ORIGINAL ARTICLE

Understanding Why Scholars Hold Different Views on the Influences of Video Games on Public Health

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Despite decades of research, no scholarly consensus has been achieved regarding the potential impact of video games on youth aggression or other public health concerns. In recent years, hypotheses have been raised that scholarly opinions on video games may resemble past moral panics, with attitudes reflective of generational conflicts. These hypotheses are tested in a sample of 175 criminologists, psychologists, and media scholars, examining both overall negative attitudes about video games and perceived linkages with youth assaults specifically. Results reflected continued lack of scholarly consensus on the issue of video game influences with only 15.3% of scholars endorsing the view that violent video games contribute to youth assaults. As hypothesized, older scholars endorsed more negative views of video games generally, although this appeared to be related to experience with games rather than age per se. Scholars with more negative attitudes toward youth themselves were also more negative about games. Criminologists and media scholars were more skeptical of violent video games contributing to youth assaults than were psychologists. These results are discussed in relation to Moral Panic Theory.

In fall 2015 the American Psychological Association (APA) released their new policy statement on video game violence which acknowledged violent video games cannot be linked to criminal violence, but which argued they could be linked to milder aggression. The task force itself had been controversial, often criticized for its lack of transparency, apparent biases and conflicts of interest of its members, and potential flaws in the small and selective meta-analysis the task force conducted (see Wofford, 2015). Significant concerns about this task force led 238 scholars, including media scholars, psychologists, and criminologists, to write an open letter to the APA in

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2013, asking them to retire their policy statements on media violence (Consortium of Scholars, 2013). This interchange between the APA and a large group of scholars highlights the continued controversies and disagreements regarding potential influences of violent video games and what, if anything, should be done to promote a regulatory policy agenda on the issue. In recent years, some scholars have argued that the social processes underlying these disagreements are themselves important to understand (Quandt & Kroger, 2013; Quandt et al., 2015; Quintero-Johnson, Banks, Bowman, Carveth, & Lachlan, 2014). This article seeks to address this issue by examining disagreements about the impact of video games among criminologists, psychologists, and media scholars and how these relate to both generation and attitudinal factors.

A brief history of video game debates

Researchers have been interested in the potential impact of video games on youth for decades. Such research has examined for both positive (e.g. Jackson et al., 2012) and negative (Konijn, Nije Bijvank, & Bushman, 2007) influences of games, with a lion's share of the attention on negative effects such as aggression and addiction (Ivory, 2013). The video game violence debate particularly has waged for decades, as evidenced by the continued controversy over the American Psychological Association's 2015 policy statement. However, such debates also raged among scholars as far back as the 1980s, with concern over "violent" games such as Pac Man, Zaxxon, and Centipede. Then, as now, there were studies that both did (Cooper & Mackie, 1986) and didn't (Dominick, 1984) find evidence for deleterious effects. Even meta-analyses don't agree, with some arguing for the presence of effects on aggression (e.g. Anderson et al., 2010) and some arguing against such effects (Ferguson, 2015a; Sherry, 2007). Further, more recent studies that are preregistered have suggested minimal video game influences on negative outcomes (Ferguson et al., 2015; McCarthy, Coley, Wagner, Zengel, & Basham, 2016; Przybylski, Weinstein, & Murayama, in press). Thus, it can be difficult to make clear statements about video game influences on aggression.

The value of current studies of video game influences on aggression has also been questioned. For instance, laboratory aggression studies may use measures that lack proper standardization and validation and may be open to questionable researcher practices (Elson, Mohseni, Breuer, Scharkow, & Quandt, 2014). Correlational studies may focus too much on bivariate correlations without properly noting that these tend to vanish once other factors such as gender and personality are properly controlled (Kanamori & Doi, 2016). There have likewise been broader concerns about the culture of video game violence research in which researchers, influenced by politics, may have been overeager to find video game influences, resulting in a "self-fulfilling prophesy" effect. For instance, scholars who misrepresent the aggression field as more consistent than it is are now known to report higher effect sizes in their research than scholars who present balanced literature reviews (Ferguson, 2015a).

Similar controversies exist in other areas such as the potential impact of video games on academics (Adachi & Willoughby, 2013), sexism (Breuer, Kowert, Festl, & Quandt, 2015), addiction (Kowert, Vogelgesang, Festl, & Quandt, 2015), and mental

health (Desai, Krishnan-Sarin, Cavallo, & Potenza, 2010). For instance, one group of 26 scholars recently wrote to the World Health Organization, asking them to reconsider their impending video game addiction diagnostic categories (Aarseth et al., in press). Given that evidence is mixed, scholarly opinions on the impact of video games are similarly divergent and often strongly held. Communication of these scholarly opinions have oftentimes been used to attempt to influence policy, call for more grant funding, or support regulation of games. Most notably, a 2011 Supreme Court case (Brown v EMA, 2011) considered potential regulation of violent game sales to minors, and included amicus briefs from competing groups of scholars both supporting and not supporting the California law at the heart of this case. Ultimately, the Supreme Court in a 7-2 decision ruled that regulation of violent content was unconstitutional and that research evidence could not support contentions that violent games posed an imminent public health concern.

