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# What Can We Learn from Violent Videogames?

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Fears that violent videogames will cause people to be more violent are understandable, but unsupported by current research — social and developmental factors are better predictors of violent behavior. In fact, some violent videogames may actually lead to the development of empathy, understanding, and even moral behavior.

On October 1, 2015, a gunman walked into his classroom at Umpqua Community College and methodically began murdering his classmates one-by-one. It feels as if these kinds of mass violence are becoming more common. Columbine (1999). Virginia Tech (2007). Fort Hood (2009). Aurora (2012). Newtown (2012). Fort Hood (again: 2014). Charleston (2015). Those are just the ones most people remember; they don't include the other 34 mass shootings since 1984. Collectively, these mass shootings have claimed 372 lives and injured 412, not including the immeasurable injury done to the families and communities of those murdered.

Just as these events seem to be becoming more commonplace, the tenor of the discussions they prompt have also fallen into a routine. Why did it happen? What can we do to prevent it? In our search for answers, it is only natural that we look for definitive explanations to make sense of the incomprehensible. Was the shooter angry? Taking revenge? Mentally ill? On drugs?

Did the shooter play videogames?

It might seem odd to mention this last question in the same breath as the others, but it is in part because of these mass murders that one of the constant themes in the academic, political, and social debate about videogames in popular culture has been whether and to what extent violent videogames promote aggressive behavior. This debate has been around longer than videogames, however, having surfaced first with film (1900s) and radio (1930s),<sup>1</sup> then comic books (Fredric Wertham's 1954 *Seduction of the Innocent*, which led to the formation of the Comic Code Authority that same year) and later television (The Family Viewing Hour, a policy overturned by the courts in 1977). Seen in this context, videogames are just the latest media to raise age-old concerns.

Our tendency to view new media with suspicion is a good thing; many would argue that we do not do enough of this now with the shift to a digital economy (e.g., Jeron Lanier's *Who Owns the Future*), our use of social media (e.g., Jon Ronson's *So You've Been Publicly Shamed*), our loss of privacy and control of our genetic code, and the abuse of social media by employers and law

enforcement (e.g., Lori Andrews' *I Know Who You Are and I Saw What You Did*), or the spiritual and humanistic implications of technology (e.g., Noreen Herzfeld's *In Our Image*). Yet, this tendency to overgeneralize can also blind us to the potential benefits of new media and even prevent us from understanding the way that media may in fact lead to the very outcomes we fear.

This article is based on three premises:

- First, questions about the impact of violent media on behavior are legitimate; we *should* be critical of the messages we consume and which we put in front of our children.
- Second, our policies and decisions in this regard should be based on evidence rather than anecdotal or conventional wisdom.
- Third, we should strive to be as open to the potential for videogames to promote positive attitudinal and behavioral outcomes as we are to their negative consequences. This is true even (and in some cases, especially) for violent videogames.

The first two premises are related, so I will start with what we *do* know about whether videogames increase violent behavior.

## Do Games Teach Violence and Aggression?

Several good publications help introduce this complex area of study,<sup>2</sup> and I will highlight some of the key findings here. We must start by examining our common beliefs about popular culture media (like videogames) and aggression. In the case of media and violence, the common-sense theory posits that the more you experience violence, the more likely you will become violent. This assertion, however, is not borne out by the literature. **Human beings are not passive receptors but active processors of our environments.** We continually strive to "make sense" of the messages around us, placing them in social, emotional, cultural, and political contexts. This is why commercial advertisements do not necessarily lead us to purchase the advertised product and why, despite having watched hundreds of hours of *The Three Stooges* and *The Road Runner*, I (and thankfully, most other people) have yet to poke my family or friends in the eyes or drop anvils on them from a great height. However, this also explains why people who have trouble distinguishing fantasy and reality, who cannot regulate their emotions, or who lack social/emotional awareness<sup>3</sup> may also be more likely to seek out violent media or to act out in violent ways. This points out another **weakness of studies that have found correlational associations linking violence and media consumption: they do not control for other explanatory factors.** For example, boys are disproportionately attracted to videogames *and* more likely to act aggressively than are girls. Thus, correlational studies might document this sex-aggression relationship or other "hidden" correlations rather than media-aggression effects.<sup>4</sup>

