

Social Evaluations of Stereotypic Images in Video Games

Unfair, Legitimate, or “Just Entertainment”?

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The aim of this study is to assess late adolescents' evaluations of and reasoning about gender stereotypes in video games. Female ($n = 46$) and male ($n = 41$) students, predominantly European American, with a mean age 19 years, are interviewed about their knowledge of game usage, awareness and evaluation of stereotypes, beliefs about the influences of games on the players, and authority jurisdiction over three different types of games: games with negative male stereotypes, games with negative female stereotypes, and gender-neutral games. Gender differences are found for how participants evaluated these games. Males are more likely than females to find stereotypes acceptable. Results are discussed in terms of social reasoning, video game playing, and gender differences.

Keywords: *gender stereotypes; moral reasoning; video games*

The influence of media on the development and maintenance of negative stereotypes and on individual social development in general has been widely studied with regard to many media sources, such as television (Ruble & Martin, 1998), but only recently has this work extended to video games (see Anderson & Bushman, 2001; Calvert & Tan, 1994; Dill, Gentile, Richter, & Dill, 2005; Greenfield, 1994). Research on video games

has traditionally focused on the effects of violent video game play on aggressive behavior, addressing the negative aggressive content of the games (Anderson & Bushman, 2001; Bensley & Van Eenwyk, 2001; Carnagey & Anderson, 2004). For example, a number of studies have shown that playing violent video games leads to increases in physiological arousal, aggressive thoughts (Calvert & Tan, 1994), aggressive behaviors (Anderson & Murphy, 2003; Gentile, Lynch, Linder, & Walsh, 2004), and aggressive affect (Bensley & Van Eenwyk, 2001), as well as to decreases in prosocial behaviors and empathy (Anderson & Bushman, 2001; Funk, Buchman, Jenks, & Bechtoldt, 2003). It is interesting that players are often not aware of some of these consequences, such as physiological arousal in response to playing the game and physiological desensitization in response to real-life aggression (see Carnagey & Anderson, 2004; Funk, 2005).

Recently, researchers, such as Dill et al. (2005), have pointed to the need to examine the gender stereotypes in addition to aggressive images that are depicted in many video games. Male characters are portrayed as hyper-masculine, extremely muscular, aggressive, and violent, whereas female characters are presented as highly sexualized depictions of women. Although only 10% to 14% of main characters are female, when the characters are females, they are typically voluptuous and thin, shown wearing much less clothing than male characters and are generally dressed to draw attention to their bodies in a sexual manner (Beasley & Standley, 2002). At the same time, advancement of computer technology during the past 10 years has made it possible for graphic depiction and content of video games to become increasingly more visually realistic, blurring the lines between what is real and what is not (Beasley & Standley, 2002; Carnagey & Anderson, 2004; Dietz, 1998; Dill et al., 2005).

Although it is clear that many video games depict an array of negative male and female images (Beasley & Standley, 2002; Dietz, 1998; Dill et al., 2005; see also Gentile, Humphrey, & Walsh, 2005; Walsh & Gentile, 2001),

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few studies have investigated how youth evaluate these video games and how their evaluations of video games may differ depending on the content and context of the specific video game. One exception is a study by Buchman and Funk (1996), which found that fourth and fifth grade children viewed playing video games as more socially acceptable for boys than for girls, particularly aggressive games. These findings indicate that research on gender stereotypes in video games is clearly warranted.

The goal of this study was to extend current research by investigating whether young people differentially evaluated negative female and male stereotypic images (e.g., sexual exploitation and violence, respectively) as legitimate or as unfair and why. Multiple indices of how students evaluated video games included whether the content should be changed, who should regulate game playing, and whether stereotypes depicted in games influence the behavior and attitudes of the players.

Social-Cognitive Domain Framework

Recent work in developmental social cognition provided a framework, referred to as a social-cognitive domain model (see Smetana, 1995, 2006; Turiel, 1983, 1998), for the measures generated for this investigation about evaluations of video games. Based on the social-cognitive domain model, we hypothesized that evaluations of video game playing will reveal that it involves moral considerations (Does exposure to negative images involve harmful consequences?), social-conventional expectations about gender roles (Are depictions of gender roles in video games stereotypic?), and autonomy (Is playing solely a matter of personal choice?).

