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COMMENTARY

Consensus on Media Violence Effects: Comment on Bushman, Gollwitzer, and Cruz (2015)

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We summarize the main findings of Bushman, Gollwitzer, and Cruz (2015), highlight its empirical contributions, and note interesting patterns and implications for future research. The results demonstrate that consensus exists among experts on the reality of harmful media violence effects on children and adolescents. We note likely differences in the makeup of the different samples and how these might have affected the results. This comment also presents a new breakdown of the Bushman et al. findings, highlighting the high consensus for causal screen media violence effects on aggression, which fairly closely mirrors findings from that voluminous research literature, and compares this to the lack of consensus on the harmful effects of print media violence, which corresponds to a quite small research literature. We conclude with a call for research on how to overcome resistance to unpopular scientific findings.

Keywords: media violence, aggression, video game violence

Bushman, Gollwitzer, and Cruz (2015) report a very interesting survey study of the beliefs held by several key groups who are (or at least ought to be) concerned about potentially harmful effects of violent media on children. Their well-conducted survey provides convincing evidence that there is considerable consensus among members of media and communication societies, pediatricians, and even parents that exposure to media violence increases hurtful behavior by children. These consensus beliefs mirror the largely consistent research findings of actual negative effects of violent media on thoughts, feelings, and behaviors (Anderson et al., 2003, 2010; Anderson & Bushman, 2002; Bushman & Huesmann, 2006; Greitemeyer, & Mügge, 2014).[1] This commentary highlights the importance of these findings, notes why the media and communication samples may be biased against believing in harmful media effects (relative to a sample of expert media violence researchers), and discusses several issues involving vocal critics of mainstream research findings.

Much like other well-known cases in which powerful, profitable industries have waged disinformation campaigns against specific scientists and general fields of scientists whose research suggests that their products cause harm, the TV, film, and video game industries and their apologists spend considerable time, effort, and money sowing the seeds of doubt about the science in this area.[2] As so aptly noted by Nijhuis (2008), the industries (and their apologists) don't have to prove anything in order to win; all they have to do is sow the seeds of doubt. They "win" if enough doubt is sown to convince the public and public policymakers "to reject the case for taking action to tackle threats to health" (Diethelm & McKee, 2008, p. 2; see also Jack, 2011). In short, they win if they can prevent a strong consensus from emerging, regardless of what the science actually shows.

Bushman et al. (2015) Main Findings

In Figure 1, we highlight the primary screen media (TV, movies, and video games) and print media (comic books and literature) results to facilitate our discussion. One notable aspect of Figure 1 is the high degree of consensus that screen media violence is a causal risk factor for aggressive behavior. This result shows that claims of a lack of consensus are greatly overstated. There is considerable consensus among members of media and communication societies, pediatricians, and parents. The whopping differences between the Causal and the Not Causal columns practically leap from the page.

Also obvious from Figure 1 is that there is relatively little consensus about print media violence effects on aggressive behavior. This comparison of screen and print media consensus mirrors the research literature in at least one interesting way. Specifically, the research literature on screen media violence effects is much

[1] Only comprehensive reviews are included among the examples. There are additional instances of highly selective (and frequently biased) reviews, but they are less relevant because the comprehensive reviews cited here include considerably more relevant studies. There also are many excellent older comprehensive reviews; see Anderson et al. (2003) for citations to many of them.

[2] Resistance to or denial of scientific findings examples include tobacco effects on cancer and heart disease, asbestos effects on cancer, mercury poisoning, lead poisoning, Dioxin poisoning, acid rain, evolution, global warming, HIV as a cause of AIDS, false claims about vaccines and autism, and real findings on football/brain injury effects.

