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ORIGINAL ARTICLE

Exploring Third-Person Differences Between Gamers and Nongamers

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Numerous studies have demonstrated the third-person perception, but many aspects of its origin and consequences remain unaddressed. In this study, we examine how potential positive and negative video game effects are perceived differently based on the extent to which respondents actually play video games. Although video games exhibit clear third-person perceptions and subsequent support for censorship, these patterns are greatly diminished for heavy players.

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During the same period in which video games have grown into a staggeringly popular activity with total 2007 U.S. sales in excess of $18 billion (NPD Group, 2008), controversy continues to surround them. Pundits grab headlines with complaints about game content—even when they have never played or seen the title (Schiesel, 2008). Self-designated experts seize every opportunity to blame video games for social ills (Hartlaub, 2007). And legislators have proposed several regulatory "solutions" to this perceived threat (Schiesel, 2005). By no means are the concerns about video game effects groundless (Anderson, 2004; Anderson & Bushman, 2001; Sherry, 2001). Nonetheless, the widespread concern about negative effects juxtaposed with the immense popularity of video games underscores the significance of understanding the nature of public support for potential policies to limit exposure to such games. Third-person perception research provides a theoretical framework for understanding differences in perceptions of video game effects as well as understanding what drives support for content restrictions.

In this study, we focus on the extent to which college students—a growing market for game makers (Davenport, 2003)—experience third-person perceptions regarding positive and negative effects of playing video games. In addition, we consider the behavioral hypothesis, which predicts that gaps in perceived effects

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correlate with support for content restrictions (e.g., Rojas, Shah, & Faber, 1996). Finally, we examine whether these effects vary according to game playing frequency, which allows us to advance existing theories regarding the third-person perception and its consequences.

Third-person perceptions

Following Davison's (1983) identification of the third-person perception, subsequent studies have validated the tendency of individuals to perceive other people as being more affected by media messages (Paul, Salwen, & Dupagne, 2000; Perloff, 1993). This perception persists across a variety of media and effect types. However, it is generally limited to negative media effects. For positive media effects, studies show either that there is no self–other difference in perceived effects or a so-called first-person effect in which effects on self are perceived as being greater (Chia, Lu, & McLeod, 2004; Eveland & McLeod, 1999; Neuwirth & Frederick, 2002; Neuwirth, Frederick, & Mayo, 2002).

Although the perceptual gap is a robust finding, explanations for it vary. One line of research suggests that individuals see others as more affected because of a self-serving perceptual bias. According to this line of reasoning, individuals prefer to see themselves as resilient to negative influences while considering others weak, thus providing ego-enhancement (Gunther & Mundy, 1993). Indeed, Meirick (2005a) demonstrates that those with greater need for self-enhancement show a stronger third-person perception. Extending this reasoning, scholars have offered up the social-distance corollary, which suggests that individuals will see increasingly dissimilar others as increasingly vulnerable to the negative influences of media (Cohen, Mutz, Price, & Gunther, 1988; McLeod, Eveland, & Nathanson, 1997). For example, Meirick (2005b) found that individuals perceived stronger effects of undesirable political messages (i.e., material from the "other side") on outgroup members than either self or ingroup members, but other tests of the effects of self–other distance were less clear. Exploring the potentially related phenomenon of the hostile media perception, Duck, Hogg, and Terry (1995) find something quite similar in an Australian context, with individuals expecting those in the outgroup (the other party) to be influenced by messages for the other side but ingroup members to be resistant.

Unfortunately, self-enhancement does not fully explain existing empirical findings. Multiple studies have found that more socially distant others are not always seen as more affected. For example, Eveland, Nathanson, Detenber, and McLeod (1999) found that youth, although closer in age and nature to college students, were seen as more vulnerable than adults to the harms of socially undesirable messages in music. The authors suggest that perceived exposure or vulnerability may better explain this perceptual gap. Peiser and Peter (2000) went a step further, arguing that certain measures of social distance might actually help explain perceived exposure, finding that individuals perceived those with little education to be more likely to engage in "undesirable" television viewing.

At present, the theoretical work that comes closest to integrating both similarity and exposure or vulnerability uses self-categorization theory to predict both first- and third-person effects (Reid, Byrne, Brundidge, Shoham, & Marlow, 2007; Reid & Hogg, 2005). These authors argue that third-person effects can be predicted "as a function of (a) the frame of reference in which a judgment is made, (b) the prototypicality of group members, (c) the target of social comparison (ingroup vs. outgroup), and (d) the basis on which self and others are being compared (i.e., the normative fit of media)" (Reid & Hogg, 2005, pp. 132–133). That is, individuals evaluate groups in context (rather than holding fixed views about whether they are influenced by media), respond more strongly when typical of their group, react differently when evaluating groups dissimilar to their own, and make judgments about how well content "fits" a group.

Content fit is particularly important. The normative fit of media reflects a perception that use of media by a particular group is widespread and socially sanctioned. If comparing oneself to a salient dissimilar group for whom negative content is seen as normative, third-person perceptions should be higher. When content is nonnormative for a comparison group and normative for the respondent's ingroup, a first-person perception is predicted. In addition, the theory suggests that the size of effects will diminish as individuals see themselves as more similar to the comparison group, provided the content is normative for that group. For example, a "typical" college student would see smaller differences between the effects of games on self and other students compared with an atypical student.

