

Finding the Middle Ground in Violent Video Game Research: Lessons From Ferguson (2015)

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Abstract

Ferguson's comprehensive meta-analysis provides convincing data that violent video games have almost no effect on children's aggression. Although this finding is unlikely to bring unity to a divided field, Ferguson's article (2015, this issue) provides important rules that should aid all researchers. First, we need to be more accepting of results that are inconsistent with our own theories. Second, extraneous variables are often responsible for the relations previous studies have found between violent media and aggression. Third, we should avoid using unstandardized assessments of important variables whenever possible. Finally, caution is warranted when generalizing laboratory research findings to severe acts of violence in the "real world." It is hoped that, by accepting these basic rules, researchers and others will adopt less extreme positions concerning the effects of violent video games.

Keywords

video game, violence, meta-analysis, aggression

"... an estimated 10% to 30% of violence in society can be attributed to the impact of media violence."

—Strasburger (2007), commentary in *Pediatrics*.

"Video games don't make kids violent."

—Chris Ferguson (2011), Op-ed in *Time Magazine*.

The article by Ferguson (2015, this issue) represents the first meta-analysis to examine the effects of violent video games (VVGs) on youths under the age of 18 years. It is difficult to find fault with the data (peer reviewed research), the analyses (standard meta-analytic techniques), or the general conclusion that the link between VVGs and aggression is almost nonexistent.

The findings of this article will certainly come as a surprise to the polarized field of VVG researchers (as reflected in the quotes above). What is most interesting about the division in this field is that researchers on both "sides" often interpret the same research findings very differently. For example, previous meta-analyses examining the bivariate relation between aggression and VVGs among adults have found effects ranging from .15 to .20 (similar to the bivariate effect found in Ferguson's new study, $r = .17$; Anderson et al., 2010; Ferguson, 2007; Sherry, 2001). Ferguson (2007) argued that these effects

were so small they may have occurred due to publication bias, whereas others have contended that these effect sizes indicate that the health risks posed by VVGs are on par with the risks posed by smoking cigarettes, calcium deficiency, asbestos inhalation, not using condoms, and lead exposure (Huesmann & Taylor, 2006). Although Ferguson's article is unlikely to bring unity to a divided field, it does provide some basic rules that are important for all researchers to follow, regardless of which side of the debate they might find themselves.

Rule 1: Don't Ignore the Findings of Others, Even When They Conflict With Your Ideas

Ferguson reminds us that it is important for us to be open to the possibility that our ideas are incorrect and that we should not ignore the findings of others that conflict with our own beliefs. There are numerous examples of scholars

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on both sides of the debate committing this scientific sin. When homicide data supported one media researcher's hypothesis, he conducted an ecological study and proclaimed that such data provided a "legitimate test" of his hypothesis and demonstrated that the effects observed in the laboratory were "real and significant" (Anderson, Bushman, & Groom, 1997). However, when other researchers found that homicide rates were unrelated to VVGs, this same researcher claimed that ecological data were "impoverished" (Anderson, DeLisi, & Groves, 2013) and that researchers who employed it should be "embarrassed" (Anderson, Gentile, & Buckley, 2007). On the other side of the debate, Ferguson himself has often claimed that there is little or no effect of VVGs on aggression. Although he might be correct that the effects of VVGs on aggression are small, he should not ignore that fact that nearly every meta-analysis (including his study) has produced positive effects. It is important for researchers on both sides of this debate to embrace research findings that may not agree with their opinions in order to best understand the effects of violent media. Hopefully, researchers will resist the urge to discount the findings presented in Ferguson's article and instead consider possible explanations as to why VVGs do not appear to have a strong negative effect on children.

Rule 2: Don't Ignore the Possibility of Extraneous Variables

Ferguson's study vividly illustrates the importance of considering extraneous variables when examining the link between VVGs and aggression. Analyses that controlled for extraneous variables (e.g., gender, trait aggression, mental health, etc.) produced much lower effects than analyses that did not consider such confounding variables. The reduced effect size Ferguson found ($r = .06$) is almost identical to the effect size ($r = .07$) yielded in the meta-analysis of longitudinal data by Anderson and colleagues (2010) once gender was controlled. However, once again, different researchers had dramatically different interpretations for these nearly identical findings. Ferguson argued that such small effects demonstrated that VVGs have minimal influence on aggression. In contrast, Huesmann (2010) contended that such effect sizes are strong enough to nail "the coffin shut on doubts that VVGs stimulate aggression" (p. 179). Although the small effects found when extraneous variables are controlled are unlikely to halt debate concerning VVGs, researchers do need to exercise caution and not control for too many extraneous variables. We should strive to have parsimonious models that only include theoretically relevant extraneous variables in order to avoid distorting a study's results.

Rule 3: Don't Force Your Data to Get Your Desired Solution

As scientists, we all recognize the importance of not manipulating or forcing our data to conform to our preconceived ideas. This point is echoed by Ferguson in his warnings concerning the frequent use of unstandardized aggression measures by VVG researchers. For example, VVG researchers have often employed the competitive reaction time (CRT) task as an assessment of aggressive behavior. In the CRT task, participants are led to believe they are competing with another person in a series of 25 trials. The "winner" of each trial gets to select both the *duration* and the *intensity* level (on a scale of 0 to 10) of a white noise burst administered to the loser. Using this paradigm, researchers have operationalized aggression as (a) the log-transformation duration (Anderson & Dill, 2000), (b) the sum of the intensity and duration on only the first trial (Bushman & Baumeister, 1998), (c) the product of the average intensity and duration across all 25 trials (Bartholow, Sestir, & Davis, 2005), (d) the sum of the standardized intensity and duration across all 25 trials (Bartholow, Bushman, & Sestir, 2006), and (e) the square root of the duration score multiplied by the intensity score (Carnagey & Anderson, 2005). Altogether, there are at least 13 different ways researchers have scored the CRT task and, depending on the scoring method selected, the significance tests and effect sizes in a study can be dramatically different (Elson, Mohseni, Breuer, Scharnow, & Quandt, 2014).