In *Schwarzenegger (later, Brown) vs. Entertainment Merchants Association and Entertainment Software Association (ESA)*, the ESA sued to overturn a State of California law that restricted the sale of violent videogames to minors. California contended that it had the right to protect the health and well-being of minors, while the ESA contended that the lack of a causal link between violent media, including videogames, made the issue one of free speech. This case might represent the best-informed public debate to date on the issue of violent videogames and aggression. Amicus briefs filed on both sides of the case pulled all the relevant research known

at the time and subjected it to intense scrutiny and debate. Among the dozens of briefs filed on behalf of the ESA was an amicus brief authored by a coalition of states and territories and 82 psychologists, criminologists, medical scientists, and media researchers,<sup>5</sup> all of whom contended that the State of California had misrepresented the science on videogames and that there was no causal link in the research. Ultimately, the argument by the ESA won out, first in District Court, later on appeal in the Ninth Circuit Court of Appeals, and finally in the U.S. Supreme Court. **Each court ruled that there was insufficient evidence of a causal link between violent videogames (or any media, for that matter) and violent behavior or aggression.**

This complex case involved many different issues and arguments, but the Supreme Court's 7-2 ruling hinged in three main points: videogames, "like the protected books, plays, and movies that preceded them...communicate ideas..." which "suffices to confer First Amendment protection; that current rating systems are sufficient to prevent minors from purchasing mature games and that...filling the remaining modest gap in concerned-parents' control can hardly be a compelling state interest." Moreover, there was no "compelling" link between violent videogames and aggression or violence in children.

Many are uncomfortable with the free speech component of the decision; when it comes to our children, safety feels more important than free speech (consider our views on cyberbullying today as a case in point). The second point is perhaps a bit more palatable because it seems to strike a balance between regulation (albeit self-imposed, and with at times questionable definitions of what qualifies a game for a rating of "Teen" vs. "Mature")<sup>6</sup> and parental control. Ultimately, no law can substitute for parental involvement in what their children consume and, more importantly, what meaning they make from it. Still, wherever you come down on this issue as a parent, teacher, administrator, politician, or citizen, the third point is the most salient and should serve to remove any qualms we have over the first two issues: There is no compelling evidence linking videogames (or TV, movies, magazines, plays, or books) to violence and aggression in children.

This case illustrated the error, to which people on both sides of the debate are prone, of oversimplification. The case ultimately hinged on whether evidence exists for the "dosing" model of violence and aggression. The dosing model holds that the presence of violence (any kind) leads to violent behavior, and that the more violence one is exposed to (time, intensity), the more likely one is to become more violent. As the hundreds of sources cited in the above-referenced amicus brief illustrates, the dosing model is too simplistic to predict violence or aggression. Teen violent crime has actually decreased over the last 20 years at the same time that videogame play has increased. If one plots the number of per capita gun-related murders against per capita spending on videogames, several interesting things become apparent. First, only China spends less per capita (~\$5) on videogames than the United States (~\$42); Germany, Australia, Japan, the United Kingdom, France, and Canada spend \$45-\$65, while South Korea and the Netherlands spend more than \$100 per capita. Yet the United States has three times more gun murders than any other country, including South Korea (zero murders per 100,000) and the Netherlands (0.4 per 100,000). See table 1.

**Table 1. Rank-ordered list of top 10 countries by videogame sales and corresponding gun homicides per capita\***

| Country     | Videogame Sales Per Capita* | Gun Homicides Per Capita** |
|-------------|-----------------------------|----------------------------|
| Japan       | \$47.00                     | 0.01                       |
| South Korea | \$102.00                    | 0.03                       |
| USA         | \$42.00                     | 2.97                       |
| UK          | \$60.00                     | 0.05                       |
| France      | \$62.00                     | 0.06                       |
| Canada      | \$60.00                     | 0.51                       |
| Australia   | \$48.00                     | 0.10                       |
| Germany     | \$43.00                     | 0.19                       |
| Netherlands | \$110.00                    | 0.33                       |
| China       | \$0.00                      | 0.00                       |

