Do video games produce aggressive behavior in teens, and do the positive effects of video games outweigh the negative effects?

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Part 1: Introduction

Have you ever played a video game that gave the opportunity to digitally hurt someone or something? Aggressive video games are an apparent part of our world today and they are not going anywhere, even though there is significant controversy over these games.. The important questions is, do video games produce aggressive behavior in teens and do the positive effects of video games outweigh the negative effects? It is important to research this topic because the long debate over violent video games needs to come to an end. Since the dawn of video games there has always been arguments over games because they features offensive or violent content. The goal of my research is to settle that debate. Although there is a connection between videogames and aggression, however it is not the connection everyone thinks it to be, but the likelihood of an individual stimulating aggression is very low. This is especially true when children, teens, and adults play games rated for their age and level of maturity. When they are played appropriately there can be benefits to individuals and I believe this can outweigh the negative effects often portrayed in the media.

Part 2: Historical Content

In 1976, an arcade video game was released called *Death Race*. In the game, you drive a car and run over gremlins. When hit, a gravestone pops up and the sound of someone groaning in pain emits from the game, which was by far the most violent media distributed to date. This game quickly caught the attention of newspapers and reporters alike. It was pulled off of shelves because at that point in time video games were mainly intended for children. Video games did not start becoming popular for older ages until a few years later and were not even rated until the mid-90's. This game, and another game that came out a few years later led to the formation of the first rating system, which was the Interactive Digital Software Association

(IDSA). This group was a collaboration of EA, Nintendo, Sega and Acclimation Entertainment, but Nintendo didn't want to be seen working with their main competitor. So the ESRB was created as a vendor neutral company to rate video games. Even though this rating system exists, most parents still have issues with aggressive video games because they are afraid for the emotional/social well being of their children. The media also continues to promote these assumptions, and an example of this is how aggressive video games are one of the first topics brought up after a school shooting. It is irrational to assume that their is without a doubt a correlation between aggressive video and school shootings. In fact, there is significant evidence coming out about the benefits and positive effects that video games, although they may be aggressive, have on many players.

Part 3: Research and Analysis

Behavior involving physical force intended to hurt, damage, or kill someone or something. That's the definition of violence. Violence and action are the center of many video games today and most of the mainstream titles have a very high element of aggressive behavior that can be considered violent. In the article, Humans Crave Violence Just Like Sex, the author adds, "Aggression occurs among virtually all vertebrates and is necessary to get and keep important resources such as mates, territory and food" (Kennedy). Aggression is part of what makes us human. We as a species are not only inherently drawn to violence, but we need it to survive and this is a concept that when deeply thought about, most people are disgusted by. Deep down though everyone has those primal instincts, and there is concern about how viewing violent material will bring out those instinctive responses. However, natural aggressive instincts don't necessarily equate to committing violent acts.

In another article, Shooting in the Dark, written by Benedict Carey of the New York Times, it is stated that, “A dose of violent gaming makes people act a little more rudely than they would otherwise, at least for a few minutes after playing.” To be more clear an individual will most likely be more aggressive after playing a violent video game. This is a result of mirror neurons firing in the human brain and also shows the recency effect. Shortly after performing an activity, such as violent gaming, our brains are predisposed to remember the most recent events of the experience. This is also shown when someone is asked to recall words on a list, they are more likely to remember the last few words than those in the middle.

Mirror neurons are cells in the premotor cortex and inferior parietal cortex. “What makes these cells so interesting is that they are activated both when we perform a certain action—such as smiling or reaching for a cup—and when we observe someone else performing that same action” (Iacobani) In the article Cells That Read Minds, the author states, “Mirror neurons work best in real life, when people are face to face. Virtual reality and videos are shadowy substitutes” (Blakeslee) when speaking of the effects of mirror neurons in the brain. However shortly after the author references a study in the January 2006 issue of Media Psychology finding that, “when children watched violent television programs, mirror neurons, as well as several brain regions involved in aggression were activated, increasing the probability that the children would behave violently” (Blakeslee). This shows that while the likelihood of a child exhibiting violent behavior increases, this increase is much smaller than if the child witnessed violence in real life. In another article, Does Exposure to Violent Movies or Violent Video Games Make Kids More Aggressive?, the author claims “Children who are exposed to multiple risk factors -- including substance abuse, aggression, and conflict at home -- and also consume violent media are more likely to behave aggressively.”. While this may seem obvious, it is important to consider. Often times video games are pinpointed for increasing aggressive

