

*DOES PLAYING VIOLENT VIDEO GAMES CAUSE
AGGRESSIVE BEHAVIOR?*

Playing by the Rules

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Some social psychologists argue that playing violent video games causes aggressive behavior, among other things (desensitization to violence, disinhibition of violence, belief in a 'scary world,' acquisition of cognitive schemas supportive of aggression). Three types of evidence are said to converge in support of this conclusion: correlational studies, field studies (which are typically correlational in nature), and laboratory experiments.

Correlational studies can tell us nothing about whether violent video games cause aggression. Even if we accept that there is a correlation between amount of time spent playing (violent) video games and aggressive behavior, there is no reason to think that games are the cause of aggression (Anderson & Dill, 2000; Colwell & Payne, 2000; Roe & Muijs, 1998). Furthermore, some correlational studies find no significant relationship with aggression (e.g., Sacher, 1993; van Schie & Wiegman, 1997).

One purpose of laboratory experiments is to study immediate effects of prior 'causes.' **The focus of this paper is on the quality of experimental evidence used to support the argument that**

1. PLAYING (2) VIOLENT VIDEO GAMES CAUSES

(3) AGGRESSIVE BEHAVIOR

In the typical laboratory experiment, university students are randomly assigned to play a violent video game or a nonviolent video game. The length of play varies from 4 minutes to 75 minutes. Following play, some measure of aggression is administered. We will examine each component of this situation, asking whether subjects have PLAYED a video game, whether the video game can be regarded as VIOLENT, and whether AGGRESSIVE BEHAVIOR has been measured..

1. PLAYING violent video games?

Play is a voluntary, self-directed activity (Garvey, 1991), an experience that probably cannot be captured in a laboratory experiment. Jib Fowles (1999), discussing television violence, contrasts the experience of the experimental laboratory versus watching television at home.

"At home, everything is known; here, everything is unknown, demanding attentiveness. At home, the lights are low, the child may be prone and comfortable, and viewing is nonchalant; here, the

room is overlighted, the child is seated upright, and the viewing is concentrated. Most signally, at home television viewing is an entirely voluntary activity: The child is in front of the set because the child has elected to do so and in most instances has elected the content... In the behavioral laboratory, the child is compelled to watch and, worse, compelled to watch material not of the child's choosing and probably not of the child's liking... Furthermore, what the child views in a typical laboratory experiment will bear little resemblance to what the child views at home. The footage will comprise only a segment of a program and will feature only aggressive actions" (Fowles, 1999, p. 26).

Regarding video games, the duration of play is too short, typically 5-15 mins., for anything like the play experience to be duplicated (Calvert & Tan, 1994; Silvern, Lang & Williamson, 1987). The pleasant 'flow' state described by Csikszentmihalyi (1990) becomes unattainable.

In laboratory experiments, no one plays. Being required to play a violent video game on demand is no one's idea of an entertainment experience. It is like being forced to listen to someone else's favorite music; it sounds like noise.

Almost no studies of violent video games have considered how and why people play them, or why people play at all. Experimental research does not recognize the fact that video game players freely engage in play, and are always free to stop. They enter an imaginary world with a playful frame of mind, something entirely missing from laboratory studies of violent video games. One of the pleasures of play is this very suspension of reality. Laboratory experiments cannot tell us what the effects of playing video games are, because there is no sense in which participants in these studies "play."

2. Playing *VIOLENT* video games?

There is much confusion about the definition of "violence" and terms like "media violence" and "violent video games." Psychologists define violence and

aggression as "the intentional injury of another person." However, there is neither intent to injure nor a living victim in a video game.

An article by Dill and Dill (1998) serves to illustrate these semantic problems. They argue that players must "act aggressively" and are then reinforced for this "aggression."

"In violent video games, aggression is often the main goal, and killing adversaries means winning the game and reaping the benefits. While in real life, murder is a crime, in a violent video game, murder is the most reinforced behavior.... The violent video game player is an active aggressor and the players' behavioral repertoire is expanded to include new and varied aggressive alternatives."

"...If violent videogame play indeed depicts victims as deserving attacks, and if these video games tend to portray other humans as 'targets,' then reduced empathy is likely to be a consequence of violent videogame play, thus putting the player at risk for becoming a more violent individual."