\*[New Zoo Games Market Research](#)

\*\*[United National Office on Drugs and Crime: Global Study on Homicide \(2013\)](#)

## Mass Shootings and Videogames

This has not stopped us from looking to videogames in our painful search to explain tragedies like Columbine, Aurora, Virginia Tech, and Sandy Hook. The killers responsible for the murders at Columbine, Aurora, and Sandy Hook reportedly played a lot of videogames, although the shooter at Virginia Tech did not. Yet, the Sandy Hook killer mostly played nonviolent games (he spent the most time playing *Super Mario Brothers* and *Dance Dance Revolution*), and the shooter at Aurora played mostly role-playing games (fantasy-based games that feature armed combat against primarily monsters) like *World of Warcraft*, *Neverwinter Nights*, and *Diablo*, which do not feature guns. Of all the perpetrators of these horrific mass shootings, only the Columbine shooters actually played games that involve using guns to shoot people. The more common thread? All were mentally ill at the time of the shootings and all had access to guns. And, by the way, less than eight percent of violent crime committed by the mentally ill is the direct result of their mental illness, lest we commit another overgeneralization about causes of violence.<sup>7</sup>

Videogames could have been part of their illness, of course. Suffering from a serious psychosis conceivably could lead to seeking out experiences and media that reinforce that psychosis and color one's perceptions of what those experiences mean. But it is another thing entirely to reverse the order and suggest that the medium or the experiences caused the illness. Being around young children does not cause people to become pedophiles; being a pedophile makes people seek out environments with young children.

## Laboratory Studies vs. Real Life

Virtually every piece of research showing a link between media such as videogames and aggression comes from laboratory settings in which conditions are carefully controlled and in which aggression is measured by paper-and-pencil statements about aggression, *not* actual

aggression. As such, the most we can conclude from these studies is that under some conditions, we can create people who self-report as more aggressive; there is no evidence that those people then go out and behave any differently as a result. **The largest-scale meta-analysis to report a link between videogames and aggression included only a few studies with real-world incidents of aggression, and those relied on self-reported measures of aggression rather than observed acts.**<sup>8</sup> The authors concluded that "These are *not huge effects* — not on the order of joining a gang vs. not joining a gang. But it is *one risk factor* for predicting future aggression and other negative outcomes" (emphasis added).

People do not exist in laboratories; we exist in societies and cultures with complex social systems of rules, expectations, and messages that ameliorate violence-tinged media messages. The vast majority of us can navigate these waters without becoming violent, a fact made evident by the lack of increased violent crime in those who read *Grimm's Fairy Tales* (stuffing witches in ovens, chopping people up, cannibalism), watched the *Looney Tunes*, or enjoyed *The Three Stooges*. Clearly, and thankfully, the relation between violent media messages and violent behavior is more complex and less direct than we fear.

## One Small Factor

My argument is not that violent media *cannot* lead to violent behavior, only that the *ways* in which it does (and does not) are complex and nuanced. **After all, videogame researchers like me can hardly argue that videogames can promote positive behaviors if we are not willing to acknowledge the conditions under which they can lead to undesired behavior as well.** So what is the truth that lies between these two positions? We do not (yet) know enough about human beings to provide a definitive answer to this question. No one would disagree that it is possible to create a violent human being by exposing him or her to long-term, consistent messages of violence without any socialization to counteract it; we need only look to the tragic cycle of familial and domestic violence for evidence of that.

If we believe the evidence that suggests games can desensitize those with crippling phobias to the stimuli that trigger their feelings of panic, we can hardly argue that media cannot also desensitize someone to violence. By the same token, however, we must recognize that all the evidence we have shows that media *do not* desensitize most people. We should not accept that violent videogames (or any other medium) are anything but one small factor in a complex societal issue.

## The Right Question

The question we should ask is not *whether* violent videogames can make people violent — they can, under the right circumstances. That set of circumstances is poorly understood, however, and thankfully quite rare. The real question of interest lies in determining the circumstances and mechanisms by which such changes can occur. This is much more than an academic pursuit; it has the potential to change our society in ways we cannot yet imagine. By asking *how* instead of *whether* or *if* games can create such sociological and behavioral changes, we shift the focus from a dosing model (exposure = change) to a social/cultural/cognitive/emotional explanation of how and under what circumstances beliefs and actions can be changed.