Thus, this research provides a theoretical model that integrates aspects of both the self-serving bias and work evaluating exposure. This model is particularly valuable in a context where we might expect social distance and exposure to be at odds. Specifically, it allows for predictions about when perceived comparison group similarity would be important (and even modified) and when other factors (especially exposure) would matter more. Beyond integrating these perspectives, however, it is not entirely clear that existing research demonstrates a unique influence on judgments beyond beliefs about distance and exposure. For example, Reid and Hogg (2005) present evidence that the normative fit can be shifted as new comparison groups are introduced. Essentially, this research provides evidence that normative-fit judgments about a given group are constructed relative to the presence of other comparison groups. Ultimately, however, those judgments may still hinge on perceptions about the exposure of each group to content. By changing the comparison groups, the authors may be making certain traits more salient, leading to different conclusions about exposure. Ultimately, this result may be parallel to the findings of Eveland et al. (1999), which provided a complete list of comparison groups that likely made the "urban youth" appeal of the music salient and thus may have cued assumptions about which groups were most likely to consume the content.

In theory, normative fit should encompass more than a proxy for simple exposure, but conclusive evidence on this point remains fleeting. One possibility is that normative fit may reflect not only beliefs about exposure but also vulnerability,

a sense that individuals in a particular group are more prone to respond to particular types of media given constant levels of exposure, but this idea appears to be untested. Thus, research on normative fit is offered here primarily as a means of synthesizing two key threads in third-person research. Researchers in this area make it clear that normative fit ought to encompass some kind of judgment about *how* people use and respond to media, not just whether they use it. Thus, in this study, we consider perceived effects on those who are described as consumers of the selected medium, assessing whether self–other similarity alone can account for the remaining perceptual gaps or whether there remains some other, unexplained indicator of normative fit.

Third-person effects

The third-person perception is an interesting observation that takes on greater significance as a result of some of its potential consequences. In particular, several studies have provided evidence that large third-person perceptions are associated with greater support for censorship and other content restrictions (e.g., Gunther, 1995; McLeod, Detenber, & Eveland, 2001; Rojas et al., 1996; Shah, Faber, & Youn, 1999). That is, when people see the effects of a particular type of content as being much larger on others than on themselves, they are more likely to endorse content restrictions. However, support for this hypothesis is not universal, and both the size and nature of effects have varied (Lo & Wei, 2002).

The theoretical framework explaining the third-person perception's behavioral consequences is somewhat inadequate. Most often, support for censorship is viewed as protective—individuals are willing to censor what they see as harmful content because they want to protect vulnerable others (McLeod et al., 2001; Rojas et al., 1996; Shah et al., 1999). This idea has been fleshed out in a handful of ways. Shah et al. (1999) explored the extent to which both the severity of content's ill effects and the susceptibility of others to those effects drive support for censorship, with severity being a stronger predictor. Several scholars have followed the reasoning put forth by McLeod et al. (1997), arguing that paternalism—a desire to protect the "weak" from their own vulnerabilities—underlies both perceived harms and support for censorship (e.g., Chia et al., 2004; McLeod et al., 2001; Salwen, 1998).

There are several limitations in these explanations of support for censorship and empirical support has been inconsistent. In addition, a prominent explanation—a paternalistic desire to protect others from themselves—is not specific to the third-person perception. Instead, the driving force in that explanation is the size of perceived effects on others. Indeed, in some of these studies, the effects of media on others are considered without any attention to the self–other gap (e.g., Chia et al., 2004; McLeod et al., 2001). Although it may be that paternalistic individuals tend to have such a high opinion of themselves that the self–other gap would be large, this research seems more focused on the effects of negative opinions about media, rather than the third-person perception per se. Furthermore, even if paternalism is

linked to an actual perceptual gap, it appears likely that paternalistic individuals are more prone to a third-person perception—paternalism is an antecedent variable, not a mediator.

Clearly, then, it is important to evaluate the actual self–other gap, but even when this is done in isolation, vital insights may be missed. In particular, such a model would not capture the effects of believing that media have a strong effect on all individuals, including oneself (Lo & Wei, 2002; Neuwirth & Frederick, 2002). A small perceptual gap would result when individuals perceived effects as being generally small and equivalent *or* generally large and equivalent. This potentially confounds two distinct situations. More important, a general perception of large effects might inflate the perceptual gap simply because subtractive measures tend to become larger as the individual variables used to calculate them grow (Whitt, 1983). Thus, even when looking at how the perceptual gap predicts support for censorship or other outcomes, studies may confound broader beliefs about the power of media with specific third-person perceptions.

To address these issues, several studies have used a variation of the so-called diamond model (McLeod et al., 1997; Neuwirth & Frederick, 2002; Schmierbach, Boyle, & McLeod, 2008), which draws on work by Whitt (1983). In this model, an additional term that sums the perceived effects on self and others is included. Neuwirth and colleagues (Neuwirth & Frederick, 2002; Neuwirth, Frederick, & Mayo, 2002) refer to this as capturing the ''second-person'' effect. We prefer to simply refer to it as a measure of the perceived aggregate or combined influence, because—unlike first- or third-person perceptions—this measure does not capture a perceptual gap. The added term controls for the effects of general perceptions of strong media effects. Studies by Neuwirth and colleagues offer evidence that this combined influence is often the stronger predictor of support for censorship. In general, this research supports the paternalistic explanation, with broader concerns about the powerful effects of media mattering more than the actual perceptual gap.