Even when a given study's scoring algorithm is innocently chosen (and not chosen to produce desired results), the lack of a standardized assessment leaves a cloud of suspicion to settle over such studies due to the mere possibility of researcher misconduct. Adding to this suspicion is Ferguson's finding that the effect sizes yielded from studies employing unstandardized assessments produced slightly larger effect sizes. During a time when researchers are discussing the threats to validity of empirical research presented by a range of questionable research practices including unacknowledged post-hoc changes in design (see John, Loewenstein, & Prelec, 2012), we should all be especially sensitive to using standardized tools.

Rule 4: Don't Go Beyond Your Data

As Ferguson discusses, one limitation of studies examining VVGs is that most researchers in this area have not actually examined severe forms of violent behavior. Although such research suggests a link between violent media and relatively minor forms of aggression, it is unclear whether these results generalize to severe forms

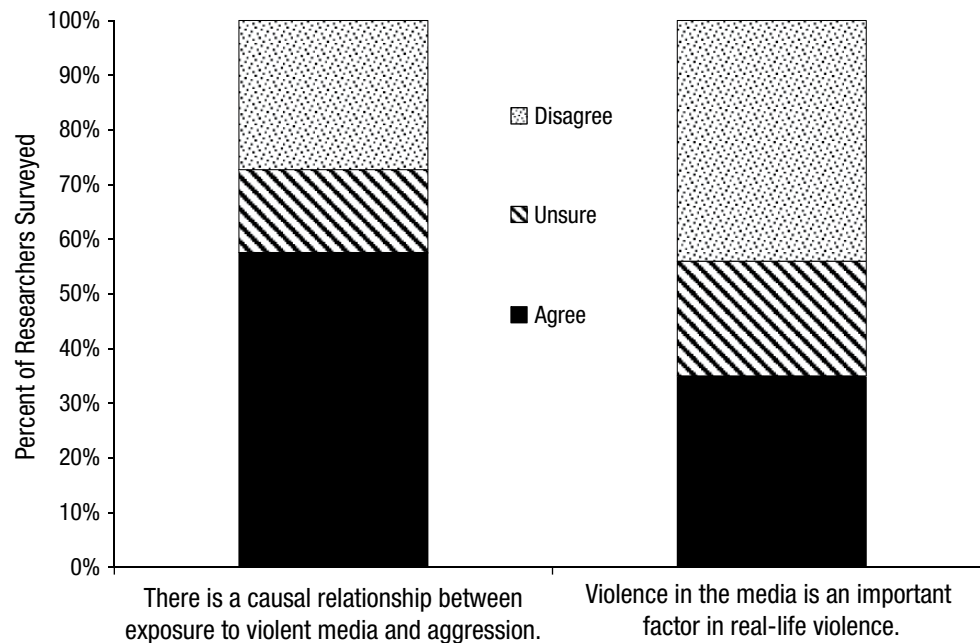


Fig. 1. Media researchers' opinions about the potential negative effects of violent media. Results from a survey of 379 media researchers reported in Bushman, Gollwitzer, and Cruz (in press). Figure was adapted from descriptive data reported in Table 1 of Bushman et al., indicating the number of scientists who agreed, disagreed, or were unsure in their opinions about these questions.

of violent behaviors, such as assault or homicide. Given that the public, media, and lawmakers tend to be concerned about trends in violent behavior and specific acts of violence (e.g., school shootings), it is understandable why some researchers might be tempted to link their research to such horrific real world events. I and other researchers have been guilty of doing this within the pages of peer-reviewed journals when we reference real-world violence to substantiate the rationale and importance of our research (Markey, Markey, & French, in press). However, Ferguson reminds us that researchers need to be aware of the tentative nature of such claims and that they should consistently acknowledge the limitations of their research.

Finding a Middle Ground

Making extreme statements linking VVGs to severe acts of violence or completely discounting the negative effects of this medium are not endorsed by most media scholars. As seen in Figure 1, a recent survey of researchers found that only 35% of media researchers think there is enough evidence to conclude that violent media is related to severe forms of violence, such as homicides, aggravated assaults, or school shootings. However, 57% of researchers do believe that that such media might encourage other types of less aggressive behaviors, such as bullying, spreading gossip, minor fights at school, pushing and

shoving, or hurling insults. Given the null results reported in Ferguson's article, it will be interesting to see if researchers' opinions about even these more benign forms of aggression become more tempered in the future.

The findings and rules presented in Ferguson's article will hopefully encourage some to reevaluate their previously held beliefs about VVGs. After all, every scientist who studies VVGs wants pretty much the same thing. We want to uncover the "truth." We want science, not rhetoric, to inform education, intervention, and policy concerning VVGs. We want to protect our children, friends, and loved ones from any threats posed by VVGs, but we do not want VVGs to distract from the more important causes of violence.

Declaration of Conflicting Interests

The author declared no conflicts of interest with respect to the authorship or the publication of this article.

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