What is called "video game violence" is simulated aggression, different from the real thing in countless ways (Goldstein, 1999). Video games cannot "reinforce" aggressive behavior since players do not engage in any aggressive behavior in the first place. Besides, what is it that is "positively reinforced" in video games, which inevitably result in the defeat of the player's character?

The same features that inhibit an opera audience from rushing the stage to prevent murder are present in video games. There are physical cues to the unreality of a game's "violence," including the willing suspension of disbelief, the knowledge that you have control over events, and can pause at will or stop playing altogether. In video games, there are sound effects, scorekeeping, a joystick or keypad in your hand, and often playmates commenting on your performance, which simply involves streaming pixels at imaginary creatures on a two-dimensional screen.

When there are few cues to their unreality, bloody images lose their appeal (McCauley 1998). In one study, boys who played video games with violent themes showed the same positive facial expressions, quality of peer interaction, and enjoyment as those who played "neutral" games (Holmes & Pellegrini, 1999). Similarly, violence, if it is to be entertaining, must fulfill certain requirements: it must have a moral story, in which good triumphs over evil, and it must carry cues to its unreality -- music, sound effects, a fantasy story-line, cartoon-like characters. People are highly selective in the violence they seek or tolerate (McCauley, 1998; Zillmann, 1998).

Writing about Saturday morning television cartoons, Burke and Burke (1999) say,

"For us, there has been no greater irritant while researching this book than our repeated encounters with the views of experts..., who argue with great confidence that young children simply cannot understand the fictional rules of conflict in cartoons. Our contemporaries have insisted repeatedly that as children, they clearly understood that the 'violence' involved when Bugs blows up Yosemite Sam or Wile E. Coyote's latest Acme device launches him off a cliff takes place within a fictional universe with its own very particular rules. Such violence had little or no relationship with what we understood as violence in our own lives" (pp. 206- 207).

3. ... causes AGGRESSIVE BEHAVIOR

Reviews of video game research are as variable in their conclusions as the individual studies that comprise them. The same research is said to support different conclusions. For instance, Ask (1999), Funk (1993, 1995), Provenzo (1991), and Anderson & Bushman (2001) conclude that there is a causal connection between violent video games and aggressive behavior. Others think the data insufficient to support this connection (Cumberbatch, Maguire & Woods, 1993; Durkin, 1995; Griffiths, 1999; Wiegman, van Schie & Modde, 1997).

Sacher (1993), reviewing mostly German research, found 5 experiments and 2

correlational studies linking violent video games to aggressive behavior, and 12 experiments and 7 correlational studies finding no such linkage.

In his overview of video game research, Barrie Gunter (1998, p. 109) concludes, *"Even with experimental studies, there are problems of validity that derive from the fact that they do not measure 'real aggression' but rather simulated or pretend aggression."*

According to British psychologist Mark Griffiths (1999) *"the majority of studies on very young children tend to show that children become more aggressive after playing or watching a violent video game, but these were all based on the observation of free play."*

Two recent meta-analyses (Anderson & Bushman, 2001; Sherry, 2001) report small effect sizes ($r = .19$ and $.15$, respectively). In the Sherry meta-analysis, playing time emerged as a negative predictor of effect size. That is, the more one played video games, the weaker the relation to aggressive behavior!

Meta-analysis is about the quantity, not the quality, of data. The conclusions of meta-analyses cannot be more valid than the studies that comprise them. Here are some of the studies in these samples.

A. Inconsistent results

It is difficult to know what to make of complex and inconsistent results both between and within video game studies. For example, Kirsh (1998) had boys and girls aged 8.5 to 11 years old play either a "very violent" video game (Mortal Kombat II) or an "action-oriented, non-violent video game" (NBA Jam).

Immediately following video game play, children interpreted a series of ambiguous stories in which a same-sex peer caused a negative event to happen, but where the intent of the peer was unclear, for example, a child is hit in the back with a ball. After each story, children were asked six questions about the harmdoer's intent and emotional state, and potential retaliation and punishment. Responses were coded in terms of amount of "negative and violent content."

According to Kirsh, children exposed to the violent video game "responded more negatively" to the ambiguous provocation stories than children exposed to the relatively non-violent NBA Jam on three of the six questions. But there was no significant difference between those who played Mortal Kombat or NBA Jam in whether they regarded the other's behavior as intentional or accidental.

Kirsh expected that children playing the violent video game would retaliate more and expect more punishment than children playing the non-violent video game.