Video games and the third-person effect

Video games provide a logical context for third-person research. Although video gaming is widespread, video games are still frequently stigmatized and targeted for restrictions. Debate continues to rage about the consequences of game playing. Thus, it is reasonable to expect considerable variance in perceived video game effects. Prior research confirms the presence of a third-person perception in judgments about games. Children (Scharrer & Leone, 2006, 2008) and college students (Boyle, McLeod, & Rojas, 2008) both perceive stronger effects of games on others than themselves. Perceived differences varied by comparison group, in a manner consistent with prior research. In particular, Scharrer and Leone (2006, 2008) found that children perceived larger effects as both social distance and particularly age differences grew (i.e., younger children and children at other schools were seen as more affected than same-age peers). Ivory and Kalyanaraman (2009) also found that college students

rated more abstract individuals as more affected by games, which may reflect perceptions of distance or some other mechanism. However, their study did not evaluate the perceptual gap that is central to third-person research.

Given that the evidence suggesting video games are fairly typical with regard to the third-person perception, we expect to find a third-person perception when individuals compare the negative effects of video games on themselves to those for whom game playing would appear normative. In general, popular culture tends to depict children and, increasingly, college students as the primary players of games. Hence, we propose the following hypothesis:

H1: College students will perceive greater negative effects of games on children and other college students than on themselves.

In addition, we expect that this perceived gap will vary depending on the comparison group. As noted, children and college students are most often mentioned as the primary players of games, and children in particular are most often the focus of discussions about the harmful effects of games. Most legislation limiting access to games has prevented those under 18 from purchasing violent or mature titles and among nonplayers at least the stigma of games as ''child's play'' is likely to continue. Thus, although play would be somewhat normative for both groups, we would expect the perceived effects on children would be stronger, as play is likely seen as more normative for them. In addition, prior research shows that individuals tend to see greater effects on those who are dissimilar, all else being equal. In this study, we focus on a population of college students; thus, children are more dissimilar from our study participants than college students. This leads to the following hypothesis:

H2: The third-person perception regarding negative effects of games will be larger for comparisons to children than to college students.

Things may be different when college students compare themselves to adults over 40. For these individuals, while the similarity to students is small, the normative fit for game playing also is small. Although some older adults do play games, little mainstream media coverage focuses on these individuals and that coverage rarely (if ever) touches on any possible harms of playing. Thus, we predict the following hypothesis:

H3: College students will perceive themselves as more negatively affected by games compared with adults over 40.

Video games offer a valuable path to understand the third-person process for another reason. Unlike many media, games are not universally played, even among college students. Thus, variations in game playing might alter the third-person perception and its effects. Prior research has shown that heavy consumers of a medium do show differences in perceived effects and support for censorship. For example, Hoffner et al. (2001) found that individuals who consumed more violent

television were likely to see larger effects on self. In another study, Hoffner et al. (1999) found that those who regularly viewed violent television were less likely to support censorship. However, focusing on games, Scharrer and Leone (2006) found almost no influence of game playing on perceptual gaps, but they did not consider censorship support or other behavioral outcomes. In a second study, Scharrer and Leone (2008) found that heavier players actually showed greater support for restrictions but did not fully explore the link between play and perceptions. In the face of these mixed findings, we expect that those who identify as nonplayers should see themselves as dissimilar from those they identify as video game players, regardless of age. To the extent that the third-person effect occurs because people see themselves as different from those for whom negative content has a normative fit, we would predict that nonplayers will see even greater effects on children and college students (for whom, as noted above, play should be normative) and potentially will also see smaller effects on themselves. Collectively, this leads to the following prediction:

H4: College students who report low levels of video game playing will exhibit a larger third-person perception than those who report higher levels of video game playing.

Differences in level of play raise another issue as well—the effects of games are not universally negative. Game play has been linked to increased problem-solving ability (Griffiths, 2002), mental rotation ability (Terlecki & Newcombe, 2005), and skill with computers (Subrahmanyam, Kraut, Greenfield, & Gross, 2000), among other beneficial outcomes. If judgments about the effects of games are made purely on expectations about how much individuals play or whether play is normative for a particular group, then a similar gap should occur for positive effects as for negative ones. However, if judgments about effects are partly dependent on some desire to enhance the self, then we would expect differences in the size and even direction of perceptions between positive and negative effects, even among those who do not play games. Although the bulk of the literature suggests that people are more likely to attribute positive effects of the media to themselves, that literature typically assumes equivalent exposure, which is not the case with video games. In addition, that finding is not entirely consistent with or explained by existing theory. Thus, in this study, we explore two parallel research questions:

RQ1: How do perceptions of positive effects of games differ from those for negative effects?

RQ2: What influence does level of game playing has on judgments about the positive effects of playing games?

As noted, video games are an interesting topic because of the frequent calls for regulation and censorship. Of the studies considering game play, one (Scharrer & Leone, 2006) did not explore the behavioral hypothesis. Boyle et al. (2008) found that the perceived size of game effects, but not the self–other gap, predicted support for censorship. This same result emerged in the 2008 study by Scharrer and Leone,

which focused specifically on negative effects of games and parental restrictions. Nonetheless, the fairly consistent findings from prior research in other areas suggest a link between the perceptual gap and support for restrictions and censorship, as expressed in the following hypothesis:

H5: The size of the third-person perception regarding negative effects of games will be positively related to support for restrictive policies regarding games.

