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Are violent video game-aggression researchers biased?

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ABSTRACT

Several recent commentaries have suggested possible researcher bias on the part of scientists conducting studies that find evidence of a causal link between violent video game play and aggression. The present article argues that patterns of authorship, publication, and research findings within the experimental violent video game-aggression literature are inconsistent with the researcher bias hypothesis. It is concluded that the claim of a causal link between violent video game play and aggression is a defensible interpretation of the current experimental and meta-analytic literatures.

1. Introduction

To date, at least nine meta-analyses have been conducted to examine the magnitude and nature of the association between violent video game play and aggression (Anderson, 2004; Anderson & Bushman, 2001; Anderson et al., 2004, 2010; Ferguson, 2007a, 2007b; Ferguson & Kilburn, 2009; Greitemeyer & Mügge, 2014; Sherry, 2001). The most comprehensive of the meta-analyses, based on 140 published and unpublished studies consisting of 68,132 participants, estimated the association between violent video game play and behavioral aggression to be approximately $r = .19$ (Anderson et al., 2010). Anderson et al. (2010) also evaluated this association among the subset of studies in which violent video game play was experimentally manipulated and behavioral aggression was subsequently measured. This analysis, which included 45 published and unpublished studies and consisted of 3,464 participants, resulted in an effect of comparable magnitude ($r = .18$), suggesting that violent video game play has a causal influence on behavioral aggression.

2. A critical view of violent video game-aggression researchers

Despite these empirical findings, the claim that violent video game play causes behavioral aggression has been contested and vigorously debated in several prominent journals in recent years (Bushman, Rothstein, & Anderson, 2010; Ferguson, 2007b, 2010; Ferguson & Kilburn, 2010; Huesmann, 2010). These debates have focused primarily on statistical and methodological issues regarding interpretation of the empirical literature and the various meta-analytic findings. However, some commentaries have implied a more insidious state of affairs with respect to the behavior of researchers who believe in the existence of a causal effect. Specifically, some have implied that these researchers may be biased (Ferguson, 2010; Ferguson & Kilburn, 2010).

According to Ferguson (2010), this bias is evident in several ways. First, he has argued that video game researchers have been overly selective in their reporting of the literature. For example, in commenting on the 2005 American Psychological Association resolution on video game violence (American Psychological Association, 2005), Ferguson (2010) claimed that the resolution was "written by a committee of causal hypothesis scholars commenting largely on their own work and ignoring that of skeptics or research with opposing findings…" (p. 72). Ferguson (2010) described the review of meta-analytic findings reported by Anderson and Bushman (2001) and Anderson (2004) during a court case (ESA, VSDA and IRMA v. Blagojevich, Madigan, & Devine, 2005). He stated that the review "revealed that the authors may have simply ignored research that didn't fit with their hypotheses" (Ferguson, 2010, p.73). In support of this claim, he then quoted a portion of the case proceedings that summarizes the conclusions of several expert witnesses who argued that C. A. Anderson, a prominent violent video game effects researcher, "… failed to cite any peer-reviewed studies that had shown a definitive causal link between violent video game play and aggression, but also ignored research that reached conflicting results" (ESA, VSDA and IRMA v. Blagojevich, Madigan, & Devine, 2005, cited in Ferguson, 2010, p. 73). Ferguson and Kilburn (2010) further noted the apparent "neglect" by Anderson et al. (2010) to mention

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the inverse relation between video game sales and youth violence rates, which they believe offers evidence against the claim of a causal violent video game-aggression effect.

A second form of bias implied by Ferguson and colleagues is the way violent video game researchers tend to measure aggression. Their concern is that researchers are overly flexible in how they compute dependent variables derived from laboratory measures of aggression (Elson & Ferguson, 2014a, 2014b; Ferguson, 2010). According to them, this unstandardized use of aggression measures is favored because researchers are "free to choose outcomes that supported their hypotheses and ignore outcomes which did not" (Ferguson, 2010, p. 75). Ferguson's (2010) criticisms of violent video game-aggression research have led him to suggest that the field is contributing to a "moral panic," which he defines as "a quest by some members of society to impose their moral beliefs on the greater society through the tactic of fear" (p. 70).

It is worth noting that critics of violent video game-aggression research also have been accused of engaging in practices one may interpret as biased in nature. For example, three meta-analyses conducted by Ferguson and colleagues (Ferguson, 2007a, 2007b; Ferguson & Kilburn, 2009), which have been used to argue against the existence of a violent video-game aggression effect, have been criticized for excessive redundancy and lack of transparency in terms of the studies that were included in the meta-analyses. Bushman et al. (2010) pointed out that these meta-analyses contain between 54% and 100% overlap in the sampled studies. Also, the number of sampled studies was quite limited compared to the number of studies in the literature available for analysis, yet little rationale was provided for why these studies were selected as opposed to others. Thus, Ferguson's and colleagues' meta-analyses may create a false sense of how much disconfirming evidence actually exits for the violent video game-aggression effect.