In retrospect, it seems obvious that context determines how people process media messages. For example, we already recognize that violence committed in self-defense is different than unprovoked violence. We provide social venues in which violence is not just allowed, but encouraged (e.g., MMA and American football) — violence that would result in arrest if demonstrated in other social contexts. If we recognize that the context of the violence makes a difference in these examples, we must also accept that violent videogames are subject to the same contextual influences.

**Context does not just reduce the likelihood of becoming more aggressive as a result of violent media; it can actually result in positive behavioral outcomes.** Research spanning the last 25 years has found that playing a violent videogame with another player (not against them) actually *reduced* aggression and *increased* prosocial behavior,<sup>9</sup> has provided evidence of a kind of cathartic effect for violent videogames (players are *less* aggressive after taking on the role of an avenging assassin in a videogame),<sup>10</sup> and that those who played an automobile racing game were more aggressive (as measured by biometric measures of arousal rather than paper-and-pencil tests) than those who played a shooter game in which they had to kill other human beings.<sup>11</sup> The researchers in the latter study hypothesized that the racing game tapped into real experiences (e.g., road rage, near accidents), whereas players had no related cognitive–emotional experiences to tap into with the shooting game.

## Do Videogames Have Special Powers?

Many studies like those described here highlight the importance of the psychological, cognitive, and emotional characteristics of the individuals who consume the media and their social contexts. In this respect, videogames enjoy a distinct advantage over books and movies as media. In life, we are limited to our own experiences; our ability to develop empathy, tolerance, and a strong moral compass are limited to those experiences and the meaning we make within our social contexts. Books and movies, on the other hand, can provide a potentially unlimited set of experiences to make sense of and thus can build empathy through exposing us to virtual experiences of other people who think, act, and behave in ways different from us. The knowledge we gain in the process, by seeing that the ways "different" people, look, sound, and behave does not necessarily lead to "better" or "worse" people, can make us more tolerant and understanding of diversity.

Movies, as a kind of visual storytelling, seem to work in the same way as books; movies like *Sophie's Choice* (based on the book by the same name) would not work if the viewer did not identify with her in spite of the horrific act of filicide. Yet movies create a layer between the viewer and the medium by forcing a representation of place, time, and characters on the viewer, whereas books force the reader to generate these things. This cognitive act invests the reader in the narrative in some ways more deeply than film can and does so in ways that are correspondingly more connected to our own experiences (since we are most likely to generate people, places, and spaces like those we have experienced). Books also allow us to pause and reflect on decisions that characters make with which we may disagree or find unpalatable, whereas movies are time-based (remote controls notwithstanding) and proceed at their own pace, with less time to consider what *we* would do next. In both cases, however, we do not really have any control over what happens, and that means we can never really develop a full appreciation of

the consequences of one decision over another. We might be sure that we would decide differently ourselves, but without the ability to try, we cannot know how we would feel or come to believe. **Videogames do not suffer from this limitation — they allow us to experience both sides of a decision through replayability.** Because videogames are dynamic, our choices lead to different outcomes and possibilities, thus promoting a desire to replay.

## Can Violent Videogames Make Us More Moral?

In well-defined moral and ethical situations, the inability to experience both sides of an ethical or moral dilemma may have less consequence than with morally and ethically ambiguous situations. What happens, for example, when the protagonist in a book or movie commits acts considered unethical or immoral? Whether "justified" by the context (e.g., revenge, self-preservation), we wonder how we would have behaved and, more importantly, how we would have felt about making each choice. Our sense of morality is developed, in part, through exposure to dilemmas, our exploration of the possible choices, and our evaluation of the consequences of those choices, which involves our emotional responses.