However, the effects of a third-person perception about positive content are unclear. On one hand, if the driving force behind support for censorship is the perceived harm done to others, we might expect a large third-person perception for positive effects would actually decrease support for censorship. On the other hand, if the issue is a concern about how much weaker or more easily swayed others are, then even for positive effects, a third-person perception might prompt support for restrictions. Thus, we consider the following research question:

RQ3: What is the relationship between a third-person (or first-person) perception regarding positive effects of games and support for restrictive policies?

In addition, we explore whether individual levels of game playing will moderate the relationship between third-person perceptions—positive and negative—and support for censorship. After all, individuals who are regular game players may find it harder to support censorship regardless of the size of the third-person perception for negative effects and easier to oppose it if they expect strong positive effects on others. But the existing literature offers too little evidence on the influence of media exposure to form a definitive hypothesis, leading to the following research question:

RQ4: Does level of game play moderate the relationship between perceptions of game effects (positive and negative) and support for restrictive policies?

Method

Participants

Six hundred and ninety-two students (471 females, 218 males, and 3 who did not identify gender) were recruited from a variety of communication classes at West Chester University, Pennsylvania State University, and the University of Wisconsin–Madison. The largest portion—43.6%—were first-year students (who thus had relatively little exposure to media effects research). Students received extra credit for participating in this study.

Measures

After reading an online informed consent page, participants completed an online questionnaire, first indicating their frequency of game playing and their general attitudes toward video games, media, and media's impact on other individuals. To

help students understand the different types of media effects described, a brief article was included describing previous findings—positive and negative—from research into games. The order of the positive and negative descriptions was randomly rotated to help ensure this would not bias participants. After this article, participants responded to a variety of questions about their beliefs about the effects of video games on themselves and several comparison groups as well as their support for restrictions on games.

Effects of video games on self

The effects of video games on self were measured in two ways: the perceived negative effects and the perceived positive effects of games. Individuals were asked a series of questions about the specific effects of games on themselves using an 8-point scale ranging from 0 to 7, with 0 corresponding to *no effect*, 1 to *very small effect*, and 7 to *very large effect*. This same scale was used for all the remaining measures of perceived effects. The measure of perceived positive effects included seven items: Participants indicated how much games were responsible for improving hand–eye coordination, developing problem-solving skills, increasing grades or work performance, aiding mental rotation, learning more about computers, offering connections with others, and providing a social outlet ($M = 2.38$, $SD = 1.69$, Cronbach's $\alpha = .92$). The measure of negative impact included six items: causing anger, causing anxiety, causing thoughts of violence, learning violent behaviors, behaving violently, and acting in an antisocial manner ($M = 1.31$, $SD = 1.41$, $\alpha = .90$).

Effects of video games on others

The effects of games on others were also measured using specific positive and negative effect scales, all of which used the same items as above. However, individuals were asked to evaluate these effects on three specific groups: younger children who play games, college students who play games, and adults over 40 who play games. That is, individuals were asked both the general effects question and the series of individual effects questions in terms of the amount of effects for each of those groups, one at a time. Thus, a total of six scales were calculated: positive effects on children ($M = 3.56$, $SD = 1.26$, $\alpha = .88$), negative effects on children ($M = 3.86$, $SD = 1.45$, $\alpha = .92$), positive effects on other college students ($M = 2.99$, $SD = 1.36$, $\alpha = .88$), negative effects on college students ($M = 2.62$, $SD = 1.46$, $\alpha = .92$), positive effects on adults ($M = 2.28$, $SD = 1.40$, $\alpha = .89$), and negative effects on adults ($M = 1.98$, $SD = 1.53$, $\alpha = .92$). Based on these measures, subtractive and additive scores were calculated for the differences between each comparison group and self as well as the sum of each comparison group with self, for overall, positive and negative effects.

Support for video game regulation

This concept was measured using an index formed from five items on 7-point scales anchored by *strongly disagree* and *strongly agree*. The items included the following statements: "The government should regulate video games"; "Certain violent video

games should be banned''; ''The industry should stop making violent video games''; ''Video game manufacturers should be held accountable for negative effects caused by their games''; and ''The government should censor some video games'' ($M = 3.15$, $SD = 1.50$, $\alpha = .86$).

Control variables

Three measures were used as control variables in analyses of the effects of the third-person perception on support for restrictions. These reflect factors that prior studies have suggested might account for the effect but which describe underling beliefs that would precede both third-person perceptions and support for restrictions. All three used the same 7-point agreement scale used in the support-for-restrictions measure.

Maternalism

Three items were used to form an index for the concept of maternalism: ''I feel upset when others are harmed''; ''I worry about what happens to other people''; and ''It bothers me when people are hurt'' ($M = 5.63$, $SD = 1.10$, $\alpha = .84$).

Paternalism

Four items were used to form the index for paternalism: ''The world would be a better place if more people thought like me''; ''I wish I had more power to get people to act the way I do''; ''I'm smarter than most people''; and ''My beliefs about the world are better than most'' ($M = 4.14$, $SD = 1.04$, $\alpha = .73$).