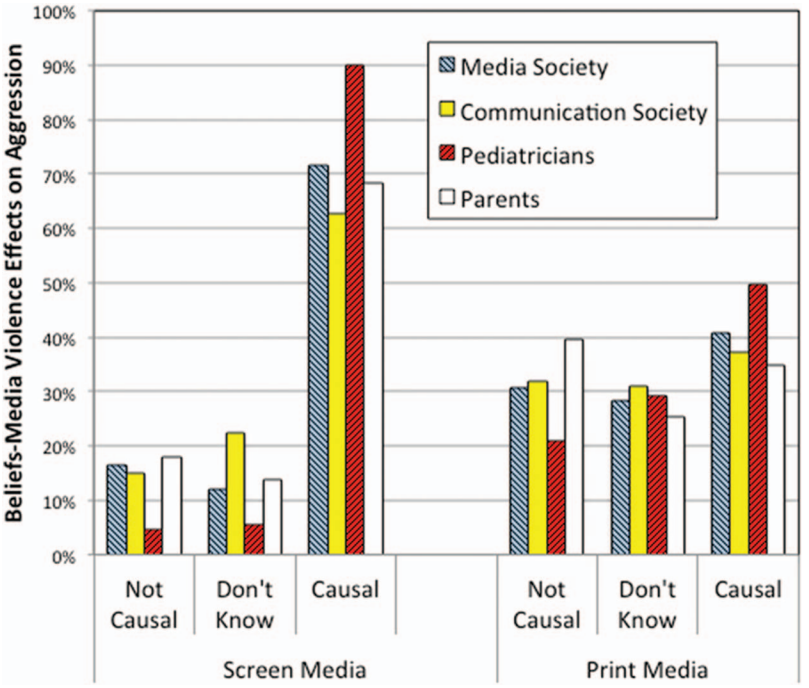

Figure 1. Beliefs about the causal effects of screen (TV, movies, and video games) and print media (comic books and literature) violence on aggressive behavior by members of a scholarly media society, a scholarly communication society, pediatricians, and parents. Not Causal is the combined total of strongly disagree and disagree categories, Don't Know is the neither agree nor disagree category, and Causal is the combined total of strongly agree and agree categories. (Data Source: Bushman et al., 2015). See the online article for the color version of this figure.

larger and more compelling than the literature on print media violence effects. We are not saying that print media violence effects don't exist (Bushman, Ridge, Das, Key, & Busath, 2007; Coyne, Ridge, Stevens, Callister, & Stockdale, 2012). But, there is much less research on print media effects, and there is little (if any) evidence of long-term effects of print media violence on aggression; relevant longitudinal and cross-sectional studies are virtually absent. Furthermore, there are theoretical reasons to believe that, *on average*, print media violence effects are likely to be considerably weaker. One needs only to consider the frequency and vividness of violence encountered per hour while reading the Lord of the Rings trilogy versus watching the associated movies and playing the associated video games, and to consider the context differences between typical screen versus print media violence, to get an idea of the vast differences between the psychological processes engaged by different media types. Furthermore, consider the reading skills (and therefore age) required to read and enjoy that book series, versus the very young age at which one can comprehend and participate in the violence displayed in the movies and video games. All of these considerations suggest that many psychological processes are involved during consumption of entertainment media, and that there are vast differences in the dominant processes engaged in print versus screen media.

Differences Between Samples

An additional point of interest concerning screen media violence consensus in the Bushman et al. (2015) study arises from a close inspection of differences between the four samples. Specifically, there is less consensus among some of the sampled groups than there logically should be. Logically, people who aren't them-

selves true experts in a scientific domain should base their beliefs about that domain on the statements made by the true experts. For example, our beliefs (i.e., authors of this comment) about the reality of global warming are largely based on the statements of panels of global climate scientists, not on our own (virtually nonexistent) expertise in climate science. Somewhat closer to home, even though all of the present authors have expertise in the broad domain of human aggression, none of us are experts on the behavioral effects of testosterone on aggression in mice. Therefore, we must rely on true experts in that domain, as well as our general expertise in the scientific method and its application for investigating such questions, for any beliefs that we might hold about testosterone and mouse aggression. It would be foolish and silly for us to denigrate the findings of the mouse-testosterone-aggression experts because our personal experiences with mice seem different; it would be unethical for us to proclaim to the world that our views of mouse-testosterone-aggression findings were as valid as those of researchers who actually study the phenomenon.

This point is relevant because every major panel of scientific experts that has reviewed the research on screen media violence effects has come to the same conclusion—that media violence (usually meaning screen violence) is a causal risk factor for increased aggressive behavior. This includes expert panels created by the American Academy of Pediatrics, the American Psychological Association, the American Academy of Child & Adolescent Psychiatry, the American Medical Association, the American Academy of Family Physicians, the American Psychiatric Association, the U.S. Surgeon General, the International Society for Research on Aggression, the U.S. National Institutes of Health, and most recently the Society for the Psychological Study of Social Issues (SPSSI, 2014), among others. Scientific panels in other countries have reached the same conclusion. Logically, then, people who are not true experts on media violence research (see Anderson & Gentile, 2008, p. 287, for suggested criteria) should either have no firm opinion about the issue (e.g., if they are unaware of what the true experts have concluded), or should adopt the position of the true experts.