By allowing us to choose what "we" do as the main character, videogames offer us the opportunity to explore all sides of such dilemmas, to experience the results of our choices through observable consequences in the game world, and to evaluate our own reaction to them.<sup>12</sup> **This sense of agency, combined with directly observable consequences and replayability, makes videogames just as effective at promoting morality and ethics as for promoting violence.** Dozens of digital game-based learning (DGBL) researchers work in this area,<sup>13</sup> but one example shared with me by my colleague, Bob DeSchutter, is illustrative.

In the game *Fallout 3*, a post-apocalyptic world destroyed by nuclear war, one of the side quests leads to a community that has evolved for many generations in an isolated environment. At the center of their culture is a tree that holds religious significance for them. This tree turns out to be a human mutant, Harold, who is trapped inside this tree, which began growing out of his head many years ago and in which he is now completely encased. When the player meets Harold, he begs to be put out of his physical and spiritual misery. The community, however, believes such requests are spiritual tests, which they have ignored for years. The community wants Harold's bounty and wisdom (he has given birth to a rich ecosystem) to be spread across the world. The player can choose to commit murder in order to end Harold's suffering, knowing that doing so will also remove the spiritual center of a culture and guarantee the rest of the world remains barren. Or, the player can choose the good of the community, thus ensuring that Harold's torture will never end. There is no right or wrong answer to such moral dilemmas, and forcing the player not just to contemplate the decision but to actually make it and see (and feel) the results is a powerful experience not possible in other media. Because players can replay the scenario and choose differently, they can also explore both sides of the issue; what the game designers then program in as the consequences can play a significant role in helping to make meaning of the experience from a societal perspective.

## What (Else) Can We "Learn" from Videogames?



The potential for videogames to promote positive behavioral outcomes is not limited to morality or ethics. Researchers like Ian Bogost, with his work on persuasive games, have shown how games can help us understand complex social problems from a personal perspective and make us more empathetic. For example, his game *Fat World* places the same geographic and economic constraints on the player as experienced by those who live in poor urban areas. Without access to reliable transportation, players are limited to food in their immediate surroundings, which comprise neighborhood shops with fewer healthy options and a significantly higher-per-capita presence of fast-food restaurants. With price disparities between healthy and unhealthy food and a limited food stamp budget, players must choose whether to buy high quantities of inexpensive, unhealthy food to last their family for a week or more expensive healthy food that may last only a few days. Thus, the game play shows how obesity and diabetes do not necessarily result from conscious choices or lack of willpower, but from complex socio-demographic factors beyond the control of individuals.

In a similar vein, researchers like Pam Kato have shown how games can make us healthier and live longer. Her game, *Re-Mission*, helped children with cancer understand the effects of their chemotherapy on their cancer (by letting them travel throughout their bodies and "kill" cancer cells using guns that deliver chemotherapy agents) and resulted in significantly higher adherence to their chemotherapy programs. This and hundreds of other studies and researchers have given rise to a field of study called games for health, with its own conferences, journals, and organizations.

Researchers like Jane McGonigal have shown how alternate reality games (ARGs), games that mix the real world with virtual components, can solve social problems. Her games *Evolve* (identifying and solving local social problems) and *World Without Oil* (finding solutions to the world's future energy needs) and those of hundreds of other researchers have resulted in millions of people voluntarily working to find solutions to a wide range of social problems.

Researchers like Bob DeSchutter, founder of the Gerontoludic Society, are building games for the elderly, not for cognitive training purposes (which have received dubious empirical support) but for ethical, quality-of-life, and aesthetic reasons. His games and projects have promoted intergenerational familial connections by supporting shared storytelling and shared game play and broadened the already significant games-for-aging arena. And virtual worlds like *Snow World* (a game for burn victims that has been clinically shown to improve pain management) and an NIH-funded clinical trial of another game shown to reduce PTSD symptoms<sup>14</sup> have extended the power of game technology to the counseling and therapy domains.