General media effects

One question was used to assess whether individuals felt that ''in general, most people are easily affected by the media'' ($M = 4.76$, $SD = 1.26$).

Video game playing level

Finally, individuals were asked how frequently they played video games in the past year, with options ranging from did not play to ''played more than 4 times per week'' ($M = 3.41$, $SD = 1.92$). For most analyses, the item was recoded into three levels. Those who reported playing less than once a month were coded as low-level players (45.8%), those playing between one and four times a month as medium-level players (26.5%), and those playing at least once a week as high-level players (27.7%).

Results

In these analyses, we focus on the specific perceptions of positive and negative effects of games by individuals who themselves play different amounts. Using repeated-measures analysis of variance (ANOVA), we first assess whether there is an overall difference in mean scores between the different target groups and whether differences between perceived effects on groups vary by level of play? In these analyses, two caveats are in order. First, these data represent a nonrandom sample of college students. Although consistent with many prior studies of the third-person effect, this

nonetheless clearly violates a core assumption of inferential statistics—we cannot be certain that these findings generalize to the larger population. Indeed, several scholars have argued that student samples may overstate the extent of the third-person perception; Banning (2001) suggests that "the third-person effect may operate much less in the real world than previous experiments indicate" (p. 100). After all, students generally consider themselves well educated and media savvy. A meta-analysis by Paul et al. (2000) showed larger person effects in student and nonrandom samples than those using nonstudent and/or random samples. As such, the statistical tests presented here primarily provide a descriptive indicator of the size of mean differences for this particular sample. Although significance tests are offered, these values by no means offer a firm measure of whether these differences would hold for a larger population. Instead, the tests of significance simply provide a heuristic for evaluating the size of mean differences. Second, because of the large number of comparisons presented here, a small number of significant differences would be likely to occur by chance. The overall tests provided by the ANOVA offer an initial check against this possibility. In addition, when we turn to specific comparisons between individual means, we set the threshold for significant differences at $p < .001$—only those mean scores that are different at this level are described as significant.

We can evaluate two key hypotheses by looking at the results of the repeated-measures ANOVA. First, H1 proposes an overall third-person perception—that is, people will tend to see greater negative effects of media on others than on themselves. The initial statistical analysis shows clear evidence that perceived effects differ between groups ($F_{2.64,1627.19} = 678.90$, $p < .001$).[1] The overall group means, as given in the method section, are all significantly different from one another at the $p < .001$ level. Children are seen as the most affected, followed by college students, adults, and finally the study participants. However, consistent with H4, the interaction of affected group and level of play is also significant ($F_{5.275,1627.19} = 13.32$, $p < .001$). That is, the degree to which perceived effects differ between groups is dependent on how much the individual making the judgments plays video games. In the presence of such an interaction, we focus on comparing means for each subgroup based on level of game play, as presented in Table 1. Further analysis explored the extent to which similar differences emerged for judgments about positive effects of games. There was a significant difference between judgments about the different groups ($F_{2.64,1630.11} = 243.49$, $p < .001$) and a significant interaction between these judgments and the level of play ($F_{5.285,1630.11} = 21.68$, $p < .001$). As shown in Table 1, the pattern is not exactly the same as for negative effects, but once again there is clear evidence that people perceive different positive effects of games for different groups and that this depends in part on how much they play games.

To better understand the patterns shown in the data, we tested the differences in perceived positive and negative effects on the listed groups for each of the three levels of game play (Table 1). These data reveal a number of telling patterns, most of which are consistent with prior research into the third-person perception. For the most part, individuals see the negative effects of games as being stronger on other

Table 1 Mean Score for Perceived Positive/Negative Effects of Video Games on Self and Comparison Groups by Level of Video Game Playing

		Level of Video Game Playing		
		Low	Medium	High
Positive effects				
On self	*M*	1.88_{aA}	2.36_{aA}	3.26_{bA}
	SE	1.63	1.48	1.54
On children	*M*	3.55_{aB}	3.54_{aB}	3.62_{aB}
	SE	1.28	1.14	1.33
On other college students	*M*	2.90_{aC}	2.89_{aC}	3.30_{aA}
	SE	1.35	1.29	1.41
On adults	*M*	2.18_{aA}	2.15_{aA}	2.62_{aC}
	SE	1.36	1.23	1.51
Negative effects				
On self	*M*	1.20_{aA}	1.34_{aA}	1.49_{aA}
	SE	1.46	1.36	1.32
On children	*M*	4.12_{aB}	3.81_{abB}	3.44_{bB}
	SE	1.39	1.36	1.48
On other college students	*M*	2.91_{aC}	2.59_{abC}	2.16_{bC}
	SE	1.51	1.33	1.36
On adults	*M*	2.23_{aD}	1.98_{abD}	1.55_{bA}
	SE	1.59	1.45	1.36

Note: Using Holm's sequential Bonferroni post hoc comparisons, within rows for each effect category, means with no lower case subscript in common differ at $p < .001$. Using paired-sample *t*-test, within columns for each effect category, means with no upper case subscript in common differ at $p < .001$. For low level of video game playing group, $N_1 = 291$. For medium level of video game playing group, $N_2 = 168$. For high level of video game playing group, $N_3 = 176$.

people. For all players, the data are consistent with H1, showing stronger perceived effects on children and other college students than on themselves. Furthermore, these results are consistent with H2, such that significantly stronger effects are perceived for children than other college students. However, the data do not provide support for H3, as adults are still seen as more affected by games than oneself. Only heavy players provide an exception to this, as the effects on self and other are essentially equal.