Interestingly, there is one notable group missing from the Bushman et al. (2015) consensus study: the small group of true scientific experts on media violence. It seems safe to assume that this group, were it to be identified and sampled, would yield even higher levels of consensus, given that subsamples of such true experts have repeatedly written reports finding such evidence (e.g., the U.S. Surgeon General's panel that published the Anderson et al., 2003, report).

So, why wasn't consensus about the causal effects of screen violence even higher in Bushman et al.'s (2015) study? Of particular interest (and some concern) is the fact that members of the sampled media and communication societies didn't show substantially greater consensus and accuracy about screen violence effects than did the parents. There are likely several factors involved in the differences among the four groups. The very high consensus found in the pediatrician sample may result from the fact that the American Academy of Pediatrics (AAP) has done a good job of communicating the experts' findings to their members, something that neither of the other sampled societies (media, communication) has done. Alternatively, pediatricians see large numbers of children, many of whom have behavioral problems that the parents discuss with them. So, it is possible that the high consensus among pediatricians is the result of their experience in practice, though the research literature on how difficult it is to accurately perceive covariation between real world variables in clinical contexts, coupled with the modest effect size of screen media violence on aggression, casts some doubt on this alternative explanation. Of course, it is possible that it is the combination of consistent educational efforts by the AAP and clinical experience of practicing pediatricians that led to high consensus among this group.

The other two sampled societies both have substantial proportions of members who are neither behavioral science experts nor researchers in media violence, but rather are people interested in learning about effective ways of using media in the real world. Some do not have a research doctorate in an appropriate behavioral science field and some are employed by media industries (and, therefore, likely have a bias—or at least a conflict of interest—when reporting an opinion on media effects). In other words, we cannot assume that all members of these two societies are "researchers" or experts in media violence effects research. Indeed,

many top media violence experts are not members of these societies. To be sure, many members are true experts, but many are not. Unfortunately, there is at present no way of knowing the relative proportion of the members of each group who are true experts in media violence effects.

Furthermore, many people in both groups are likely strong supporters of freedom of speech rights as embodied in the U.S. First Amendment (as are we), many are great fans and consumers of violent media (as are some of us, including the first author), and some may feel threatened by the possibility of there being true harmful effects of violent media (see Laurin, Kay, & Fitzsimons, 2012; Nauroth, Gollwitzer, Bender, & Rothmund, 2014).[3] It would be interesting to see what level of consensus would emerge from membership of other organizations that vary in terms of their relevant expertise and their own expert panel statements concerning media violence effects, such as the International Society for Research on Aggression (ISRA) and the Society for the Psychological Study of Social Issues (SPSSI).

The Bushman et al. (2015) survey did not include an option allowing respondents to indicate that they either had no opinion or did not believe that they had sufficient knowledge to have an opinion. A substantial portion of those who checked the "neither agree nor disagree" option may have been of this type. This is not necessarily a weakness of the study for its intended purpose, but would be a question of interest for future research.

Another point of interest is that the somewhat lower level of screen media consensus reported by parents (relative to pediatricians) can be viewed as the proverbial glass that is either half full or half empty. The pessimistic view is that it demonstrates just how effective the TV, film, and video game industries have been in keeping the general public unaware of the consensus that has emerged from expert scientific panels. That is, despite the consensus among true experts in this domain over several decades, despite public statements by various expert panels (again, over several decades), and despite work by AAP and other parent/child education and advocacy groups, many parents are still ignorant about the true facts of screen media violence effects. This ignorance also helps explain why so few parents take an active role in regulating their children's use of violent media, which has been documented in many studies.

The optimistic view of the parent results is that despite the major efforts of individuals and groups who deny that media violence has deleterious effects, and despite the failure of news journalism in general to accurately portray the state of the science (Bushman & Anderson, 2001; Martins et al., 2013), most parents do have the factually correct belief that screen violence is a causal risk factor for aggression. The extent to which that belief comes from personal observation of their own children; from news reports they have read; from the educational efforts of pediatricians, parent/child support and advocacy groups; from schools; or from other sources is unknown, but would be worth further study.