## Concluding Thoughts

Once again, my argument is not that violent videogames *cannot* promote aggressive behavior, nor that their ability to promote positive outcomes outweighs that risk. The mere presence of violence in a videogame, however, is insufficient to make any judgment about its potential for good or harm. **If we accept that videogames can promote negative outcomes, we must also accept that the opposite is also true.** Just as our technologies and definitions of learning have evolved, so must our research questions and practices continue to change. If we are honest with ourselves, we have known for some time that the answer to whether violence in any medium is

"good" or "bad" is "it depends." It depends on a variety of social, developmental, emotional, and contextual factors. It depends on the set of circumstances that each person, as an active participant in the meaning-making process, brings to the table. It depends on things we have not yet discovered. In defining these conditions and factors, we will have to leave our preconceived notions and prejudices behind and accept that positive and negative effects may result from "good" or "bad" media. If we fail to remain open to all such possibilities, even those that go against our personal beliefs, we put at risk the very outcome we are trying to achieve — a more just, fair, and moral world for future generations. If we succeed, videogames (even, or perhaps especially, violent ones) may help point the way to a better world.

## Notes

1. Ellen Wartella and Byron Reeves, "Historical trends in research on children and the media: 1900–1960," *Journal of Communication*, Vol. 35 (Spring 1985): 118–33.
2. Craig A. Anderson, Akiko Shibuya, Nobuko Ihori, 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*, Vol. 136, No. 2 (March 2010): 151–173; Christopher J. Ferguson, *Violent Crime: Clinical and Social Implications* (Thousand Oaks, CA: Sage, 2010); and Christopher John Ferguson, "The Good, the Bad and the Ugly: A Meta-analytic Review of Positive and Negative Effects of Violent Video Games," *Psychiatric Quarterly*, Vol. 78, No. 4 (December 2007): 309–316.
3. Because of mental or developmental disability or mental illness, for example. See Richard J. Davidson, Katherine M. Putnam, and Christine L. Larson (2000). "[Dysfunction in the neural circuitry of emotion regulation—A possible prelude to violence](#)," *Science*, Volume 289, No. 5479: 591–594.
4. E.g., Christopher J. Ferguson, John Colwell, Boris Mlačić, Goran Milas, and Igor Mikloušić, "Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians," *Journal of Computers in Human Behavior*, Vol. 27, No. 3 (May 2011): 1195–1200.
5. [Court brief](#) of social scientists, medical scientists, and media effects scholars as amici curiae in support of respondents.
6. I've seen one case where a game earned a rating of Teen for "comic mischief" involving throwing ice cream at your friends, while a recent Batman title earned the same rating despite portraying frequent, personal beatings (including personal strangulation and head stomps) of bad guys and a dirty-talking Catwoman with her suit unzipped to show significant cleavage.
7. Jillian K. Peterson, Jennifer Skeem, Patrick Kennealy, Beth Bray, and Andrea Zvonkovic, "[How often and how consistently do symptoms directly precede criminal behavior among offenders with mental illness?](#)" *Law and Human Behavior*, Vol. 38, No. 5 (October 2014): 439–449.
8. See note 2.
9. S. B. Silvern, P. A. Williamson, and T. A. Counterline, "Video game play and social behavior: Preliminary findings," paper presented at the International Conference on Play and Play Environments (1983b).

10. Christopher J. Ferguson and Stephanie M. Rueda, "[The Hitman study: Violent Video Game Exposure Effects on Aggressive Behavior, Hostile Feelings, and Depression](#)," *European Psychologist*, Vol. 15 No. 2 (2010): 99–108.
  11. Sarah L. Pearson and Simon Goodson, "Video games and aggression: Using immersive technology to explore the effects of violent content," *Proceedings of the North East of England Branch of the BPS Annual Conference*, June 26–27, 2009, Sheffield, UK.
  12. This might be more accurately characterized as co-authoring, since the design decisions made by the game designers also control and constrain the narrative.
  13. Karolien Poels and Steven Malliet, eds. *Vice city virtue: Moral issues in digital game play* (Leuven, Belgium: Acco, 2011); and Jose P. Zagal, "Ethically Notable Videogames: Moral Dilemmas and Game Play," *Breaking new ground: Innovation in games, play, practice and theory, Proceedings of the 2009 DiGRA conference* (2009).
  14. Daniel Pine, MD, of the NIMH Emotion and Development Branch, Yair Bar-Haim, PhD, School of Psychological Sciences, Tel Aviv University, and colleagues, report on their findings July 24, 2015, [National Institute of Mental Health](#).
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