Furthermore, as noted above, the size of the differences is not consistent across levels of play, helping address RQ1 and RQ2. In general, individuals who play games regularly see smaller negative effects of games on all groups, compared with light players. Interestingly, these heavy players appear somewhat more willing to acknowledge stronger negative effects on self. Although this difference is not significant at the $p < .001$ threshold, it does deviate from the general pattern. Collectively, these differences provide further support for H4—those who play

games less often see a bigger gap between the negative effects on themselves and on others. Perceptions of positive effects are more complex—among those who play games rarely if ever, the effects are still seen as being stronger on others. For those who are heavy players, this gap is greatly diminished, but the sole evidence of a first-person effect is in the comparisons between self and adults. In addition, heavy players tend to see stronger positive effects. In short, then, it seems that heavy game players tended to see games as having a more positive effect on themselves and adults, and a less negative effect on comparison groups, although the latter difference was only significant when compared with nonplayers. As a whole, the third-person perception holds for all but is weaker among heavy players.

The remaining analyses address whether this perceptual gap is linked to support for censorship. We carry out regression analyses evaluating the influence of perceptions regarding negative and positive effects of games on support for restrictions. These tables present two separate regression models. The first explores the simultaneous influence of perceived effects on self and others as two separate variables. The second employs the diamond model, testing the simultaneous effects of the self–other gap as well as the additive influence of self and other together. Once again, this approach also includes two terms relating to perceived effects. One is the traditional subtractive measure (effects on comparison group minus effects on self). The other is an additive score of effects on self plus effects on comparison group. Each model is run for all three of the ''other'' comparison groups, and the data presented account for the three control variables. Because those variables are often offered as an explanation for third-person effects, the test for residual effects is already somewhat conservative, so a conventional significance level of .05 is employed.[2]

We first focus on negative effects, which are examined in Table 2. These data provide clear support for H5. Even when controlling for the cumulative effects on self and other (i.e., testing Model 2), the perceptual gap is a strong predictor of support for censorship for those who are not heavy game players. In addition, the cumulative effects measure also shows a significant relationship to support for censorship. However, Model 1 shows that among low and medium players, perceived effects on self are of minimal importance, at least after controlling for any shared variance of effects on self and on others. That is, people who see games as influencing everyone tend to support censorship, but any unique influence those games have on self is relatively inconsequential.

The data for Model 2 show a distinct pattern for those who are regular game players. Among these individuals, the third-person perception—the subtractive measure—is not a significant predictor of support for censorship, while the additive measure remains significant. For Model 1, the difference in the predictive power of effects on self between high and low players is marginal or significant (in the case of the analysis of effects on children). For Model 2, the self-college coefficient is significantly different between heavy players and both medium and light players, and the self–child and self–adult coefficient is marginally different for low and high players, while the self–adult coefficient is significantly different between medium and

Table 2 Regression Analysis Predicting Restrictions on Video Games With Negative Self, Other, and Third- and Second-Person Effects by Level of Video Game Playing

	Level of Video Game Playing		
	Low	Medium	High
	β	β	β
Model 1: Self and comparison groups as predictors			
Self and children			
Self	$-.03_{AB}$	$.07_{A}$	$.18^{*}_{B}$
Children	$.27^{***}_{A}$	$.37^{***}_{A}$	$.20^{*}_{A}$
Self and other college students			
Self	$-.09_{A}$	$-.06_{AB}$	$.11_{B}$
Other college students	$.39^{***}_{AB}$	$.48^{***}_{A}$	$.24^{*}_{B}$
Self and adult			
Self	$.00_{A}$	$.02_{AB}$	$.21^{*}_{B}$
Adult	$.19^{**}_{AB}$	$.36^{***}_{A}$	$.08_{B}$
Model 2: Third- and second-person effects as predictors			
Children − self and children + self			
Children − self	$.17^{**}_{A}$	$.16^{*}_{AB}$	$-.00_{B}$
Children + self	$.20^{**}_{A}$	$.37^{***}_{B}$	$.33^{***}_{AB}$
College student − self and college + self			
College student − self	$.25^{***}_{A}$	$.26^{***}_{A}$	$.05_{B}$
College + self	$.25^{***}_{A}$	$.38^{***}_{A}$	$.32^{***}_{A}$
Adult − self and adult + self			
Adult − self	$.10_{A}$	$.16^{*}_{A}$	$-.06_{B}$
Adult + self	$.16^{**}_{A}$	$.32^{***}_{B}$	$.25^{**}_{B}$

Note: For low level of video game playing group, $N_1 = 291$. For medium level of video game playing group, $N_2 = 168$. For high level of video game playing group, $N_3 = 176$. Table entries are standardized βs controlling for gender, maternalism, paternalism, and perceived overall media effect for all six regression equations. Coefficients not sharing a subscript represent cases where the computed partial correlation coefficients differ at $p < .1$ (based on an r to z transformation). See the text for further details and more exact p levels.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

high players. For regular players, seeing games as having a strong influence does lead to censorship support, but the gap between self and other appears to be inconsequential. This might be explained in part by the unique connection between perceived effects on self and support for censorship shown for these individuals. Although the effects are somewhat small, a pattern emerges from Model 1, whereby those who say games affect themselves actually support censorship, even when controlling for the effects of games on somewhat dissimilar others.