Questions also have been raised regarding the soundness of Ferguson and colleagues criticisms of evidence supporting a causal video game-aggression effect. For example, Ferguson and colleagues have argued that including unpublished studies in meta-analyses tends to create publication bias. This argument has then been used as a basis for criticizing the Anderson et al. (2010) meta-analysis (Ferguson & Kilburn, 2010), which found support for a causal effect of violent game play on aggression. However, Bushman, Rothman, and colleagues countered that the justification for this argument rests in part on citing the viewpoints of other meta-analytic scholars out of context (Bushman et al., 2010; see also Rothstein & Bushman, 2012).

Bushman et al. (2010) also raised concerns about Ferguson and colleagues' claim that overly flexible analyses of behavioral aggression measures are responsible for inflated estimates of the causal violent video game-aggression effect. Commentaries forwarding this claim (Elson & Ferguson, 2014a; Ferguson, 2010) have focused primarily on findings that rely on one laboratory measure of aggression in particular—the Taylor Competitive Reaction Time Task (TCRTT). Yet, Bushman et al. noted that those who espouse this claim appear to disregard Anderson et al. (2010)'s findings that use of the TCRTT (as opposed to other measures of aggression) failed to moderate the experimental effect of violent game play on aggression. These and other criticisms of Ferguson's and colleagues' work can be found in Bushman et al. (2010) and Rothstein and Bushman (2012).

Taken as a whole, bias has been implied on the part of causal violent video game effects researchers as well as on the part of those critical of these researchers. However, claims of bias are more serious with regard to the former group, because they raise questions about whether the empirical findings documenting the existence of a causal effect can even be trusted. Despite the importance of this issue, it appears to have received little attention in the literature. We sought to remedy this state of affairs by evaluating the tenability of the researcher bias claim as it pertains to findings supporting the causal effect of violent game play on behavioral aggression. This evaluation involved consideration of three forms of potential researcher bias and whether evidence of each type exists.

3. Forms of researcher bias

There are at least three forms of researcher bias that would seriously undermine the integrity of the experimental violent video game-aggression literature. First, researcher bias might be limited to a single, but prominent scholar who is able to unduly influence the direction of findings in the field as a result of his or her higher empirical output. Second, researcher bias might be limited to a group of scholars, who, given their numbers or ability to organize, are able to unduly influence the direction of findings in the field. Third, researcher bias toward belief in the effect might be largely systemic, and is present among most psychologists, even those not contributing directly to the violent video game-aggression literature.

3.1. Prominent scholar bias

Could the bias of a prominent scholar be unduly influencing the apparent magnitude of a causal association between violent video game play and behavioral aggression? It is important to note that for such a scholar to be a plausible influence on the average effect he or she would need to have broad influence on the publication or generation of findings in the violent video game-aggression literature. Perhaps he or she has been an editor or associate editor of journals that tend to publish findings supporting the existence of the causal effect. Or perhaps he or she has published highly cited reviews or meta-analyses that concluded in favor of the effect's existence. Additionally, a scholar who conducts experimental work that finds evidence in favor of the causal effect could potentially "stack the deck" by engaging in fraudulent or ethically questionable research practices. Most relevant would be a scholar who meets all of these criteria because he or she has multiple points of influence.

But does such a prominent scholar exist in the violent video game effects field? We suggest one does: Craig A. Anderson.[1] Not only is his name periodically associated with many of the implied claims of bias mentioned above (Ferguson, 2010; Ferguson & Kilburn, 2010), but he has been an associate editor at *Aggressive Behavior* and *Personality and Social Psychology Bulletin*, as well as an editorial board member for a host of other journals, many of which have published experimental work supporting the causal effect. He has been the leading author on multiple meta-analytic reviews that find evidence in favor of a violent video-game aggression effect more generally (Anderson, 2004; Anderson & Bushman, 2001; Anderson et al., 2004), and a causal violent video game-aggression effect more specifically (Anderson et al., 2010). Most significantly, of the 45 experimental studies of the violent video game play effect on behavioral aggression used in the Anderson et al. (2010) meta-analysis, 11 (24.4%) were conducted by Anderson. Moreover, all 11 of these experiments were included within a subset of 27 experiments that Anderson et al. (2010) identified as meeting "best practice" standards. Within the best practice set of experiments the percentage conducted by Anderson rises to 40.7.

Of course, even if an author is prominent and possesses multiple points of influence, it does not mean he or she is necessarily biased. Nevertheless, is there any evidence that Anderson's influence is driven by bias? We suggest that examining Anderson's meta-analytic contributions and experimental work on the causal violent video game-behavioral aggression effect provides a reasonably clear answer to this question. First, although he is an author on several earlier meta-analytic reviews that have been criticized for being limited in their selection (Ferguson, 2010), he is first author on the most comprehensive

[1] For the sake of disclosure we note that the second author is now a graduate student working with Craig A. Anderson at Iowa State University. Evaluation of the researcher bias claim was initiated by the first author and the conclusions forwarded were largely developed prior to the second author's acceptance into Craig Anderson's research lab. The first author has corresponded with Craig Anderson several times by email in a professional capacity. The third author has never had contact with Craig Anderson.