In addition to assessing how participants' evaluations of video games varied according to the type of gender stereotypes depicted in the game, we investigated whether participants viewed gender stereotypical images in video games as affecting players' attitudes and behavior. Drawing on Smetana's (1995) research regarding adolescent social cognition, we also examined how students evaluated authority jurisdiction of video game playing. This included assessments regarding whether parents should monitor video-game playing, whether the government should regulate video games, and whether playing video games differentially influences adolescents' and adults' attitudes. Furthermore, we obtained data on participants' use of video games. Based on social-cognitive domain research (Smetana, 1995), we expected that late adolescents would view video games as within the adolescent's jurisdiction, though within the parent's jurisdiction for

younger children, and that it would differ depending on whether the player was an adolescent or adult.

Stereotype Evaluation

Stereotype research (Ruble & Martin, 1998) shows that male stereotypes are typically viewed more positively than female stereotypes (e.g., being aggressive is more admired than being weak). Whereas stereotypic images of males in most video games emphasize aggression and physical dominance, female stereotypes predominantly focus on sexuality (Dill et al., 2005). Although our general expectation was that students would be more accepting of male stereotypic video games than of female stereotypic video games, it was an open question whether this expectation would apply for both male and female participants.

Horn (2003), who investigated adolescents' evaluations of exclusion in peer groups, found that girls have more experience with exclusion (e.g., being excluded from sport teams) and are more likely to challenge the status quo, particularly when there is a perception of unfair treatment. Based on this research, we proposed that males would be more willing to accept stereotypic images in video games than would females and would be less likely to judge that the content should be changed than would females.

Desensitization Toward Video Games

Funk's (2005) review of the findings of desensitization with increased video game playing led us to predict that high-frequency users, typically males, would be less critical of negative images in video games than low-frequency users, typically females, and less likely to view the content as having a negative effect on players' behavior. Players with more long-term exposure to violent video games were found to have lower empathy and more positive attitudes toward violence (Funk, Baldacci, Pasold, & Baumgardner, 2004; Funk et al., 2003), slower response times when helping a victim of violence, and decreased arousal to previously upsetting stimuli (see Carnagey & Anderson, 2004; Funk, 2005) than those with less exposure to the games. Such desensitization is likely to manifest in the players' perceptions of the acceptability of the content of the games as well as their view of the negative effects of game play. Regarding usage and desensitization, we predicted that males would play video games more than would females and that this would be related to a greater acceptance by males of the sexually

exploitive and hyperaggressive content and a greater rejection of the negative effects of game exposure on players' behaviors and thus the need to change the game content.

Goals and Hypotheses

Social evaluations were measured regarding three different types of video games: gender neutral (sports: surfing for the big wave), male stereotyped (aggression and violence: tracking down a terrorist with weapons), and female stereotyped (sexually exploitive: scantily clad women playing a game of golf). Our independent variables were the type of video game (gender neutral, male stereotypic, female stereotypic), the gender of the participant, and the frequency of participant game usage (e.g., high, low). Our assessments were (a) knowledge of game usage; (b) awareness and evaluation of gender stereotypes depicted in the games; (c) influences of video-game playing on behaviors, attitudes, and judgments; and (d) authority jurisdiction. Participants' responses were analyzed with a coding system, derived from the social-cognitive domain research (see Killen, Lee-Kim, McGlothlin, & Stangor, 2002; Smetana, 1995, 2006; Turiel, 1998, 2006).

In sum, we expected (a) that participants would be more accepting of the male stereotypic images than of the female stereotypic images, (b) that participants would perceive games with gender stereotypical images as having more influence on shaping players' attitudes toward women and men than gender neutral game containing no gender stereotypical images, (c) that these ratings would differ depending on whether the player was an adolescent or an adult, and (d) that participants would support the idea of modifying video games if they had a harmful effect on players. Regarding the demographics of the players, we expected that (e) evaluations of jurisdiction would be related to the frequency with which participants play video games and (f) that male and female participants would evaluate male and female stereotypic games differently (with few differences for the gender neutral game).

Regarding frequency of play, we predicted that high-frequency players would be (g) less critical of stereotypic content, (h) less likely to judge that the game content should change, and (i) more likely to judge that adolescents, not parents, should monitor video game playing. In terms of gender and frequency of participant game usage, we expected that females and low-frequency players would be more sensitive to the harmful nature of stereotyping and thus be (j) more critical of the stereotyped video games as well as (k) more in favor of authority regulations over and changes to games viewed as having negative consequences.