RQ3 addressed the potential third-person effect of perceived positive effects of games. Here, the data provide quite a different story. As shown in Model 2, for more infrequent players, the perceptual gap is unimportant (Table 3), with no measures

Table 3 Regression Analysis Predicting to Restrictions on Video Games With Positive Self, Other, and Third- and Second-Person Effects by Level of Video Game Playing

	Levels of Video Game Playing		
	Low	Medium	High
	β	β	β
Model 1: Self and comparison groups as predictors			
Self and children			
Self	$.05_{A}$	$-.02_{A}$	$-.14_{A}$
Children	$-.01_{A}$	$.11_{A}$	$.03_{A}$
Self and other college students			
Self	$.07_{A}$	$-.13_{B}$	$-.25^{*}_{B}$
Other college students	$-.04_{A}$	$.25^{*}_{B}$	$.16_{AB}$
Self and adult			
Self	$.01_{A}$	$-.11_{AB}$	$-.22^{*}_{B}$
Adult	$.11_{A}$	$.24^{*}_{A}$	$.16_{A}$
Model 2: Third- and second-person effects as predictors			
Children − self and children + self			
Children − self	$-.03_{A}$	$.08_{A}$	$.06_{A}$
Children + self	$.03_{A}$	$.09_{A}$	$-.09_{A}$
College student − self and college + self			
College student − self	$-.05_{A}$	$.18^{*}_{B}$	$.13_{B}$
College + self	$.03_{AB}$	$.14_{A}$	$-.06_{B}$
Adult − self and adult + self			
Adult − self	$.06_{A}$	$.18^{*}_{A}$	$.16^{*}_{A}$
Adult + self	$.11_{A}$	$.14_{A}$	$-.05_{B}$

Note: For low level of video game playing group, $N_1 = 291$. For medium level of video game playing group, $N_2 = 168$. For high level of video game playing group, $N_3 = 176$. Table entries are standardized βs controlling for gender, maternalism, paternalism, and perceived overall media effect for all six regression equations. Coefficients not sharing a subscript represent cases where the computed partial correlation coefficients differ at $p < .1$ (based on an r to z transformation). See the text for further details and more exact p levels.
$^{*}p < .05$.

emerging as significant predictors (this pattern of relationships differs significantly only in the self-college measure, where the coefficient is significantly different from that for medium players and marginally different from that for heavy players). Medium players show a slightly different pattern, being more willing to support censorship when the gap between self and both college students and adults is larger. This appears to be driven by a greater support for censorship when the effect of games on those groups is large. Heavy players show a somewhat similar pattern in terms of the perceptual gap, but when looking at the effects on self and other separately in Model 1, something interesting emerges. Uniquely, these individuals are significantly less likely to support censorship when they see positive effects of

games on themselves. (The coefficient relating perceived effects on self to support for censorship is significantly different from that of light or nonplayers for the college model and marginally different for the adult model.)

Discussion

This study offers several insights into the third-person effect by examining it in the context of perceived effects of playing video games. First, it verifies the results from a small number of previous studies suggesting that the third-person perception applies to games as well as providing insights into the mechanism behind that finding. The data support both H1 and H2 in that individuals generally see others as more affected by games than themselves, and this gap is particularly large for children and somewhat smaller, although still significant, for college students. However, the data do not generally support H3. Even adults who play games are seen as more affected, at least by those who are not heavy game players. Although this gap is smaller than that for the other comparison groups, it remains significant among light and moderate players. This seems to support research (e.g., Eveland et al., 1999) indicating that perceived exposure is important, as light and medium players saw few effects on themselves.

In general, the third-person perception is larger for those who rarely play games—heavier players acknowledge stronger effects on themselves and estimate lesser effects on others. The former is consistent with an exposure-driven explanation, but the latter suggests that some level of self-enhancement is at work, as proposed in some third-person research (e.g., Gunther & Mundy, 1993). Heavy players are much more willing to say that games have strong effects on themselves but less willing to acknowledge potentially negative effects in general. An adequate theory to explain this pattern would have to integrate both self-enhancement motivations as well as judgments about exposure. Research on self-categorization and normative fit has offered the most integrative model, connecting several forces at play in forming third-person perceptions (Reid et al., 2007; Reid & Hogg, 2005). However, this work has generally suggested that some factor beyond exposure and self-enhancement accounts for the perceived normative fit of content to a group. In this study, we strived to minimize the influence of variations in the perceived exposure of others, while providing an opportunity to see how individual exposure can affect perceptions. Thus, perceived exposure by others does not adequately explain why a seemingly dissimilar group—adults over 40—was seen as less influenced. The adult comparison group was clearly labeled as playing games. Unfortunately, the existing self-categorization literature is somewhat vague about what mechanism people use to judge normative fit. We speculate from the results presented here that perhaps *vulnerability*, rather than exposure, might be the key factor. That is, people may assume that certain groups are affected by media, not simply because they use those media but because their social environment, orientation toward the content, and even personal weaknesses make them more susceptible to that particular type of

influence. However, these results cannot entirely rule out the prospect that exposure may account for the findings. Although told that the ''adults over 40'' were game players, participants may still have assumed that these individuals played less or favored different types of games. Furthermore, the results do not necessarily test the social categorization model to the exclusion of other possible explanations for third-person perceptions. It may be that some combination of existing theories or even an as-yet-unidentified factor wholly explains third-person judgments.