behavior, however there can be many factors in a child's life that influences their actions. As Blakeslee said, the effect of mirror neurons is much stronger when face to face with the behavior in question. When both violent media and other acts of violence a child is exposed to are combined, a toxic cocktail is created in which video games may not be the most important ingredient. In an effort to ensure this, rating systems are designed to match the content of games to the appropriate age of children, teens, and adults.

The ESRB is a rating system for video games that are released in the USA since 1994. "...the ESRB system is widely known and considered useful by adults—who use the ratings in combination with parental controls for game consoles and computers—and responsive to public concerns, continually improving its methods." as said in the article: The ESRB Rating System is Effective. This rating system is widely used on most mainstream video games and nobody questions it. One might ask why no one questions it and it is because it works, it's development took mass amounts of planning, thought and hard work. The rating system they employed was broken into 5 categories. Each category was determined based on age and maturity level, below they are listed from youngest to oldest:

1. **Early Childhood:** Content is intended for young children.
2. **Everyone:** Content is generally suitable for all ages. May contain minimal cartoon, fantasy, and/or infrequent use of mild language.
3. **Everyone +10:** Content is generally suitable for all ages 10 and up. May contain cartoon, fantasy or mild violence, mild language and/or minimal suggestive themes.
4. **Teen:** Content is generally suitable for ages 13 and up. May contain violence, suggestive themes, crude humor, minimal blood, simulated gambling and/or infrequent use of strong language.

5. **Mature:** Content is generally suitable for ages 17 and up. May contain intense violence, blood and gore, sexual content and/or strong language.
6. **Adults Only:** Content suitable only for adults ages 18 and up. May include prolonged scenes of intense violence, graphic sexual content and/or gambling with real currency.
7. **Rating Pending:** Not yet assigned a final ESRB rating. Appears only in advertising, marketing and promotional materials related to a "boxed" video game that is expected to carry an ESRB rating, and should be replaced by a game's rating once it has been assigned.

This rating system is the most trusted rating format for video games today, the brilliant minds behind this system have put their hard work and time on this system.

Trait anger is a personality characteristic that makes a person more susceptible to becoming angry at the slightest provocation. In the scientific journal Priming Effect of Computer Game Violence On Children's Aggression Levels, it is mentioned, "...repeat exposure to violent games increases aggressive attitude, aggressive thoughts, hostile feelings, and desensitization"(Zheng and Zhang 1748). Desensitization is when a person's level of empathy and realization of consequences in real life decrease. Adolescents high in trait anger are more likely to respond in a violent manner to violent media, but those with low trait anger have a very low chance.

There is also a group of individuals that do not believe violent video games create aggression through violent materials, co-author Dr Andrew Przybylski from the Oxford Internet Institute says,"If players feel thwarted by the controls or the design of the game, they can wind up feeling aggressive" (qtd. In Vince). He goes on to mention that the need to master the game was far more significant than whether the game contained violent material. In simpler words,

aggression stimulated from video games came from the level of difficulty, not elevated stages of violence.

Video games motivate us because when we play video games it lets us access one or more of psychological states, these states are:

1. **Competition:** the experience of defeating others
2. **Challenge:** the experience of success following effort
3. **Diversion:** to escape an experience of stress
4. **Fantasy:** to experience novel or unrealistic stimuli
5. **Social interaction:** to have a social experience
6. **Arousal:** to experience activated positive emotions

These states represent different reasons an individual would use video games to reach a different psychological state that one couldn't normal obtain without the use of video games(Video Games and Motivation).