Method

Participants

Participants ($N = 87$) were late adolescents in their first or second year at a large, public, mid-Atlantic university and consisted of 46 female ($M = 19.46$ years of age, $SD = 1.05$) and 41 male ($M = 19.38$ years of age, $SD = 1.11$) students. The sample was predominantly European-American (75%), with 9% African American, 3% Asian American, 1% Latin American, and 12% Other, recruited through an introductory psychology research subject pool. All of the prospective interviewees were given a short description of the study; informed of the confidential, anonymous, and voluntary nature of the study, as well as the Institutional Review Board's approval of the study; asked to return a signed consent form if they chose to participate; and debriefed following the assessment.

Measures

There were two measures used in this study: Social Reasoning About Video Games Interview and a Video Games Survey. Both of these instruments were developed specifically for use with this study (Killen, Henning, & Brenick, 2003). Trained research assistants individually administered the Social Reasoning About Video Games Interview to each participant in a 45-min, audio-tape-recorded session. These one-on-one sessions took place in a quiet room at the university.

The Social Reasoning About Video Games Interview. This instrument was developed to assess middle and late adolescents' attitudes toward and evaluations of gender stereotypes in video games as well as the jurisdiction of those games. The format and content of this instrument was defined through numerous pilot interviews.

In the first section of the interview, the participants were asked evaluative questions regarding three types of video games: (a) *Surfer* (gender neutral), (b) *Terrorist Hunt* (male stereotypic), and (c) *Extreme Golf* (female stereotypic). This order of presentation was selected by design to present the more readily condoned images first, followed by less readily condoned images (which could prime a negative viewpoint if presented at the beginning). Color photographs, sampling still shots from each game, were shown to interviewees. In the *Surfer* game, men and women were dressed in wet suits, stood on surf boards, and rode large waves. In the *Terrorist Hunt*

game, men in soldier uniforms aimed large rifles at other men and attacked them while holding them in a headlock position. In the *Extreme Golf* game, scantily clad women were displayed in sexually provocative poses, revealing different parts of their body playing golf. All of these images were from actual games rated "T" for teens by the Entertainment Software Rating Board, indicating they have been approved for players 13 years of age and older. However, it should be noted that in one study, parents rated only 43% of "T" games presented as appropriate for children 13 years and older (Walsh & Gentile, 2001; also see Gentile et al., 2005, for a comprehensive review of numerous other issues with the ratings system). Each game was selected because it had either a gender neutral, male stereotypic, or female stereotypic main character and was available on the market.

The evaluative questions of the interview included 20 questions per game, organized into the following sections: (a) knowledge of game usage, (b) awareness and evaluation of gender stereotypes depicted in the games, and (c) influences of video game playing on behaviors, attitudes, and judgments. In the fourth section, (d) authority jurisdiction, participants answered 16 questions regarding video game jurisdiction. Participants were asked to keep in mind the different types of games that were covered in the first section. Questions in the authority jurisdiction section dealt with (a) locus of decision and (b) authority influence (see Appendix A for examples of questions). Questions in these sections were answered using Likert-type scales, forced choices, and justification responses.

Justification Coding

Separate coding systems were created for each question to categorize the justification responses given to open-ended questions in the interview (see Appendices A and B). These systems were developed based on the results of extensive data from pilot interviews and were derived from the social cognitive domain model and previous research using related categories (see Killen et al., 2002; Smetana & Asquith, 1994; Turiel, 1983, 1998). The categories encompassed reasons why individuals rated the game usage as primarily male, female, or both (knowledge of game usage); evaluated the game content as appropriate or not appropriate (evaluation of stereotypes); why and how the character portrayals in the video games would or would not have an effect on video game players (influence of stereotypes and video game playing); and who should monitor video game usage and why (authority jurisdiction).

Participants' knowledge of game usage ratings of whether males, females, or both would play each type of game were detailed in four justification

categories in terms of appeals to negative male and female stereotypes, positive stereotypes, and neutral stereotypes. The justifications of the evaluations of stereotypes were coded as positive, negative, or neutral views of the stereotypes. Categories used to assess the influence of these stereotypes and video game playing on behaviors, attitudes, and judgments included encouraging counterstereotypes, reinforcement of stereotypes, and behavioral changes. This section was also categorized in terms of whether the participant rejected or accepted the premise that playing video games changes attitudes, expectations, and behaviors; blamed the player; or viewed the changes as harmless. Responses regarding authority jurisdiction over game play from the second section of the interview were categorized based on whether the participant saw the adolescent or the parent as having authority over the choice of games an adolescent should play (see Appendix B for all categories).