This hypothesis was partially supported. When asked, "What would you do next?" children playing the violent video game responded "significantly more negatively" than children playing the non-violent video game. However, the question about prospective punishment for the harmdoer, "Do you think the kid should be punished a lot, a little, or not at all?" was not significant. There was no difference between those who played Mortal Kombat II and those who played NBA Jam in whether they viewed the other's behavior as accidental or intentional. What is one to make of these results? Do they justify confidence in any conclusion whatsoever about the effects of video games?

In a study by Anderson and Ford (1986), university students who played a "highly aggressive" video game (Zaxxon) were not more hostile than a group that played a less aggressive game (Centipede) for 20 minutes. In studies by Ballard & Lineberger (1999), Scott (1995), and Winkel et al. (1987), the level of aggressive content in video games had no effect on subjects' aggressive behavior.

Scott (1995) measured the aggressiveness of university students with the Buss-Durkee Hostility Inventory and the Eysenck Personality Questionnaire. No significant differences in aggressiveness were found between students after playing a nonaggressive, a moderately or a highly aggressive video game. Scott concludes that there is a *"general lack of support for the commonly held view that playing aggressive computer games causes an individual to feel more aggressive."*

In a study of elementary school children, Graybill, Strawniak, Hunter and O'Leary (1987) found no effects of video games on aggressive behavior, which was measured by pushing buttons that could reward or punish another child.

Cooper and Mackie (1986) randomly assigned 84 boys and girls, 10-11 yrs old, to play or to observe a violent video game (Missile Command), a non-violent video game (Pac Man), or a pen-and-paper game for 8 mins. They were then observed during a free play period, where they could choose from a variety of toys, including an aggressive toy (a spring-release fist that fires darts), an active toy (basketball), a skill game (pinball), and a quiet toy (building logs). Children were then given an opportunity to punish or reward another child by suggesting how much punishment or reward the child should receive for various actions. Children who played or observed the aggressive video game spent more time playing with the aggressive toy than did other children. This was particularly so for girls. Boys' play with the aggressive toy was not affected by the video game played. Cooper and Mackie also found that children who played the violent video game were more active afterwards, changing often from one activity to another. Although video games clearly influenced the children's post-game play, the video games had no effect on interpersonal aggression. Children who played Missile Command did not differ from those who played Pac Man in how much punishment or reward they administered.

Mark Griffiths (1997) reviewed the extant literature on video games and aggression. Here is a summary table of studies from his paper (see Table 1).

B. Aggressive play and aggressive behavior

Studies of violent video games do not always distinguish aggressive play from aggressive behavior (for example, Schutte et al., 1988; Silvern & Williamson, 1987). Observations of children on the playground may confuse mock aggression (pretending to engage in martial arts) with real aggression (attempting to hurt someone). Confusing aggressive play with aggressive behavior can lead to faulty conclusions. What appears to an observer to be aggressive behavior may

instead be aggressive play, where there is no intent to injure anyone. In the rare study that measures both aggressive play and aggressive behavior (e.g., Cooper & Mackie, 1986), violent video games affect the former and not the latter.

C. Measures of aggression?

It is not possible to observe real aggression in the laboratory, so researchers must improvise indirect measures and indicators of potential aggression. Here are some of the dependent variables used in video game research:

- Hitting a bobo doll (Schutte, Malouff, Post-Gordon & Rodasta, 1988)
- Coding children's interpretations of ambiguous stories (for example, a child is hit in the back with a ball). Responses were coded for the amount of "negative and violent content" (Kirsh, 1998)
- Listing aggressive thoughts and feelings (Calvert & Tan, 1994)
- Administering blasts of white noise to an unseen person, in the 'teacher-learner' paradigm, in which errors on a 'learning task' are 'punished.' (Anderson & Dill, 2000; Wiegman, van Schie & Modde, 1997).
- Withholding money from another. Winkel, Novak & Hopson (1987) tested 8th grade students in a situation in which they played teacher and were to deduct money for errors made by another student. This served as a measure of aggression.
- 'Killing' characters in a video game (Anderson & Morrow, 1995; Ask, 1999; Ask, Autoustinos, & Winefield, 2000).
- Time elapsed to recognize aggressive words. In their experiment, Anderson and Dill (2000) required university students to play a violent video game for 15 minutes on 3 separate occasions, preceded and followed by cognitive (word recognition test), affective, or behavioral (white noise) measures of aggression. The only significant findings among these many dependent measures were with the word recognition test, which they take to represent "aggressive thinking." The speed with which aggression-related words are identified is said to reflect this. The validity of this measure of cognitive schemas is dubious. Word recognition is typically used to reflect perceptual or semantic salience (Grainger & Dijkstra, 1996), a phenomena that has no necessary connection to aggressive behavior.