It is worth noting that not all research on video games involves negative influences. For instance, considerable research has looked at the impact of video games on cognition (Spence & Feng, 2010), intergroup cooperation (Adachi, Hodson, Willoughby, Blank, & Ha, 2016), and mood management (Rieger, Frischlich, Wulf, Bente, & Kneer, 2015). Although, in some areas such as improved intelligence, concerns have been raised about similar exaggeration of false effects as seen for aggression (Simons et al., 2016).

How much agreement is there on video game influences?

Given the perceived stakes in some of these realms, it has not been uncommon to see groups of scholars advocating for one policy agenda or another, or make claims to scholarly consensus to promote such agendas. An *argument to consensus* occurs when an advocate for a position claims that position must be true because a majority of individuals believe it to be true. Although argument to consensus is a logical fallacy with no direct relevance to the factual nature of a particular policy agenda, such arguments can have powerful emotional appeal. For instance, although the strength of climate change research rests primarily on an accumulation of data over decades of research, it is not uncommon to hear arguments that a scientific consensus has been reached on the issue as incentive to pursue policy on the matter. Of course, the primary evidence for climate change is empirical in nature, where evidence appears to be consistent. However, the argument to consensus appears to be used as a rhetorical device to silence skeptics once that empirical threshold had been reached.

Granted, on the issue of climate change, evidence for consensus is strong, with over 90% of climate scholars agreeing on at least basic elements such as that climate change is occurring in recent decades (Lefsrud & Meyer, 2012). On the issue of media violence, evidence for consensus is less clear. Evidence for a consensus among scholars in the 1980s seemed somewhat clearer than at present. Murray (1984) found strong evidence of agreement among psychologists (90%) and communication scholars (85%) with a warning about media violence, reported by the National Institute of Mental

Health, as evidence for a link, as strong as any other factor influencing aggression, between media violence and societal aggression.

More recent research has not provided any evidence for greater consensus, and indeed possible bias in sampling needs to be taken into account. For example, Bushman, Gollwitzer, and Cruz (2015a) used specified groups of scholars (e.g. APA's Division 46 Media Psychology and Technology), though other, perhaps arguably appropriate groups were not included (e.g. Division 10, Psychology of Creativity, Aesthetics and the Arts). Findings for scholars were 58% agreeing that there was a causal link between media violence and aggression, 35.2% that it contributed to real life violence. Approximately 66% of scholars agreed that violent video games could cause aggression, although the type or level of aggression was not specified. However, the finding that most closely matches the measure used by Murray (1984), of 35.2% for agreement that media violence was a factor in real life violence, is substantially less than the 87.5% found by Murray some 30 years ago. This reduction in consensus occurred despite increases in levels of violence and realism in video games. To further add controversy, potential problems with the methodology of Bushman et al. and its claims for consensus were also alleged soon after release. In one response article in the same journal, Ivory et al. (2015; see Bushman, Gollwitzer, & Cruz, 2015b for reply) expressed the concern that the sampling methods used by Bushman et al. were biased, some of the analyses incorrectly done, and the ultimate results ultimately illustrative more of disagreement than consensus. This exchange revealed that scholars were unable to come to a consensus on what was indicative of a consensus. However, controversies over the original Bushman et al. (2015) paper emerged earlier when the in press version was released to news media. Two psychological researchers reported that major statistical errors had been found in the manuscript (as reported by Ivory et al., 2015) during the comment/reply process, and Bushman et al. were effectively allowed to mulligan a new set of analyses for the original paper (Etchells & Chambers, 2014). This raised concerns regarding the transparency of the editorial process for this article.

In contrast to Bushman et al.'s (2015a) study, a wider sample of media scholars used by Quandt et al. (2015) found, regarding a statement that the effects on aggression by game violence were a problem for society, only 10.1% agreement. Quandt et al. suggested that differences in wording of the two surveys could help understand differences in responding. For instance, one might reasonably agree that media violence causes increase in very mild forms of aggression, but that these do not represent a problem for society or contribute to youth violence. Results on clinicians by Ferguson (2015b) likewise found that a majority disagreed with linking video game violence to youth assaults. Figure 1 presents current data on scholarly consensus on media violence effects. Similar data from Lefsrud and Meyer (2012) are presented to provide a contrast between the scholarly consensus on climate change compared to that for media effects. This is useful to compare when considering what one means when discussing the issue of consensus.

Lack of consensus over the strong claims for research support for a causal link between video games and aggression were such that around 230 media scholars asked
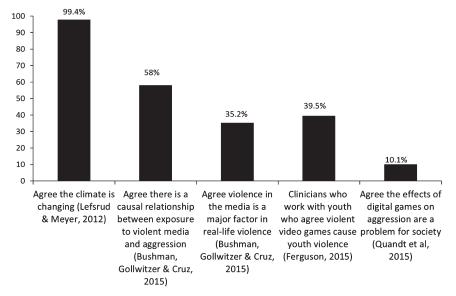
Figure 1 Scholarly consensus on climate change and media violence effects, a comparison.

the APA, in an open letter (Consortium of Scholars, 2013), to revoke their public statements which verified the existence of such a link. However, clearly scholarly views do differ regarding the causal link, and it is of interest to explore reasons for those differences.