For each response given by a participant to a justification question, the answer would be assessed and coded as either having used (coded as 1) or not having used (coded as 0) the set of justifications defined for that question. This method has been used in previous research involving justification coding systems (see Nucci & Smetana, 1996; Smetana, 1988).

Reliability Coding

Inter-rater reliability for the justification coding was conducted on 25% of the interviews coded by two research assistants to assess not only the reliable agreement of the raters for the given answers but also that few, if any, answers were left uncodable by the coding systems. Disagreements were discussed until consensus was reached on how the items should be coded. The Cohen's kappa was .86 (percentage agreement = 90).

Frequency of Play and Approval of Stereotype Variables

In addition to the interview, all participants filled out a survey that included questions regarding game usage and preferences. The survey asked participants to report how often they played video games as well as what categories of games they preferred to play. The items in the survey were forced choice or scaled responses.

Using the data from the survey, high- and low-frequency playing groups were created by combining participants into two categories according to their self-ratings on 4-point Likert-type scales. Participants who indicated they played *never* or *rarely* were coded as low-frequency players ($n = 44$),

and participants who played *sometimes* or *often* were coded as high-frequency players ($n = 42$).

Additionally, participants were grouped into two categories based on their approval of video games depicting negative gender stereotypes: Participants rating that it was *usually* or *always* all right for adolescent boys and girls to play such games were categorized as having a high approval of gender stereotyped games, male and female, respectively ($n = 58$ and $n = 37$, for boys, and $n = 57$ and $n = 36$, for girls), and participants rating games with gender stereotypes as *never*, *rarely*, or *sometimes* all right to play were categorized as having a low approval ($n = 11$, $n = 21$, and $n = 20$ for boys, and $n = 41$, $n = 37$, and $n = 40$, for girls).

Results

All hypotheses were tested with univariate ANOVAs. To test our hypotheses regarding participants' judgments about the gender stereotypes in video games, we conducted separate 2 (Gender of Participant) $\times$ 3 (Game Scenario: *Surfer*, *Terrorist Hunt*, *Extreme Golf*) ANOVAs with repeated measures on the last factor. Follow-up ANOVAs were conducted separately for scenario. Post hoc comparisons were performed using one-way Bonferroni t tests and paired-samples t test for within-subjects differences. The results are presented in three sections based on the independent variables: the type of video game (gender neutral/*Surfer*, male stereotypic/*Terrorist Hunt*, and female stereotypic/*Extreme Golf*), the gender of the participant, and frequency of participant game usage (high and low).

Did Participants Evaluate the Three Video Games Differently?

As shown in Table 1, participants judged that the *Surfer* game was played by both males and females and that the *Terrorist Hunt* and *Extreme Golf* games were played mostly by males. Participants' explanations for these judgments of why a particular type of game would appeal to males, females, or both did not vary across high- and low-frequency players or between male and female participants. For *Surfer*, more participants mentioned gender neutrality (lack of stereotypes) ($M = .63$) and gender specific interest in sports ($M = .37$) than interest in violence ($M = .00$) or interest in sexual appearance ($M = .01$; $p < .00$). In contrast, for *Terrorist Hunt*, interest in violence ($M = .84$) and, for *Extreme Golf*, interest in sexual appearance ($M = .68$) were used more frequently than other explanations ($p < .00$; see Table 2 for proportions).

Table 1
Proportion of Responses to “Who Plays This Video Game?”

Gender/Game	Participant Gender		
	Male	Female	Both
<i>Surfer</i>			
Male	.59	.00	.41
Female	.39	.02	.59
<i>Terrorist Hunt</i>			
Male	.95	.00	.05
Female	.87	.00	.13
<i>Extreme Golf</i>			
Male	.83	.00	.17
Female	.70	.02	.28

Note: $N = 87$.

Table 2
Proportion of Justifications for “Why Does the Game Appeal to Video Game Players?”