Second, the data provide insight into the role that individual exposure to content can play in moderating the third-person perception and effect, addressing the second and fourth research questions. As suggested above, these findings are important in part because they suggest the extent to which perceptual judgments are self-serving. Clearly, individuals are much more willing to embrace the positive effects and less willing to acknowledge negative effects on themselves. Although the perceptual gap is larger for those who do not play games, it does not completely vanish for heavy players. Some kind of perceptual bias is at work, whether attributable to processing errors or ego-enhancement. In addition, regular exposure to games diminishes the third-person effect, with those who play regularly noticeably less willing to embrace censorship even when they still see a gap between self and other. Although these individuals tend to support restrictions when they think that the overall effects of media are high, it appears that they actually support censorship more if they acknowledge that these adverse effects spread to themselves as well as others. This finding offers interesting insight into prior research comparing the effects of the perceptual gap to those of the ''second-person'' perception (e.g., Neuwirth & Frederick, 2002). It appears that this belief of cumulative effects is a consistent predictor but that the perceptual gap is influential largely for those who are not heavy consumers of a medium. This might explain why some models do not find significant effects for the third-person perception—for media where most respondents are regular users, the perceptual gap may cease to be a strong predictor.

It is worth nothing that these results control for many of the common explanations for third-person effects. Paternalism and maternalism, along with a general belief in the power of media, are all included as control variables. Thus, the remaining effects show that these factors alone are insufficient to explain the influence of third-person perceptions on support for censorship as well as any differences due to level of play. Furthermore, the results provide some of the first evidence that the third-person perception translates into support for censorship in the context of video games. Given that video games are among the most frequently targeted media by politicians and critics for various restrictions, this finding has important practical implications. It underscores the appeal of a political message that plays off the vulnerability of children. Among those who play rarely or never play video games, the perceived harms done to others loom large in deciding how to treat the industry.

Third, the data offer a valuable exploration of how the third-person perception and subsequent effects vary when people consider explicitly positive media effects. This represents a notable departure from studies that use separate media assumed to

be either positive or negative to assess first- and third-person perceptions. Here, the questions explicitly address the positive and negative impacts of the same content. In general, the data suggest that while the perceptual gap for negative content leads to support for censorship, the gap for positive content is not influential. Individuals do not necessarily advocate censorship simply because the content is powerful, but they also do not reduce their support for censorship even though the content has relatively positive effects on others.

Although the points noted above are all important contributions to third-person research, some caveats are in order. First, these data come from college students. Although this is desirable for allowing a clear set of comparison groups, and because college students are among those most likely to play games, this is not a representative sample of college students. Study participants were primarily in communication-related majors, and while analyses found no clear evidence that those who took classes in media effects answered differently, it is still possible these responses are atypical. It may be that communication students are more confident in their ability to avoid adverse effects from media. A more representative sample of all college students would offer greater confidence in the results. Second, these data do not fully test any of the models explaining the third-person perception. Although it is clear that neither self-enhancement nor exposure is sufficient to explain the gaps found here by itself, additional measures would be needed to see if self-categorization or some other model would explain the pattern of findings. Third, the data compare overall levels of game play but not all play may be equivalent. Perhaps those who play the genres of games most often criticized, such as first-person shooters, would respond differently and would see themselves as more distinct from comparison groups, such as adult players who may be seen as more ''casual'' gamers.

Nonetheless, these data provide revealing insights into the third-person phenomenon as it relates to video games. College students generally perceive games to have stronger effects on others than on themselves. This perception was smaller for those individuals who play regularly, and those who see games as having a more positive influence on self. Thus, the data reveal important factors that shape the third-person perception, including media exposure and type of effect. In addition, the data suggest that with the exception of heavy players, the perceptual gap itself is a key predictor of support for censorship, along with the perception of aggregate effects. Given the ongoing controversy over the regulation of video games, understanding who supports such restrictions is potentially important. Those who play games less while perceiving stronger affects on others, especially children, are especially likely to support restrictions. Political attempts to regulate games are likely to appeal to these individuals and to be ineffective among those who are regular players and perceive little overall effect from games. For those who oppose restrictions on media in general or games in particular, this has a further implication: As exposure to games increases, the desire to censor them declines, even if people continue to believe that those games have stronger effects on others. Thus, the growing success of the game industry in penetrating new markets may be its greatest weapon. Rather than creating fear

as ''dangerous'' games become more widespread, games may become untouchable targets as most voters become experienced gamers.

Notes

1 All *F* statistics from the ANOVA reflect the Greenhouse-Geisser adjustment because of nonsphericity.

2 In addition to looking at the individual relationships, we are also concerned with the comparison between coefficients for each level of game playing. There is no simple, standard method for comparing regression coefficients in this manner. As a way of approaching this problem, we calculated the partial correlation coefficients for each tested relationship of interest (controlling for the other variables in the model) and used an *r* to *z* conversion to determine whether those coefficients were significantly different (see Schmierbach, Boyle, & McLeod, 2005). Relationships were described as marginally different at $p < .1$ and those described as significantly different were at $p < .05$.

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