Understanding debates on video games: A sociology of media research approach
At present, video game research, whether on aggression, addiction or positive outcomes, consists of a large pool of individual studies comprising some, largely inconsistent whole. That individuals may look at this pool of research and come to different conclusions about its meaning may not be surprising, but that this lack of consensus extends to scholars as well as policy makers and the general public warrants further consideration. This is particularly important as science does not exist in a vacuum of facts, but influences and is influenced by politics as well as by prevailing social attitudes. For instance, in a recent conversation regarding the World Health Organization's (WHO) proposal to include gaming disorder diagnoses in the forthcoming version of the International Compendium of Diseases, one WHO official acknowledged that "enormous pressure" from political entities in Asian countries was part of the decision process (Geoffrey Reed, personal communication, August 2016). Understanding the psychology and sociology of how scholars' beliefs about video game effects relate to individual and sociological factors can provide information for how research evidence and policy positions of professional organizations may be improved in accuracy.

One theoretical platform for understanding this sociology of media effects research is to understand the social context of such research through Moral Panic

Theory (MPT; Cohen, 1972). Put simply, MPT states that cultures create "folk devils" to explain perceived social crises. These folk devils function to create an explanation for the perceived crisis at which moral repugnance can be directed. Calls to eliminate the folk devil in question create an illusion of control over the crisis and the perception of hope that the crisis can be allayed (Ben-Yahuda, 2009).

Moral panics can take a wide range of forms, although it is well documented that media, particularly that with perceived offensive content, often serves as folk devil for perceived crises such as violent crime or teen sexual promiscuity (Bowman, 2016; Gauntlett, 2005; Kutner & Olson, 2008). Moral panics often focus on newer forms of media that may not yet have been embraced by large swaths of society, particularly older adults. As a key element, a negative social narrative forms about this new media, initially based on moral repugnance, rather than data. Once this occurs, the social narrative incentivizes stakeholders including policy makers, news media, and scholars to promote (rather than objectively test or scrutinize) the moral panic. Policy makers may need to be seen as "doing something" about the perceived crisis, news media receive more subscriptions or "clicks" based on sensational claims of crisis, and scholars achieve better grant funding, news coverage, and professional prestige. Figure 2 presents the Moral Panic Tsunami, first developed by Gauntlett (2005), that demonstrates the interchange between policy makers, news media, and scholars, all filtered through the incentives of a pre-existing social narrative.

The role of scholars in this process is of interest to this article and it is important to begin with the understanding that scholars are human and, as such, susceptible to both the biases and incentives that influence the attitudes and decisions of humans in general. One area where this can be witnessed is simply related to the nomenclature of video games themselves used for research studies. Many studies of both positive and negative influences of video game use focus on the shooting game genre. When the focus is on positive effects they are often referred to by the relatively innocuous term *action* games (e.g. Spence & Feng, 2010) but when negative effects such as aggression are considered the far more morally valanced term *violent* video game is used (e.g. Engelhardt, Mazurek, Hilgard, Rouder, & Bartholow, 2015) despite that the same shooter genre games are being employed in both sets of studies. This is just one indication that moral terminology is selective employed, whether consciously or unconsciously, by scholars to suit specific purposes.

This process could be seen on display after the 2012 Sandy Hook shooting in the United States during which 20-year-old Adam Lanza killed multiple school children and adults at an elementary school as well as his own mother, before taking his own life. As the investigation was kept confidential for 11 months, little was known about Lanza's video game habits. Ultimately, after the 11-month investigation, it would be revealed that Lanza preferred playing nonviolent games, particularly Dance, Dance Revolution, and Super Mario Brothers (State's Attorney for the Judicial District of Dansbury's, 2013). In the interim, some politicians, scholars, and news media eagerly linked the shooting to apocryphal claims about Lanza's alleged but ultimately false obsession with violent video games. Criminologists who have studied this issue point
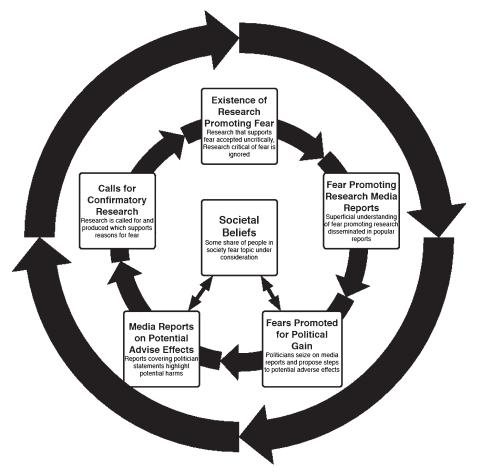
Figure 2 The moral panic tsunami.

to it as an example of the "myth" linking violent video games to mass shooting events that is typical of a media moral panic (Fox & DeLateur, 2014).

The Goldilocks Effect
One observation about media-based moral panics is that they tend to be generational in nature (Gauntlett, 2005; Kutner & Olson, 2008). That may be because, although media tends to continually push the boundaries of acceptability, individual tastes in media may be "locked in" according the media consumed in one's early years with a fair degree of continuity in media tastes over time (Himmelweit & Swift, 1976). Just as boundary pushing during one's own youth can seem artistically appropriate or serve the purpose of developing autonomy from the more conservative taste of society elders, so too can the boundary pushing of subsequent generations of youth appear to be beyond the pale of good taste. This creates what we refer to as the *Goldilocks Effect* in which each generation believes that its preferred media is "just right" … neither too

morally restrictive, nor morally extreme. The emotional/moral reactions to *offensive* media may be translated to beliefs in the *harmfulness* of media, with science (particularly nontransparent in nature) being used as a cover for moral regulation (Critcher, 2009; Thompson, 2008).

