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Short Communication Open Access

Guns and Games: The Relationship between Violent Video Games and Gun Crimes in America

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Short Communication

Jim Morrison, the Door's inimitable front-man, struck a chord when he said, "Whoever controls the media, controls the mind". Media violence has to be one of the most commonly repeated, and most misinterpreted, terms of our time. A needless flurry of fear stems from the sensational and inciting ways in which the media feed misinformation to the public. When an explicitly violent act occurs, we tend to experience what psychologists call confirmation bias, a string of cognitive preconceptions that involve an individual's desire to relate the incident to previously held beliefs.

For example, on June 10, 2014, armed with an AR-15 assault-style rifle, Jared Padgett, a 15-year-old freshman student, entered Reynolds High School and shot a 14-year old classmate and then himself with the same weapon. Inquiries into Padgett's background uncovered the fact that he liked first-person shooter games, which naturally led pundits to focus on violent video games as a cause of school shootings, leaving people to wonder if this pastime exacerbates the tendencies of young people to engage in real world violence.

Parents, of course, should supervise their children's behaviors and pastimes, but the aim of this paper is to highlight the benefits of video games, including violent video games, and then suggest that the real cause of school shootings is America's obsessive gun culture. Of the tens of millions of people who play video games, scientific research shows that very few commit acts of violence, certainly not enough to say that, statistically speaking, video games play any significant role in real-world violent behavior.

Cognitive Benefits of Gaming

The conventional, archaic, and incorrect beliefs about video games seem to be, ever so slowly, fading away. Scientific research has shown that certain games are anything but intellectually lazy or sedating. To the contrary, research shows that playing video games promotes a wide range of cognitive skills. And, to the myth that video games cause violent behavior, this is particularly true for titles that are violent in nature; for example, the Halo series, the Grand Theft Auto titles, and especially first-person shooter video games. A superior shooter video game requires a participant to display heightened and more accurate attention allocation, higher spatial resolution in visual processing, and enhanced mental rotation abilities [1].

Furthermore, a recent meta-analysis concluded that an average player's spatial skills improves significantly after playing commercially available shooter video games, and that this improvement in spatial skill awareness becomes more prominent as the participant becomes more familiar with the gaming requirements [2]. A longitudinal study spanning some 25-years established the power of spatial skills in predicting achievement in science, technology, engineering, and mathematics (STEM) [3]. Unsurprisingly, as we live in an age dependent on technology, STEM areas of expertise have been repeatedly linked to long-term career success and are predicted to be especially critical in the next seven to eight decades. The benefits cannot be overstated, as preliminary research has also demonstrated that these cognitive advantages result in measurable changes in neural processing and efficiency. Take a regularly cited functional magnetic resonance imaging (fMRI) study, for example. Carried out in 2011, the study found that the mechanisms controlling attention allocation (e.g., the fronto-parietal network) were less active during a challenging pattern-detection task in gamers, as opposed to non-gamers. This finding lead the researchers to suggest that, by using an intricate type of internal filter, shooter game players allocated their attentional resources more efficiently. An average gamer also displayed an ability to filter out irrelevant information more effectively [4]. These enhanced cognitive abilities could very well be a by-product of the visually lush three-dimensional navigational spaces, a pre-requisite for most modern video games. The furiously paced environment of gaming demands very real, split-second decision making abilities, much like a fast paced, modern day work environment.

Finally, in relation to cognitive benefits, video games seem to be associated with one additional benefit: enhanced creativity. In recent times, evidence has emerged showing that playing any kind of video game, regardless of whether or not it is violent in nature, enhances a youth's creative capacity. Among a sample of more than 450 12-year-old students, for example, regular video gaming was positively associated with creativity [5]. Interestingly, this study also took children's use of other forms of technology into account-namely the Internet and cell phones-but did not find the same levels of enhanced creativity with these technologies.

Motivational Benefits of Gaming

Game designers are engineers of engagement, and many seem to possess an uncanny ability to draw people-regardless of age-into a virtual, sometimes violent, environment. By providing players with specific, immediate, tailored feedback regarding very personal efforts, an incentive is offered, one that encourages and rewards ingenuity [6]. The feedback and rewards, often in the form of coins, points and unlocked levels serve to develop players' capabilities. Game researchers refer to this phase of progression as the "zone of proximal development". By introducing the gamer to this much researched concept, an ability to appreciate optimal levels of challenge and deviating levels of disappointment is created, and the zone introduces a gamer to new levels of appreciation for success and accomplishments [7].

Furthermore, the biggest selling games on the market are effective because each one is designed to adjust itself accordingly, often in a

dynamic manner. As the difficulty level is calibrated to correspond with varying levels of ability, the gaming environment demands more dexterity, more ingenuity. Additionally, certain games demand quicker reaction times and the capacity to conjure up more complex solutions [8]. This, in turn, along with a fresh appreciation for the fine line between success and failure, results in healthier perspectives regarding perceived challenges and shortcomings [9].