Game/Gender	Justification			
	Violence	Sexual	Sports	Neutral
<i>Surfer</i>				
Male	.00 (.00)	.01 (.08)	.41 (.47)	.58 (.47)
Female	.00 (.00)	.00 (.00)	.34 (.44)	.66 (.44)
<i>Terrorist Hunt</i>				
Male	.76 (.38)	.00 (.00)	.00 (.00)	.24 (.38)
Female	.90 (.27)	.00 (.00)	.00 (.00)	.10 (.27)
<i>Extreme Golf</i>				
Male	.00 (.00)	.68 (.44)	.13 (.30)	.19 (.39)
Female	.00 (.00)	.68 (.39)	.10 (.20)	.22 (.37)

Note: Violence = appeals to an interest in violence; sexual = appeals to an interest in sexual appearance; sports = appeals to a gender specific interest in sports; neutral = gender neutrality (lack of stereotypes). Values in parentheses are standard deviations.

Participants rated the *Surfer* video game as the most appropriate ($M = 4.95$ for male players and $M = 4.94$ for female players), *Terrorist Hunt* as the second most appropriate ($M = 4.17$ for male players and $M = 4.16$ for female players), and *Extreme Golf* as the least appropriate to play ($M = 3.74$ for players of both genders; $p < .01$). As shown in Table 3, characters in *Surfer* were viewed as reflecting no stereotypes or neutral and positive

Table 3
Proportion of Responses to “Are There Male/Female
Stereotypes in This Video Game?”

Game/Gender	Type of Stereotype		
	None	Neutral/ Positive	Negative
<i>Surfer</i>			
Male	.38 (.49)	.57 (.49)	.03 (.16)
Female	.41 (.50)	.52 (.50)	.04 (.19)
<i>Terrorist Hunt</i>			
Male	.15 (.36)	.31 (.46)	.54 (.49)
<i>Extreme Golf</i>			
Female	.00 (.00)	.07 (.26)	.93 (.26)

Note: There were no females in the pictures shown for *Terrorist Hunt* and no males in the pictures shown for *Extreme Golf*. Values in parentheses are standard deviations.

stereotypes more often than negative stereotypes, $F(1, 105) = 20.56, p < .00$, and $F(1, 100) = 25.52, p < .00$, for female and male characters, respectively (follow-up t tests were significant, $p < .05$). The participants evaluated the three games quite differently.

Gender Differences Regarding Evaluations of Video Games

Did females and males evaluate stereotypes in video games differently? We predicted that female participants would evaluate video games with negative gender stereotypes as less appropriate than would male participants. A significant main effect for gender, $F(1, 85) = 29.36, p < .01$, and $F(1, 85) = 15.21, p < .01$, for male and female players, respectively, confirmed that female participants' ratings of video games were less favorable than that of males. Moreover, significant Gender $\times$ Type of Game interactions, $F(2, 170) = 8.71, p < .01$, and $F(2, 170) = 6.82, p < .01$, for male and female players, respectively, indicated that gender differences in the evaluation of video games varied depending on the type of gender stereotypes present in the game (see Table 4 for means). Follow-up tests revealed that although males and females did not differ in their ratings of the *Surfer* game, compared to male participants, females rated both *Terrorist Hunt* and *Extreme Golf* as significantly less suitable for players of either gender ($p < .01$).

Follow-up tests revealed that females did not differentiate between *Terrorist Hunt* and *Extreme Golf*. In contrast, males rated the violent *Terrorist Hunt* as significantly more “all right” than the sexually exploitive *Extreme*

Table 4
Mean Responses to “If Adolescents or Adults Change Their Attitudes About Males/Females in Terms of Their Image, Roles, or Behavior Based on What They See in These Games, What Do They Change?”

Player Age/Character Gender	Game × Type of Attitudinal Change					
	Gender Neutral			Stereotyped		
	Counter	Stereotypes	Imitation	Counter	Stereotypes	Imitation
Female character						
Adolescent	.29 (.45)	.44 (.50)	.10 (.30)	.01 (.05)	.81 (.38)	.11 (.30)
Adult	.20 (.40)	.20 (.40)	.05 (.21)	.04 (.19)	.45 (.50)	.06 (.24)
Male character						
Adolescent	.04 (.19)	.34 (.47)	.17 (.38)	.00 (.00)	.43 (.49)	.38 (.48)
Adult	.04 (.19)	.20 (.40)	.07 (.26)	.00 (.00)	.29 (.45)	.18 (.38)

Note: Counter = encouragement of gender counterstereotypes; stereotypes = reinforcement of gender stereotypes; imitation = encouragement of behavior imitation. Gender neutral is the *Surfer* game for both male and female characters. Stereotyped is the *Terrorist Hunt* game for males and the *Extreme Golf* for the female characters. Values in parentheses are standard deviations.