These generational divides can appear in the form of age differences in regards to attitudes toward new media. Among both clinicians (Ferguson, 2015b) and the general public (Przybylski, 2014), age is a strong predictor of negative attitudes about video games. In fairness, biases may work in both directions with younger people defensive about their hobby (Kneer, Munko, Glock, & Bente, 2012), just as older people may be reflexively hostile toward it. However, this may have less to do with age, per se, but rather the selective exposure of individuals of different ages to new media. Older adults, being locked in to their own media preferences through the Goldilocks Effect, are slower to embrace new media and quick to become suspicious of its potential ill effects. In this sense, age may be a proxy for unfamiliarity with the media in question and that unfamiliarity breeding concern. According to one recent study, for instance, older adults worry little about the impact of an M-rated game they themselves played, but do worry about "violent video games" as an abstract concept (Ferguson, Nielsen, & Maguire, in press).

Individual level traits
Other, individual-level factors may also play a role in suspiciousness to new media. These would include various personality or attitudinal factors that make some individuals prone to suspiciousness toward new media. For instance, some prior work has indicated that trait pacifism may increase concern about new media (Rothmund, Bender, Nauroth, & Gollwitzer, 2015). In addition, Ferguson (2015b) found that negative attitudes toward youth themselves also predicted negative attitudes toward video games. However, general personality variables and pacifism did not. Negative attitudes toward youth may be reflective both of difficulties adjusting to new cultural shifts indicated by new media. Negative attitudes toward youth may also reflect a tendency to endorse negative stereotypes of youth such as elevated violence or promiscuity or reduced respect or work ethic. Sociologist David Finkelhor (2010) has identified this concept as "juvenoia"; the tendency of some older adults (though not all, certainly) to disparage youth. Of course, some youth may also hold negative stereotypes of older adults, but these are less likely to reflect in negative attitudes toward new media. Little is known about what other intrapersonal variables might predict negative attitudes toward video games.

One possibility is that sanctimoniousness, the tendency to view oneself, perhaps self-deceptively, as more moral than others, may predict negative attitudes toward newer media. A certain degree of sanctimoniousness is a common human failing, but it is also likely that sanctimoniousness can be viewed as a trait, as indicated by a tendency to unrealistically present oneself as more moral than a typical person would be. Although a considerable field of research has examined moral judgment, less is known about moral judgments that are hostile or aggressive in form. Individuals

high in sanctimoniousness may be quicker to negatively judge the activities of others, particularly activities which they don't like or value. Particularly, individuals high in sanctimoniousness may tend to view themselves as disinclined to appreciate media that is "offensive" and look down upon those who do. However, this has not yet been tested.

The role of discipline

In previous sections, we have examined the role that both generational culture and individual level traits may play in the development of negative attitudes toward video games. These elements may work equally for the general population as for scholars. Yet, among scholars, other issues may be at play such as discipline specific beliefs, ideologies, foci, and intellectual products. These can, themselves, result in discipline level differences regarding attitudes toward video games.

As noted in Quandt et al. (2015), the identification of disciplines and emerging fields that may overlap disciplines can be complex. However, we focus on three broad categories, namely communication/media scholars (henceforth just "media scholars"), psychologists, and criminologists. Naturally, the boundaries between these three fields are not necessarily distinct (indeed one of the authors of this article has involvements in all three). At the same time, the three fields may possess different approaches, assumptions, and methodologies that create different attitudes toward new media such as video games.

Of the three, media scholars arguably may be the most diffuse, potentially including individuals with degrees in not only communications, but an expanding array of programs in games studies, digital games research, letters and literatures, etc. Nonetheless, our conceptualization of this field was similar to that of Quandt et al. (2015), if perhaps not limited specifically to digital games research, but likely comprisied of scholars who identified with organizations such as the International Communication Association or European Communication Research and Education Association (ECREA). Such scholars may have qualifications in multiple areas, but are unified by selecting media as their primary focus of study. Quandt et al. (2015) identified this area, particularly the emerging subfield of digital games research, as possessing fairly homogeneous assumptions, particularly related to relatively optimistic views about the role of media in society. By contrast to both psychologists and criminologists, media scholars may have a deeper interest in understanding the medium itself rather than as something done to people and as the catalyst for harmful (or even positive) outcomes.

Alongside media scholars, much of the debate on negative video game influences, particularly regarding aggression and violence, has been fueled by research from psychology and even social psychology specifically. In such cases, research findings from laboratory tests of mild aggression (e.g. delivering annoying bursts of white noise, or putting someone's hand in a bucket of ice water) have been extended to criminal violence or compared to medical public health concerns (see Markey, Males, French & Markey, 2015a, for discussion). Although most psychologists do not study

criminological issues directly, they may tend to carry a set of assumptions about the influence of modeling in human behavior that may cause them to endorse the notion that automatic modeling from media (whether of positive or negative behaviors) may occur more readily than other fields may believe. Particularly given that modeling/social learning theory is itself a core product of psychology, psychologists may be particularly keen to apply this theory to video game influences and even extend this into criminological issues.

Perhaps surprisingly, much of the debate on video game violence influences has progressed without consideration of criminological analyses, even when criminological outcomes are considered (although see Markey, Markey & French, 2015b). This is not to say that criminologists have been inactive in considering media violence effects. For instance, criminologists have meta-analyzed links between media violence and serious physically aggressive behavior (Savage & Yancey, 2008). Other scholars have examined whether genetics could explain links between television viewing and adult crime (Schwartz & Beaver, 2016) or whether video games could influence copycat criminal behavior (Surette & Maze, 2015). However, sound criminological input has often been lacking from much of this debate.