Can anyone reasonably draw a conclusion about the effects of violent video games from studies with such variable, inconsistent, ambiguous results? I can't. In a description of its funding priorities regarding the media, The Harry Frank Guggenheim Foundation notes,

"...Research which exposes children to short clips of violence and observes their behavior immediately afterwards does not have the potential fully to contribute to our understanding of such a complex cultural product...." (www.hfg.org)

4. What's missing from video game research?

A. Players in control

The role of volition or choice is absent from discussions of entertainment media. What is the effect of voluntary (as opposed to enforced) exposure? Also missing from research is any acknowledgment that videogame players freely enter into play, and are always free to leave. Except in laboratory experiments, video games are undertaken in a playful frame of mind.

B. Video games are social

It is surprising that social psychological research on video games so rarely considers the social life of gamers. A Danish study of 5- to 17-year olds (Sorensen & Jessen, 2000) concluded that *"Children's fascination with violent computer games cannot be understood without considering these [social] aspects. The violent elements fascinate some children, but this fascination should not be mistaken for a fascination with violence in the real world. On the contrary, all children in the investigation repudiated real-life violence. The violent elements in computer games are attractive as spectacular effects, but also because they prompt excitement and thrill. Computer games are, thus, in line with genres known from the film industry: action movies, animation, thrillers and horror movies. Computer games have inherited the content of violence from a cultural tradition within fiction...Generally, these effects contain an element of*

exaggeration, which is fully recognized by children. In relation to this, the act of playing violent computer games can be seen as a parallel to the violent and 'rough' play traditionally found among boys" (p. 120).

Sorensen and Jessen note that the interactive nature of computer games "is usually described as a problem in relation to violent computer games – the fact that the player himself must conduct violent deeds – actually makes children aware that their actions take place in a fictitious universe. For children, computer games are in fact 'games' with their own rules. From an early age, they are aware that these rules do not apply outside the realm of the game, with the exception that children can include elements and rules from the games in their play" (p. 121).

Young people bring their entertainment choices and experiences to bear on their intense concerns with questions of identity, belonging and independence. Nearly all their public behavior – the clothes they wear, the music they listen to, the rings in their noses, and the games they play – has a social purpose. Until researchers look, not at isolated individuals forced to play a video game for a few minutes as part of an experiment, but at game players as members of social groups, we are unlikely to come to terms with violent, or any other, entertainment.

Much criticism of youth culture reflects the belief that there are vulnerable groups who will be affected by the media in ways that go against their grain, a "magic bullet" that will turn good kids bad. I take the position that people are extremely selective in what media they use and attend to, and that the effects the media have on them are pretty much the effects that the user is seeking.

In the aftermath of the terrorist attacks on New York and Washington, D.C., a number of video game publishers and entertainment producers have scaled back or modified violent products. One way to greatly reduce violence in entertainment media is for consumers to reject it. The growing distaste for real violence may turn millions away from mock violence as a form of entertainment.

C. Video games as entertainment

Of course video games affect people. That's why people play them. Imagine selecting a piece of music to listen to. How do you make your selection? You will choose soothing music if you want to be soothed, and upbeat music if you want to be stimulated. You might listen to a new group or CD because your friends are talking about it.

Youngsters are willing to expose themselves to unpleasant media images because the benefits of doing so outweigh the costs. Players, like researchers, have overriding reasons for engaging with violent themes.

Recent research has begun to consider how and why people play (violent) video games (Goldstein, 1995; 1998; Grodal, 2000; Sherry, et al., 2001; Sorensen & Jessen, 2000). Although these approaches may offer new insights into video games, they are still not likely to tell us whether violent video games cause real-life aggression.

Not all questions can be answered using social psychological methods. To quote John Dewey (of this august institution), *"An idea has no greater metaphysical stature than, say, a fork. When your fork proves inadequate to the task of eating soup, it makes little sense to argue about whether there is something inherent in the nature of forks or something inherent in the nature of soup that accounts for the failure. You just reach for a spoon."*

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