Golf ($p < .01$). Thus, although male and female participants rated both as significantly less appropriate than *Surfer* ($p < .01$), only males distinguished between *Terrorist Hunt* and *Extreme Golf*. This was a novel finding and pointed to the relative acceptability by males of violent games in contrast to how females conceptualize these types of games.

When participants' general opinions about unrealistic character portrayals in video games were assessed, a univariate ANOVA revealed that gender was significantly related to negative attitudes toward unrealistic characters in video games, $F(1, 85) = 7.51, p < .01$: Females ($M = .57$) were less likely than males ($M = .83$) to rate that it was *all right* for video games to depict traits that were unrepresentative of the way most people look and act. This finding confirmed our expectations that females would be more likely to evaluate the presence of gender stereotypical images in video games as negative.

Further analyses revealed a main effect for gender on both the appropriateness of video characters for players being boys and girls, respectively, $F(1, 85) = 16.64, p < .01$, and $F(1, 85) = 10.77, p < .01$, supporting our prediction that male and female participants would evaluate characters across the three types of games differently. Overall, females evaluated video game characters as less appropriate ($M = 3.39$ for boys and $M = 3.36$ for girls) than did males ($M = 4.03$ for boys and $M = 4.11$ for girls).

Additionally, there was an interaction effect for appropriateness of video game characters for boys, $F(2, 170) = 7.19, p < .01$, indicating that participants' evaluations varied as a function of the game as well as of the participant's gender. Follow-up tests revealed that although females rated characters in the stereotypic games as significantly less *all right* for boys than those in the gender neutral game ($p < .01$), they did not rate the two gender stereotypic games as significantly different from one another. Males, however, clearly distinguished between all three games, rating characters in *Terrorist Hunt* as significantly less appropriate for boys than those in *Surfer* ($p < .05$) but as significantly more appropriate than characters in the *Extreme Golf* ($p < .01$; see Table 5 for means).

What reasons did students give for their evaluations of video game playing? Analyses revealed that female and male participants used different justifications when evaluating video game playing and particularly for whether boys or girls were the players, as shown by gender by justification interaction effects, $F(2, 166) = 9.80, p < .00$, and $F(2, 164) = 7.16, p < .00$ (for boy and girl players, respectively). In the *Terrorist Hunt*, females ($M = .42$) were more likely than males ($M = .17$) to justify their ratings for girl players in terms of the negative influences this type of video games could have on them ($p < .05$). In contrast, males ($M = .56$ and $M = .68$, for boys and girls, respectively) were more likely than females ($M = .20$ and $M = .36$) to

Table 6
Proportion of Justifications for “Why It Is or Is Not
All Right for Boys/Girls to Play Video Games?”

Game/Gender	Justification		Player's Maturity
	Harmless Entertainment	Negative Influences	
<i>Surfer</i>			
Males	.87 (.34)	.03 (.16)	.10 (.31)
Female	.75 (.43)	.11 (.31)	.14 (.34)
<i>Terrorist Hunt</i>			
Male	.56 (.50)	.24 (.43)	.19 (.39)
Female	.20 (.39)	.42 (.48)	.36 (.47)
<i>Extreme Golf</i>			
Male	.49 (.51)	.32 (.47)	.19 (.39)
Female	.20 (.40)	.58 (.49)	.23 (.42)

Note: Values in parentheses are standard deviations.

categorize *Terrorist Hunt* as “harmless entertainment,” regardless of the gender of the players ($p < .05$; see Table 6 for proportions).

Similarly, when reasoning why characters in the *Extreme Golf* game were or were not appropriate for boys, females ($M = .58$) referred to negative influences more frequently than did males ($M = .32$; $p < .05$); at the same time, males ($M = .49$ and $M = .53$, for boys and girls, respectively) referred to “harmless entertainment” more often than did females ($M = .20$ and $M = .28$; $p < .05$). In addition, for *Extreme Golf*, females ($M = .33$) were more likely than were males ($M = .19$) to consider player's maturity, when rating the appropriateness of the characters in this game for girls ($p < .05$).

Finally, males and females did not differ in their justifications for the *Surfer* game: Both males ($M = .87$ and $M = .82$, for boys and girls, respectively) and females ($M = .75$ and $M = .70$) referred mostly to harmless fun when rating characters in this game. “Overall [it] looks like an exciting game it could really let kids imaginations roll” (male, 21 years old) exemplifies such a response.