One possibility is that criminologists are less invested in the video game violence issue than are psychologists. Although speculative, this may be because media effects theory is largely a product of social psychology, whereas criminology is concerned with other matters. Criminologists may also be less inclined to consider the minor acts of aggression studied in social psychology laboratories as analogous to serious acts of violence in the real world. Criminologists are also accustomed to multivariate analyses of risk factors with an interest in studying which factors have the greatest impact on crime and may have less interest in factors they perceive as having a minor or negligible influence on crime. As such, criminologists may be less inclined to "buy" the argument raised by some social psychologists (e.g. Anderson, 2011; Saleem & Anderson, 2012) that video game influences on relevant behaviors are similar or greater in magnitude compared to abusive parenting or poverty, having spent more time directly studying the influence of these issues among actual offender populations.

Taken together, it may be possible that concerns about media may be discipline specific. This has not yet, to our knowledge, been tested empirically.

The current study

Previous research has indicated that scholars often differ regarding their attitudes toward video games. However, little information is available about why these scholarly opinions differ. Nor is much information available about the degree to which concerns about games may differ between disciplines. The current project seeks to address these issues using a sample of criminologists, psychologists, and media scholars. The basic design of this study was based on that of Ferguson (2015b), albeit with a different sample and several different research questions.

Several hypotheses were tested. Based on prior research or gaps in the same, it was hypothesized that:

H1: Older scholars would hold more negative attitudes about video games than younger scholars.

H2: Scholars who held more negative attitudes toward youth would also hold more negative attitudes toward video games.

H3: Sanctimoniousness would be predictive of negative attitudes toward video games.

H4: Once prior experience with video games is controlled, age will no longer predict negative attitudes toward video games.

H5: Criminologists, being more experienced with crime data, would hold more skeptical attitudes regarding links between violent games and youth assaults specifically (as opposed to general negative attitudes toward games) than other scholars.

Methods

Participants

Participants in this study were 175 criminologists, psychologists, media scholars, and a small number of scholars who did not identify with any of those three categories (i.e. pediatric or psychiatric researchers, etc.). The mean age of the sample was 39.81 ($SD = 12.73$).[1] Regarding gender, 59.4% were male, with the majority of the sample identifying as Caucasian (90.6%). Regarding discipline, 26.9% identified as criminologists, 39.4% identified as communication/media scholars and 23.4% identified as psychologists, with the remainder as "other" scholars. Overall, the sample did not spend significant weekly time with video games. Mean time spent gaming per week was 3.63 hours ($SD = 0.44$), with the mode reply, 0 hours ($n = 80$; 45.7%).

Materials

All instruments described below used a 5-item Likert scale and demonstrated adequate psychometric properties unless otherwise discussed. All items were embedded in a larger survey which contained 22 distractor items, as well as two checks for unreliable reporting. One was "Please mark this item as 4," and the other "Great white sharks make excellent family pets (answer truthfully not humorously)." Based on responses to these checks, 22 respondents were removed from a dataset of 196, leaving a sample of 175.

Negative attitudes towards videogames

Eight scale items were adapted from the Quandt et al. (2015) study (e.g. "The addiction effect of video games on kids and teens are a problem for society"). The items chosen covered mental health as well as aggressive behavior (e.g. "Using video games in health interventions has potential"). Coefficient alpha was 0.75 for this measure.

Negative attitudes towards youth
A 4-item scale was used from Ferguson (2015b), but one item was removed due to poor reliability with the other three items ("kids and teens today are more narcissistic than they were in previous generations"). The aim was to measure perceptions of worsening qualities in youth. Coefficient alpha for this measure was 0.77.

Sanctimonious self-deception
This refers to self-perceptions of higher morality than others. The measure used was the 20 item "impression management" scale from the Balanced Inventory for Desirable Responding (BIDR; Paulhus, 1991). An example question is "I always obey laws even if I am unlikely to get caught." Coefficient alpha was 0.77 for this measure.

Demographics
Participants were also asked about their age, gender, ethnicity, discipline (criminology, psychology, etc.), and hours spent video gaming in a typical week over the previous 6 months. This final variable demonstrated significant skew given a high frequency (45.7%) of scholars who reported no video game exposure at all in a typical week. OLS regression is generally robust to non-normal variables (Wilcox, 2012), nonetheless, the analyses involving this variable were run both with and without square-root transformation to correct the skew.

Procedure
Surveys were put online through SNAP software. Participants were recruited from a variety of sources to attempt maximum representativeness. This included listserves for scholars including through APA listserves as well as social media pages for psychologists, media scholars, and criminologists. This resulted in a high number of psychologist and media scholar respondents. Criminologists (including criminal justice scholars) were further sampled through the PsycINFO data base using the subject search term (crime OR crimin*). The corresponding authors of the first 200 studies so identified were solicited via email. Forty-seven criminologists responded giving a 23.5% response rate. This response rate appears to be fairly normative for an external sampling approach, particularly without compensation (Kaplowitz, Hadlock, & Levine, 2004). Given that direct recruiting was not used for media scholars or psychologists, response rate is not known for these groups. The resultant sample is, of course, nonrandom. No compensation was offered for participation.