Future Studies

In the history of research on the smoking/lung cancer link, one fascinating finding was that the first group of physicians to quit smoking was thoracic surgeons, those who most directly saw the ravages of smoking on the lungs. It would be interesting to know whether a similar phenomenon is occurring among psychologists. Specifically, which groups of psychologists are most likely to closely monitor and control their children's exposure to media violence? Do members of societies with greater expertise in media violence (e.g., ISRA) or greater interest in applying psychological science to real world issues (e.g., SPSSI) show greater or lesser consensus on media violence effects than the groups studied by Bushman et al. (2015)?

Another set of important questions in need of research concerns the extent to which self-image, self-identification, or self-involvement with media violence drives resistance to the scientific findings. Nauroth et al. (2014) showed that gamers feel stigmatized by and are angry about research findings that demonstrate negative effects of violent games. Bender, Rothmund, and Gollwitzer (2013) demonstrated

[3] Of course, scientific consensus that violent media exposure is a causal risk factor for later aggressive and violent behavior does not (and should not) directly translate into public policy that restricts the production, dissemination, or use of such media by anyone; other factors play major roles in public policy (Anderson & Gentile, 2008).

empirically that as research participants, gamers will sabotage studies of violent video game effects on aggression, even when presented with a compelling cover story.

In general, several large research domains (e.g., attitudes, decision under uncertainty, motivated cognition, self-identity) are relevant to questions about how people deal with information that is discrepant with prior beliefs or important values. Generally, studies show that people will go to great lengths to defend importantly held beliefs and values, including engaging in selective searches for information that supports their position, engaging in biased information processing and perception, and selectively attending to and remembering biased information. These processes often occur without the person's awareness. Classic studies of this type include Lord's work on capital punishment beliefs (Lord, Ross, & Lepper, 1979). Similarly, Anderson's work on social theory formation, perseverance, and change found that even trivial beliefs formed on the basis of weak or even hypothetical data can survive logically compelling challenges (Anderson & Lindsay, 1998; Anderson & Sechler, 1986).

Basically, we would expect that people who strongly identify with violent games—for example, gamers, producers or sellers of games—are most likely to deny any harmful effects, because such effects threaten either the self ("I've played violent games all my life, I'm not an aggressive person, so your claim of harmful effects can't be true"), some important self-related aspect of one's life ("I sell video games to children, I'm a loving parent and a good citizen, so your claim of harmful effects can't be true"), or even their job. As research participants, such people also are the most likely to intentionally behave in ways that validate their positive self-images when in studies that they believe are attempting to link violent games and aggression, a sort of "reverse" demand characteristics effect (Bender et al., 2013). Such sabotage can easily be done in most (but not all) studies, by intentionally behaving very nonaggressively in standard laboratory aggression paradigms, by reporting low levels of past aggression in survey studies, or by underreporting one's own amount of exposure to violent media.

There are numerous theoretical reasons for this denial and these behavioral reactions, including cognitive dissonance, self-esteem maintenance, and other motivated cognition processes. Indeed, the fact that a very few researchers consistently fail to replicate well-established findings may be the result of their using research methods that fail to adequately disguise the violent media/aggression aspect of their studies (see the comparison of different research groups by Greitemeyer, & Mügge, 2014). All it would take would be a revealing study name on a sign-up sheet, a weak cover story on a consent form or in the instructions, or even the reputation of the lab as being one that conducts research on media and aggression.

Even a cursory inspection of gaming sites reveals that even children and adolescents are well aware of the media violence and aggression issue. On one hand, this makes conducting media violence research in the modern era much more difficult than in past decades. It also increases the need for researchers to—(a) more fully disclose their study names (on sign-up sheets and/or consent forms), recruitment procedures, cover stories, and instructions; and (b) more carefully assess and report participant suspicion. On the other hand, this also provides an opportunity to investigate denial and perseverance processes in the context of highly motivated beliefs and values, as interesting research topics in their own right. Similar research can (and should) be done on resistance to global warming science (for instance), and on discovering procedures that reputable scientific and public policy groups could use to help the general public to accurately understand scientific facts that are of relevance to them personally and to the welfare of larger society (e.g., that vaccinations do not cause autism).

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