***Do Video Games Bring Violence? A Technical Review of Evidence and Myths***

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***Abstract- The theory and fear that video games cause violence is a poor argument against kids playing video games. Studies that concluded video games do cause violence only recorded short-term aggression. Studies that recorded short- and long-term aggression found such an insignificant cause-and-effect relationship that it would be considered nonexistent. Official court cases found no link between video games and aggression, nor between crime statistics and video game sales.***

***Index Terms – video games, violent video games, aggression, violence, crime, psychological, legal.***

I. INTRODUCTION

Throughout the 21st century, video games have been steadily growing in popularity, sparking public concern that they may contribute to aggression and violent behavior. Countless studies have gone back and forth on this topic, but no one has come to conclusive proof that video games do not or do cause violence. Studies often mistake short-term aggression for signs of physical aggression; others find physical aggression but cannot be certain that the cause was primarily due to playing video games. Still today, parents and scientists ask the question, do video games cause their players to be more violent towards others?

II. METHODS

The method of investigation for this research project is literature review. Only peer-reviewed published journal articles will be used as supporting evidence.

III. DO VIDEO GAMES BRING VIOENCE? A TECHNICAL REPORT OF EVIENCE AND MYTH

            Do video games lead to real-world violence? Current research suggests that video games do not cause real-world violence but instead may lead to an increase in short-term aggression. This conclusion is supported by the distinction between aggression and actual violence in psychological studies [1], data between violent video game sales and violent crime rates share no correlation [2], and experts and legal officials reject the link of video games causing real-world violence [3].

A. *Differentiation*

            Psychological studies that study violence must distinguish between aggression and actual violence or physical aggression. Aggression usually refers to increased irritability. Hostile thoughts or competitive behavior can be observed shortly after testing in a controlled lab environment. However, short-term aggression does not mean long-term violence, so if the study wishes to be somewhat reliable, it must also study and record the long-term effects. One popular study that many believe to be conclusive proof that violent video games (VVGs) cause physical aggression has four critiques from another writer, Ferguson. The four critiques given were:

(i) many studies that support such a link use measures of “nonserious aggression” (e.g., accessibility of aggression related words, aggression related feelings) that inflate effect-size estimates; (*ii*) many studies do not include important covariates as statistical controls and hence any observed effects may be spurious consequences of third variable relationships; (*iii*) there is a bias to publish studies supporting a VGV → aggression link as opposed to those reporting a null effect; and (*iv*) even if one accepts the existence of a VGV → aggression relationship, the estimated effect size typically reported is exceedingly weak [1].

The study will focus on (*i*), which indicates that studies mostly record “nonserious aggression,” meaning they record aggressive words or irritated feelings to bolster their data in favor of their argument. And (*iv*), which expresses that even if VGV (video game violence) exists and happens, it would be too insignificant for actual changes in personality and behavior. The method for testing long-term aggression involved recording physical aggression from VVG and, at most three weeks later, recording another sign of physical aggression. They found that physical aggression did occur weeks later; however, they also found that the effect size is only 1%, meaning video games only cause 1% of the recorded aggression, which, for most researchers, is too small to consider.

Another study [4] utilized sound and AI players to increase aggression towards the examinees; however, although there was some increase in immediate violence, the study did not investigate violent behavior or observe any during testing. The data found showed that even with short exposure to aggression, no examinees showed divisive proof that they would harm someone after being exposed to a video game. In the end, the data concluded that violent games do not affect individuals with autism spectrum disorder (ASD) differently than typically developing individuals (TD). The data showed that people with ASD showed no signs of aggression [4]. Both studies prove that while video games can cause short-term aggression, the likelihood of long-term and physical aggression is unlikely. This indicates that there is a significant distinction between aggression and physical aggression, which should be considered for future studies on the impact of video games on violence.

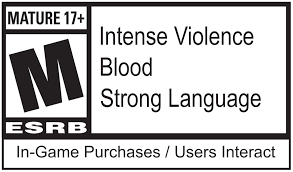
B. *Divergence*

One of the strongest ways to determine whether video games cause violence is through national and international crime data. Since the beginning of the 21st century, video game sales have continued to rise. However, international crime did not share the same trajectory. According to this study [2], “crime data compared to video game sales, implying higher video game play rates, shows a decrease in property and violent crime in areas where violent video game play is increased” [2]. According to the data, crime declined in areas where VVG sales increased, thus disproving the theory that video games will increase violent crimes.

Another study [5] wished to study why countries differ in their homicide and suicide rates. The study focused on three distinct factors: economics, gun ownership, and video games. This report will focus solely on the data regarding the relationship between video games and violence. The study reported three main theories that can cause aggression from video games. The first theory is named Social Learning Theory. Bandura, the man who created the theory, suggests that violent behavior in video games can reinforce aggression in kids because kids learn from observation. Future studies have yet to find any evidence of this effect. The second theory is called the Selection Effect. This theory posits that the connection is the opposite, where VVGs are chosen by already aggressive players rather than VVGs making their players aggressive. The last theory is the spurious correlation theory. This theory suggests that any link found between VVG, and aggression is only coincidental. They support this by showing that instances of crime after VVG occur so rarely; therefore, they cannot conclude that the cause is the VVG. Some studies using this theory found the same results as study [2] did, where crime rates decreased as video game play increased.

C. *Consensus*

Legal experts and professional organizations have largely rejected the claim that video games cause real-world violence. Like other studies already used in this report, study [3] concluded that “results from these confirmatory analyses provided evidence that adolescents' recent violent video game play is not a statistically or practically significant correlate of their aggressive behaviour as judged by carers” [3]. The study stated that other studies that reached the opposite conclusion might have manipulated data to achieve the desired result, as Ferguson believed. While data shows that video games have no or little correlation to aggression, game companies have put warnings on their video game cases. The symbol indicating whether a game depicts forms of violence and is intended for an older audience is shown below in Fig. 1.



*Fig. 1. Video games' legal rating under U.S. laws shows content and age recommendation.*

            In 2011, a U.S. Supreme Court case, *Brown v. Entertainment Merchants Association*, ruled that current research failed to prove a stable connection between VVG and harmful behavior. “The case details reflect the inextricability of materiality and experience in considering video games as a form of expression.” Since they are a form of expression, the court ruled that, under the First Amendment, video games are protected unless there is unmistakable evidence of aggression, which no researcher has been able to prove [6].

IV. CONCLUSION

The theory that video games can cause real-world violence can be arguably disproved by these three methods: the distinction between aggression and actual violence in psychological studies, data between violent video game sales and violent crime rates share no correlation, experts and legal officials reject the link of video games causing real-world violence.

The connection between VVG and real-world violence continues to be a debated topic. However, the most reliable and current research suggests that the connection is either extremely weak or nonexistent. Psychological studies have shown that short-term aggression, such as irritability or competitive behavior, can increase briefly after gameplay; However, this cannot prove long-term physical violence. Effect sizes reported in studies are often too small to have any practical significance, and many use limited or non-serious measures of aggression.

Large-scale population data further weakens the argument that video games lead to violence. As violent video game sales have only increased globally, violent crime rates have generally declined or remained stable, showing a clear divergence between the two. Additionally, theories such as the selection effect and spurious correlation suggest that individuals who are already aggressive may be drawn to VVGs rather than the games causing aggression. Lastly, most non-biased research and legal rulings have found no substantial evidence to support claims that VVGs lead to criminal behavior. Putting all the conclusions together, this report strongly suggests that the data does not support concerns that video games promote violence and should be approached with greater scientific skepticism.

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