Despite the nonrandom nature of the sampling procedure, the resultant sample generally resembled the professional populations from which they were drawn on key demographics. First, the overall gender and age demographics were similar to those of a previous sample of media scholars (Quandt et al., 2015, *M* age = 36.05; males = 64%). Our sample of criminologists closely matched published membership data for the Academy of Criminal Justice Scientists (2015; *M* age = 40.28 vs. 47.13) although male gender was higher in our sample (male gender = 74.5 vs. 61.2% for ACJS members with academic appointments. However, proportion of male ACJS

members with tenured positions was 69.5% similar to our sample). Data on gender among media scholars were similar for our sample as for the membership of the International Communication Association (personal communication with Julie Randolph, October 2016, 50.7% male vs. 48.2%). However, the ICA did not track age data. Data for psychologists were similar for male gender as for full members of the Association for Psychological Science (2016; 61.0 vs. 54.2% of APS members who reported their gender), as clear demographic information for APA membership was not available to the authors at the time of this writing. Age information was not available from the Association for Psychological Science. Thus, though certainly few samples are perfect, what data are available suggest that our sample generally resembled the populations from which they were drawn in regards to demographics.

Data were analyzed using SPSS software. Hierarchical regression with stepwise analyses was used to assess age, gender, video game experience, attitudes toward youth, and sanctimoniousness influences on attitudes toward video games. All variables other than video game experience were added on the first step, with video game experience added on the second step to assess whether this variable would account for any age effect. Pairwise deletion was used for all regressions.

Results

H1, H2, H3, H4

The first four study hypotheses, namely involving the impact of age, negative attitudes toward youth, sanctimoniousness, and video game experience influences on video games were examined using hierarchical stepwise regression. A bivariate correlations table of age, gender video game experience, and negative attitudes toward video games is presented in Table 1.

An initial model was statistically significant [$R = .365$, adj $R^2 = .128$, $F(1, 170) = 26.21$, $p < .001$]. Multicollinearity diagnostics were negative with highest VIF at 1.121. These results are presented in Table 2. This model included only negative attitudes toward youth ($\beta = .365$) as predictor of negative attitudes toward video games. A second model including age also proved to be significant [$R = .414$, adj $R^2 = .162$, $F(2, 169) = 17.51$, $p < .001$]. This model retained negative attitudes toward youth ($\beta = .353$) but also included age as a significant predictor of negative attitudes

Table 1 Bivariate Relationships Between Age, Gender, Video Game Experience, and Negative Attitudes Toward Video Games

Variable	1	2	3	4
1. Age	1.00	−.047	−.307*	.219*
2. Gender		1.00	−.024	.063
3. Video game experience			1.00	−.436*
4. Negative attitudes toward video games				1.00

*$p < .01$.

Table 2 Prediction of Negative Attitudes Toward Video Games Among Scholars

Variable	Beta	95% Confidence Interval	t-Test	p-Value
Model 1				
Negative attitude toward youth	.365	(.230, .486)	5.12	<.001
Model 2				
Negative attitude toward youth	.353	(.216, .476)	5.02	<.001
Age	.195	(.049, .333)	2.77	=.006
Model 3				
Negative attitude toward youth	.309	(.169, .437)	4.71	<.001
Age	.086		1.26	=.210
Video game experience	−.367	(−.232, −.488)	−5.33	<.001

toward video games ($\beta = .195$). Neither gender nor sanctimoniousness predicted negative attitudes toward video games in these models, nor the third. These results support H1 and H2, but not H3.

In the third model, exposure to video games was added to the equations on a second hierarchical step. This was done to test the possibility that experience with video games rather than age per se may be the defining characteristic regarding negative attitudes toward video games. The resultant model was statistically significant [$R = .540$, adj $R^2 = .279$, $F(3, 168) = 23.05$, $p < .001$]. Both video game experience ($\beta = -.367$) and negative attitudes toward youth ($\beta = .309$) predicted negative attitudes toward video games. Neither gender nor sanctimoniousness predicted negative attitudes toward video games nor, with video game experience in the equation, did age ($\beta = .086$). This suggests that video game experience, rather than age, is the most crucial variable of the two, in regards to negative attitudes toward video games. When the results were rerun using the square-root transformation to correct the skew in the experience variable, results did not significantly change, although the experience variable did increase in magnitude ($\beta = -.486$). These results support H4.

H5

The final hypothesis related to different scholars' opinions about whether violent video games contribute to youth assaults in the real world, examining the specific response to this item. Current results reflected general skepticism on this topic, with only 15.3% of scholars agreeing or strongly agreeing with the potential for links and 70.1% disagree or strongly disagreeing. However, a one-way ANOVA was used to examine whether criminologists were more skeptical than psychologists or media scholars about links between video games and youth assaults.

Results were significant [$F(2, 154) = 3.919$, $p = .022$, $r = .158$, 95% CI = .010, .299]. Both criminologists ($M = 1.979$, $SD = 0.944$) and media scholars ($M = 1.971$, $SD = 1.248$) were more skeptical of violent video game effects than were psychologists ($M = 2.561$, $SD = 1.205$). Bonferroni post hoc tests indicated that psychological scholars significantly differed from media scholars ($p = .031$) and criminologists

($p = .058$) just above the threshold for significance on attitudes toward video game violence, but media scholars and criminologists did not differ ($p = 1.00$). Thus, H5 was partially supported.