It is been found that there are positive impacts of playing videos games, even games that are seen as aggressive. For instance, playing games can motivate us and that's very important when we're depressed. "Gaming is the neurological opposite of depression," says author and well-known gamer Jane McGonigal in an interview with The Long and Short. Gaming is like a happy pill with less swallowing, that's why developers have already begun designing games to treat patients with depression and other mental health problems like Autism or Bipolar Disorder. For example, Sparx is a role-playing game that helps promote positive affirmations through the interactions players have within the game. In a small study, all participants saw a drop in negative thoughts after playing this video game. Games don't have to be complex to help an individual with mental health issues. You don't need to be immersed into a role-playing game to escape, zone out, and/or feel less anxious. Video games can be used to help people

that suffer from autism or an anxiety disorder. At the Center for BrainHealth at The University of Texas in Dallas, there is a research team made up of cognitive neuroscientists and game technology experts. Their goal is to develop games to help those people with autism and anxiety disorders to overcome those obstacles. The center's founder and chief director Dr. Sandra Bond Chapman says, "Practicing social interaction in a safe, non-threatening, gaming environment helps people reduce anxiety and gain the confidence and skills they need to attempt more social interactions in their daily lives,"(Why these Neuroscientists Are Prescribing Video Games). These games could possibly open a door to an entirely new era in medicine, technology, and education. There is also room for games to be therapeutic, I have already touched on how they can help patients with mental health issues, but is there a possibility to help soldiers with PTSD or to help people to deal with their everyday stress?

At the East Carolina University Center for Applied Psychophysiology, a study was conducted searching for a link between stress relief and video games. In their study they report, "...support the use of prescribed casual video games for treating depression and anxiety" (Carmen V. Russoniello, Matthew Fish, Kevin O'Brien, Vadim Pougatchev, Eugene Zirnov). By studying test subject's stress and depression levels, this research group has proven that the use of causal action games can help diminish and/or lower the effects of depression and stress.

Another way video games can be used for medical practices is by helping individuals suffering from PTSD(Post Traumatic Stress Disorder). A psychologist, Skip Rizzo, at University of Southern California's Institute for Creative Technologies in Los Angeles says that a virtual reality game could be helpful for veterans suffering from PTSD, "Roughly 28% of the soldiers that returned from Iraq are diagnosed with a critical illness, 17% of those soldiers are most likely to suffer from PTSD." Rizzo says, he goes on to say, "The [virtual reality] format may appeal to a generation of service members who have grown up with the digital world, and feel comfortable

with it”(Virtual-Reality Tech Helps Treat PTSD in Soldiers). The treatment involves the use of a lightweight mobile VR Headset. There have been two installments on the treatment program: *Virtual Iraq* and *Virtual Afghanistan*, these games are an adaptation of an older game released in 2004 designed to help veterans returning from war suffering from PTSD. These adaptations are based off the game *Full Spectrum Warrior*, this game is a squad-based game in which the player issues commands to two fireteams. The player uses these squads to reach objectives and complete mission in a made up country.

Part 4: Conclusion

The violence of a videogame has been found to cause short term aggression in an individual through the use of Mirror neurons, but the long term effects are still waiting to be discovered. However the violence in a video game has been found to stimulate aggression in some adolescent but it is most likely that children with a history of violence or health issues are going to act out in aggression and/or violence. Other children are more likely to have stimulated aggression from video games depending on how the rest of their day went before playing the game. The virtual reality program for veterans suffering from PTSD could be the next breakthrough in psychological practices, imagine the countless victims to sexual assault that struggle with the fear everyday. Then think how many victims could potentially benefit from a therapeutic virtual reality program. I can say with confidence that there is a link between aggression and video games, however it is not the connection everyone thinks it to be. When most people think of a violent video game they image fighting, gore, even death, but the likelihood of an individual stimulating aggression is very low. That is not even talking about how much aggression a person really needs to simulate to rage out.

For concerned parents of children who play video games and/or with to play video games here is my recommendation on whether or not you should allow your child to play a action game. For parents of children with a history of violence or mental health issues, I would recommend that those children be evaluated before playing a action style video game, but for teens without a violent history are have a very little chance of being violent. Furthermore, research need to be invested into the effects of a game's difficulty rather than the level of violence and aggression it features. Though, virtual reality could be the door to revolutionary discovery on the human brain and uses of VR for psychological studies and practices.

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