Emotional Benefits of Gaming

Several studies found video gaming to be an efficient medium by which children and adolescents generate positive feelings. Studies suggest that playing puzzle video games like Tetris, for example, not only improve players' moods but promote relaxation, thus helping ward off anxiety [10]. Games like the aforementioned Tetris require minimal interfaces and very little commitment. These two factors coupled with a high degree of accessibility help generate intense positive emotional experiences [11]. Similar to the "high" many a running enthusiast speaks about, gamers often discuss something psychologists call flow, where an individual is immersed in a personally stimulating activity that elicits a high sense of control while simultaneously encouraging a loss of self-consciousness [12]. Academics have researched and documented flow-related experiences for decades, with many repeatedly linking it to a number of positive outcomes for adolescents, including academic improvements in high school, improved self-esteem, and decreased levels of anxiety [13]. Correlational studies also suggest that individuals regularly play games, violent titles included, to regulate their emotions [14]. Although video games can trigger a host of negative feelings, including anger, anxiety, and melancholy, the emotion-regulating properties of video gaming seem to outweigh any negative associations.

Videos and Violence

If video games, violent titles included, offer such cognitive, motivational and emotional benefits, how can they also be blamed for such rampant gun violence in the U.S.? Following such tragedies as Columbine and Sandy Hook, some media outlets found solace in using violent media as an all too convenient scapegoat. Interestingly, the Netherlands and South Korea, two nations that consume more video games per capita than the U.S., also experience far less violent crime than their American counterparts. Surely, one could argue that a far more ominous problem has manifested something far more menacing and malignant than any form of violent media.

A belief relevant to the area of violent media controversy is the Moral Panic Theory, elucidated ever so clearly by David Gauntlett [15]. In his view, as soon as a new, unfamiliar medium arrives on the scene, certain sections of society voice their anger, using preconceived negative assumption as a catalyst to fuel such un-acceptance [15]. It is important to remember that, when compared with TV, cinematic experiences and cell phones, mainstream video gaming is still in its infancy. Typically, according to Gauntlett [15], general society tends to side with a pre-existing belief, something he refers to as a "herd mentality," rather than impartially observing and objectively evaluating the new phenomenon. Ultimately, after several years, sometimes decades, unwarranted and biased fears die out. However, they ultimately resurface when another new, supposedly menacing medium arises.

In the late 1940s parents around the world read all about the evils of watching TV, and how it could lead to the mental paralysis of children, while the 1950s saw comic books being blamed for juvenile delinquency. Some self-professed experts even testified before Congress that Batman and Robin encouraged not only delinquency but homosexuality. Many argued that although the Caped Crusaders wore questionable attire, the duo could hardly be blamed for the promotion of anarchy. This era also brought similar claims about music. Decades before Marilyn Manson and Eminem were making headlines; Elvis Presley was blamed for inciting impure thoughts. Covering the eyes of their loved ones, concerned parents voiced their outrage, lambasting the cultural icon and his vigorous hip thrusting.

In 2013, in an effort to dispel unwarranted criticism of gaming, President Obama granted the Centers for Disease Control and Prevention a budget of $10 million to study the relationship between media violence and real-world violence. The study, carried out by professors Christopher Ferguson and Cheryl Olson, aimed to determine once and for all whether or not there was a connection linking violent video games to violent behavior, especially school shootings. Their study, published in the *Journal of Communication*, found no positive link between violence in society and violent video games. In fact, the researchers found that playing games like *Grand Theft Auto*, for example, had a calming effect on youths, especially those with attention deficit symptoms. From various ethnic groups, 377 American children with an average age of 13 took part in Ferguson and Olson's study. In addition to being part of a federally-funded project that examines the overall effect of video game violence on youths, every one of the children had clinically elevated attention deficit or depressive symptoms. Ferguson and Olson's findings contradicted the popular assumption that violent video games directly contributed to elevated levels of aggression in youth, particularly those suffering with mental health problems [16].

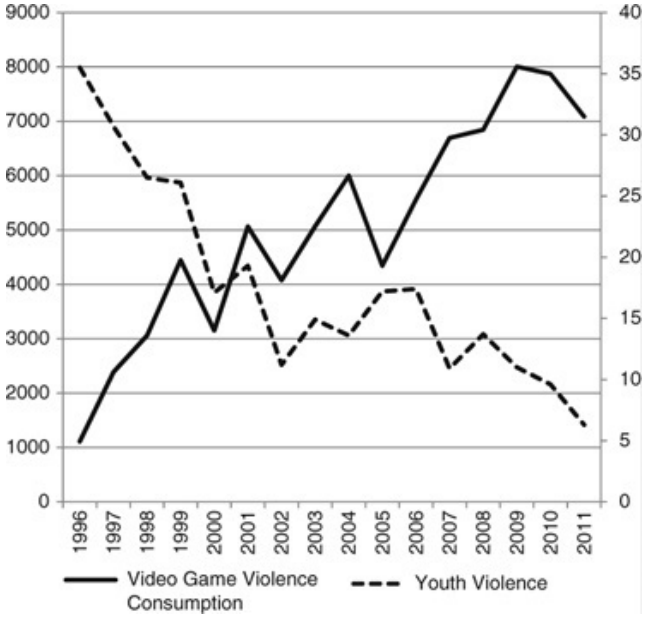

Figure 1: Ferguson's graph.