Follow-up exploratory analyses: Profession and video game experience

Planned analyses demonstrated relationships between both profession as well as video game experience and negative attitudes toward youth in predicting negative attitudes toward video games. One question that arises is whether these are separate processes or somehow related. For instance, media scholars may hold more positive attitudes toward video games for disciplinary reasons, or may simply play more video games than do psychologists. With this in mind, we conducted further, exploratory analyses. To do so, we created dummy codes for each of the professions, media scholars, criminologists, and psychologists.

First, we examined whether particular disciplines were associated with more negative attitudes toward youth. Bivariate analyses revealed no effect for media scholars ($r = .06$, $p = .425$), or criminologists ($r = -.122$, $p = .109$). Results for psychologists just missed the threshold for significance ($r = .148$, $p = .051$). All effect sizes were very small, suggesting minimal disciplinary relationship with negative attitudes toward youth. Thus, processes related to discipline and attitudes toward youth will be considered largely distinct.

Related to the matter of experience with video games, however, a clear relationship emerged between media scholars and greater experience playing video games ($r = .374$, $p < .001$). By contrast criminologists played fewer video games ($r = -.250$, $p = .001$). Results for psychologists were nonsignificant ($r = -.136$, $p = .072$). Thus, disciplines do clearly differ in relation to their exposure to video games. For media scholars, greater exposure may not be unexpected. However, these correlations did not line up with attitudes toward video games, which were worst for psychologists, not criminologists. This suggests that disciplinary differences cannot be ascribed wholly to exposure to games, particularly for differences between psychologists and criminologists. Experience with video games was not related to negative attitudes toward youth ($r = -.139$, $p = .067$).

Examining this further, we reran the hierarchical stepwise regression, removing the nonsignificant sanctimonious variable and adding the profession dummy code variables on the second step and hours spent gaming on the third. As before, negative attitudes toward youth ($\beta = .355$, $p < .001$) and hours gaming ($\beta = -.220$, $p = .001$) were predictive of negative attitudes toward video games. Of the professions, only media scholars ($\beta = -.394$, $p < .001$) were predictive of attitudes toward video games. The overall model was significant [$R = .650$, adj $R^2 = .409$, $F(4, 168) = 30.77$, $p < .001$].

Reanalyzing this regression with video games and youth assaults specifically as outcome, results indicated that only male gender ($\beta = -.180$, $p = .016$), and psychology profession ($\beta = .165$, $p = .028$). The overall model was significant [$R = .292$, adj $R^2 = .069$, $F(3, 168) = 5.23$, $p = .002$].

Discussion

Debate continues among academics regarding the potential negative impact of video games on youth, including in realms such as violence (Bean & Groth-Marnat, 2016), addictions (Griffiths et al., in press), as well as positive effects such as educational benefits (Annetta, 2010). Thus, it may be helpful to understand why scholars may look at similar groups of data and come to very different conclusions. This study sought to address this issue with a sample of 175 scholars, most of whom were criminologists, psychologists, and media scholars. It is worth noting that our sample was not a gaming sample with almost half the participants (45.7%) reporting no video game playing experience at all.

In relation to the study hypotheses that age (H1), negative attitudes toward youth (H2), and sanctimoniousness (H3), results supported the first two hypotheses, but not the third. Scholars who are older and who hold more negative attitudes toward youth are also more likely to endorse negative views toward video games. This is consistent with previous work with both clinicians (Ferguson, 2015b) and the general public (Przybylski, 2014). The relationship between age and negative attitudes toward video games is not surprising, as this is consistent with the expectations of MPT and previous generational struggles over media. The correlation with negative attitudes toward youth themselves is interesting, however, suggesting that fears of new media may relate to broader fears about youth and the loss of control over popular culture perceived by some older adults. This observation is consistent with the concept of juvenoia (Finkelhor, 2010) or the fear of youth by some older adults. Finkelhor has proposed the concept of juvenoia as one aspect that drives technopanic or extreme alarmist responses to and claims about new media.

The null result for sanctimoniousness perpetuates continued difficulty identifying personality variables that may influence attitudes toward video games. It's possible that negative attitudes toward video games may have little to do with intrapersonal qualities and may simply be generational or a product of generational struggles. Of course, it may simply be that intrapersonal variables that predict attitudes toward new media haven't been identified yet.

Given that age is a predictor of negative attitudes toward video games, it is possible that negative attitudes toward video games may have less to do with age per se, and more to do with experience gaming. Some prior research (e.g. Ivory & Kalyanaraman, 2009) has indicated that people tend to be more afraid of video games in the abstract, with fewer concerns once exposed to games. Thus H4 tested whether experience gaming was more crucial than age in predicting attitudes toward video games. Indeed, results indicated that this is the case. It may be that fears of video games thrive on unfamiliarity. To the extent that older adults' knowledge of video games is limited to short but alarming news clips, older adults may not be fully informed of the video game experience. It's worth noting that our study only considered scholars' current gaming experience. It's possible some scholars may have had past gaming experience or children who game and these exposures may also influence attitudes.

