-act>.

Wadhams, Nick. “Columbine Suit against Game Dismissed.” MRT, March 3, 2002. <https://www.mrt.com/news/article/Columbine-Suit-Against-Game-Dismissed-7811935.php>.

Walker, Christina, Sam Petulla, Kenneth Fowler, Alberto Mier, Michelle Lou, Brandon Griggs, and Samira Jafari. “10 Years. 180 School Shootings. 356 Victims.” CNN, 2019. <https://www.cnn.com/interactive/2019/07/us/ten-years-of-school-shootings-trnd/>.

- Washington Post Staff. “Red Flags: The Troubled Path of Accused Parkland Shooter Nikolas Cruz.” *The Washington Post*, March 10, 2018. <https://www.washingtonpost.com/graphics/2018/national/timeline-parkland-shooter-nikolas-cruz/>.
- Yasmeen, Abutaleb. “‘What’s Inside the Hate-Filled Manifesto Linked to the Alleged El Paso Shooter (Suspect Patrick Crusius).’” *The Washington Post*, August 4, 2019. <https://www.washingtonpost.com/politics/2019/08/04/whats-inside-hate-filled-manifesto-linked-el-paso-shooter/>.
- Yee, Nick. “The Psychology of Massively Multi-User Online Role-Playing Games: Motivations, Emotional Investment, Relationships and Problematic Usage.” In *Avatars at Work and Play. Computer Supported Cooperative Work*, edited by Ralph Schroeder and Ann-Sofie Axelsson, 187–207. vol. 34. Berlin/Heidelberg, Germany: Springer, Dordrecht, 2006. [https://doi.org/10.1007/1-4020-3898-4\\_9189](https://doi.org/10.1007/1-4020-3898-4_9189).
- YouTube. “Call of Duty: Modern Warfare | Multiplayer Reveal Trailer.” August 1, 2019. Video, 3:02. <https://www.youtube.com/watch?v=J7Ivdq5E-fs>.
- . “The Top 20 Fatalities in Mortal Kombat History.” November 26, 2018. Video, 6:57. <https://www.youtube.com/watch?v=vrGodH-tnos>.
- . “Wolfenstein 3D Trailer.” October 23, 2014. Video, 1:01. [https://www.youtube.com/watch?v=7P\\_dic-pSKo](https://www.youtube.com/watch?v=7P_dic-pSKo).
- . “World of Warcraft Shadowlands—Official Gameplay Overview Trailer | Blizzcon 2019.” November 1, 2019. Video, 2:16. <https://www.youtube.com/watch?v=0j9FblQUzQU>.

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