Interestingly, Ferguson carried out another notable study on this alleged relationship and found that even though violent video game and movie consumption was increasing at the time, societal violence was not. Using the Entertainment Software Ratings Board (ESRB),

Ferguson calculated the violent content for the most popular video games over a 15-year timeframe, from 1996 to 2011. Comparing federal data on youth violence during the same time period with ESRB-estimated violence content, Ferguson noticed that rates of youth violence dropped while consumption of violent video games increased. This trend is illustrated on Ferguson's graph below [17] (Figure 1).

Ferguson concluded

Though video game sales have skyrocketed, youth violence has plummeted to its lowest levels in 40 years according to government statistics. Secondly, it has been increasingly recognized that much of the early research on violent video games linking them to increased aggression was problematic: most studies used outcome measures that had nothing to do with real-life aggression and failed to control carefully for other important variables, such as family violence and mental health issues. More recent research has found that children who play violent video games are not any more violent than nongaming kids, nor intend on harming others in any identifiable fashion [18].

A meta-analysis carried out by the American Psychological Association echoed these sentiments. Isabela Granic et al. [19] at Radboud University Nijmegen in The Netherlands conducted research to show the constructive link between computer games and mental wellbeing. The research, which was published in an issue of *American Psychologist*, found that modern video games are incredibly socially orientated, largely thanks to the growth of online gaming environments, and that many of these games improve problem-solving skills and nurture creativity [19].

Focus on Guns, not Games

When a public attack occurs, if the perpetrator of the violent crime happens to be a young male, we expect to hear people ask the following: "Do you think violent video games played a role, maybe even a leading role?". An assumption that the removal of video games will automatically result in a safer, more harmonious world is as senseless as it is laughable. Instead of demonizing video games, let's focus on a very obvious problem within the U.S., and that happens to be the pervasive gun culture. Whenever tougher legal measures are mentioned, fervent gun rights activists recite the Second Amendment. However, instead of being the product of some virginal, unsullied understanding, this amendment has become a by-product of political and public debate.

For every U.S. soldier killed in Afghanistan during 11 years of war, at least 13 children were shot and killed in America, and, every day, on average, seven children were shot dead. Over the course of a decade in America, between 2002 and 2012, at least 28,000 children and teens, 19-years-old and younger, were killed with guns, with teenagers between the ages of 15 and 19 accounting for almost 70 percent of youth gun deaths in the country. While police in the U.S. carry close to 897,000 guns, American civilians own approximately 270 million guns, and approximately 20 percent of gun owners own 65 percent of the guns [20].

Although very similar violent video games and movies are consumed worldwide, gun laws appear to be very different. Take the U.K., for example, a sovereign state where handguns are illegal. As well, in Britain a person must obtain a certificate and provide a valid reason for rifle or shotgun ownership. Furthermore, a person convicted of a crime cannot use a gun for five years, one of the laws that might explain Britain's extremely low homicidal rates. In America, handguns are protected by the Second Amendment and were notably used in the Virginia Tech massacre, Binghamton shootings, 2009 Fort Hood shooting, Oikos University shooting, and the Tucson shooting of 2011.

In Japan, a country known for its love of movies and video gaming, firing a gun without a license can result in a decade behind bars. If a person wishes to purchase a rifle or shotgun legally, they must undergo a rigorous application process involving written exams, police authorization, and extensive background checks. Despite a sizable population of 122 million people densely packed into cities, Japan has one of the lowest rates of homicide in the modern world.

The dangers associated with a gun in the home (e.g., increased risk of accidents, homicide, intimidation, completed suicide) outweigh the benefits, with no substantial evidence showing that having a gun in the home assists in self-defense and reduced injury [21].

It highlights the distortion of the debate when, instead of discussing the regulation of actual weapons in the real world, some wish to focus on the regulation of virtual firearms in virtual worlds. While a distinctly "American" market for guns exists, no "American" market for video games exists, just an international one. Look at the best-selling First Person Shooter games in the U.S. and Europe: they are practically identical. And yet, while the youth of America and Europe play almost identical video games, the rates of gun violence in the U.S. are far greater.

Why are so many quick to cite research that sheds negative light on video games, yet so slow to embrace the positive findings? Recent research suggests that improper social behavior played out in a virtual environment can increase a player's heightened sensitivity toward the moral codes they violated. Professor Matthew Grizzard [22] of the University at Buffalo Department of Communication, stated; "rather than leading players to become less moral, our research suggests that violent video-game play may actually lead to increased moral sensitivity, this may, as it does in real life, provoke players to engage in voluntary behavior that benefits others" [22]. His paper, "Being Bad in a Video Game Can Make Us More Morally Sensitive," is a meticulously crafted piece of academic research, and Gizzard concisely outlines the many benefits of video gaming.

Every age is renowned for a unique form of storytelling, and video gaming happens to be a vital part of our culture, the myths surrounding it notwithstanding.

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