Results also indicate disciplinary differences in scholars' perceptions of the video game violence debate (H5). Overall, scholars were skeptical that violent video games contribute to youth assaults with only 15.3% endorsing such views and 70.1% opposed. Nonetheless, results indicated that psychologists were more inclined to endorse direct links than were either criminologists or media and communication scholars. One reason for this may be that media effects theories are largely a product of social psychology and psychologists may be more familiar with and supportive of such beliefs than other scholars. Further, psychologists' main advocacy organization, the APA, has promoted negative beliefs about violent video games, often to considerable controversy.

Overall results indicate that scholars disagree widely regarding video game influences and that scholars do not appear to be immune to the types of generational and experience effects that influence opinions in the general public. These observations offer cautions that scholarly pronouncements on video games may often reflect generational biases rather than careful and consistent reflections of good data. With this in mind, it may be unwise for professional advocacy organizations such as the APA to take strong stances one way or another on media effects as beliefs in such effects may prove to be ephemeral and emotional rather than objective.

These results suggest that the pattern of age and experience related opinions about new media, often tied toward hostility to youth themselves, are in keeping with those expected by MPT (Gauntlett, 2005). Scholars appear to be no more immune to these patterns than are members of the general public. This is important to examine further to the degree that scholars may be called upon to provide "studies" specifically designed to support a pre-existing moral panic. This phenomenon was on vivid display following the 2012 Sandy Hook shooting when politicians such as Senator Jay Rockefeller called for "studies" of violent video games while specifying that such studies would be used to promote antigame regulation (Boleik, 2012), although it turned out the shooter, Adam Lanza, was more interested in nonviolent games such as *Dance, Dance Revolution* than violence (see State's Attorney for the Judicial District of Danbury, 2013).

There are numerous possible causal chains that might explain links between discipline, negative attitudes toward youth, video game experience, and negative attitudes toward video games. Given that current data are correlational, no causal attributions can be made. However, we did conduct exploratory analyses to consider links between predictor variables. Analyses suggest that links between negative attitudes toward youth and negative attitudes toward video games operated independently of factors related to discipline and video game experience. By contrast, media scholars did tend to have more video game experience compared to other professions. However, this appears unsatisfactory in explaining concerns about youth assaults given that criminologists were not avid game players, yet remained skeptical regarding links between video games and youth assaults. By contrast, psychologists were clearly more inclined to link video games to youth assaults.

These disciplinary differences may be related to ways in which each of these disciplines approaches the issue of both video games and youth aggression. It is possible that media scholars may innately hold more positive attitudes toward media and media influences overall, both consuming more media and viewing media influences more optimistically than other disciplines. In some respects, the difference between criminologist and psychologists is more intriguing as this cannot be explained as due to experience with games that may be defensive in nature. Part of the issue may be that beliefs in harmful video game beliefs are themselves a product of psychological theory, which can focus on automatic modeling of even relatively trivial stimuli. By contrast, although criminologists do sometimes concern themselves with media (e.g. Savage, 2004; Schwartz & Beaver, 2016) they often view media as being too distal, as compared to family violence, poverty, or even genetics, to influence assaultive behavior. Although there certainly are experimental criminologists, criminologists have not been actively involved in laboratory experiments of aggression, and may be more skeptical than psychologists regarding the applicability of these experiments to real life aggression and assaults. Thus, disciplines may differ in how they perceive the power of media, the readiness and innateness of modeling behavior, and the generalizability of minor aggressive acts typically studied in laboratory experiments to serious acts of violence in the real world.

Limitations and concluding thoughts
As with all studies, this study has limitations. Being correlational, causal inferences cannot be made. Further, the sample is nonrandom, reducing generalizability to the scholarly community at large. Although our sample appeared to generally resemble the populations of scholars from which they were drawn in regards to demographics, it is possible that our sampling procedures introduced some unknown biases. For instance, given our survey was online, it's possible that we may have under-sampled older scholars, although a descriptive examination of age indicated no skew. Further, it may have been useful to consider other groups of scholars such as pediatricians. One past study (Bushman et al., 2015a) did examine pediatricians; however, this sample was limited to a very small and selected group of pediatricians who have been active in shaping media policy for the American Academy of Pediatrics, another professional advocacy group with controversial statements on media effects. Thus, this group of pediatricians is not representative of pediatricians in general and might have been expected to harbor particularly antimedia views. Further studies with other groups of scholars would be welcome, as would consideration of how wording differences may influence survey results. As one consideration, our analysis did not consider differences between countries. Given that moral panics can often be culturally specific, further studies may wish to engage in a cross-national comparison of attitudes. Lastly, our study focused on video games or, in relation to youth violence, violent video games as whole, abstract constructs. It could be interesting for further research to examine scholarly reactions to specific genres such as shooter games or massively multiplayer online games that have been particularly

stereotyped as being associated with negative outcomes such as aggression and addiction.

Scholarly consensus on media effects continues to prove difficult to achieve. If the results of Murray (1984) are accurate, then data seem to suggest that scholarly attitudes toward media effects, at least related to aggression and violence, have become significantly more skeptical over the past 30 years. Exactly why this is remains unclear, although given that the past 40 years of media violence research have been marked by often dramatic claims of harm, claims that have seldom materialized (Savage, 2004), current scholarly skepticism may reflect an inevitable course adjustment. Understanding how and why scholarly opinions change over time can be very valuable in understanding the sociology of media effects beliefs in the scholarly community and how these influence the general public and public policy.

Note

1 Due to chance, the mean age of this sample is similar to that of Ferguson (2015). However, the two samples are independent. The age variable was rechecked and verified.

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