Does video game playing differentially influence adult and adolescent players? In support of our predictions, females ($M = 2.30$) were more likely than males ($M = 1.88$) to recognize the effect of video game images on changes in players' gender attitudes, $F(1, 84) = 11.05$, $p < .00$. Furthermore, 2 (Gender of Player) $\times$ 2 (Type of Game) ANOVAs with repeated measures on the last factor revealed that females ($M = 2.97$) perceived the two video games with female characters, *Surfer* and *Extreme Golf*, to be a stronger

source of influence on adolescent players' attitudes toward females than did males ($M = 2.59$), $F(1, 85) = 6.33$, $p < .05$. Females ($M = 1.93$) also rated video games as a stronger source of influence on adult players' attitudes toward females than did males ($M = 1.50$), $F(1, 85) = 7.20$, $p < .01$. Males ($M = .26$), however, as compared to females ($M = .41$), were less likely to view playing games with negatively stereotyped female characters as potentially harmful, $F(1, 83) = 5.31$, $p < .05$. With respect to male images, males ($M = .09$) were also less likely than females ($M = .35$) to view games containing negatively stereotyped male characters as harmful, $F(1, 83) = 14.83$, $p = .00$. In general, females stated more frequently than males that images in video games could affect players' gender attitudes.

These results were paralleled in the findings for participants' views about the influence of video games on adolescents' and adults' attitudes toward males. Females ($M = 2.48$) rated both games with males characters, *Terrorist Hunt* and *Surfer*, to be a stronger source of influence on adolescent players' attitudes toward males than males did ($M = 2.00$), $F(1, 85) = 6.97$, $p < .01$. Females ($M = 1.80$) also rated video games as a stronger source of influence on adult players' gender attitudes about males than males did ($M = 1.43$), $F(1, 84) = 5.29$, $p < .05$. Furthermore, in regard to the possible types of attitudinal changes (encouragement of gender counterstereotypes, reinforcement of gender stereotypes, or encouragement of behavior imitation in players), more females ($M = .51$) than males ($M = .24$) believed that video games reinforce male gender stereotypes, $F(1, 83) = 10.44$, $p < .01$.

Should video games be changed? The findings clearly supported our hypothesis: When considering adolescent players, females ($M = 3.12$) viewed changes to the video games more favorably than did males ($M = 2.11$), $F(1, 85) = 25.19$, $p < .01$. These differences were significant in evaluations between males and females for all three games: Females ($M = 2.02$, $M = 3.52$, and $M = 3.83$ for *Surfer*, *Terrorist Hunt*, and *Extreme Golf*, respectively) thought that games should change more often than did males ($M = 1.49$, $M = 2.27$, and $M = 2.56$; $p < .05$).

In terms of the reasoning used to explain why the game should or should not change, analyses revealed that there were no significant differences between male and female participants. A Gender $\times$ Justification interaction for the *Terrorist Hunt* game, $F(2, 142) = 3.62$, $p < .05$, however, indicated that males ($M = .40$) were more likely than females ($M = .13$) to state that if a player changed his or her attitude to be more like the negatively stereotyped male characters depicted in this game, it would be that player's own fault ($p < .01$).

Were there differences regarding authority jurisdiction? The results of univariate ANOVAs confirmed that males ($M = .49$) preferred adolescent to

parental jurisdiction more than females ($M = .16$), $F(1, 84) = 12.31$, $p < .01$, and that males ($M = .61$) rejected government-based video game regulation more often than did females ($M = .28$), $F(1, 85) = 10.34$, $p < .01$. It is interesting that the majority of participants, both males and females, afforded jurisdiction over video games to parents ($M = .51$ and $M = .84$ for males and females, respectively), indicating that all participants viewed an element of negative consequences to video game playing and deferred some supervision to the parents. With respect to governmental control, however, the findings were mixed: Although the majority of females ($M = .72$) approved of it, most males ($M = .61$) opposed the idea of governmental regulations of video games.

Furthermore, a majority of the participants ($M = .53$) viewed government-based methods of regulation as ineffective. Females ($M = .59$), in general, perceived governmental regulation of video games as more effective than did males ($M = .34$), $F(1, 85) = 5.45$, $p < .05$, however contrary to our expectations, most females ($M = .59$) perceived governmental control to be effective. In contrast, the majority of males ($M = .71$) as well as females ($M = .61$) viewed parental control to be effective.

Play Frequency Regarding Evaluations of Video Games

We hypothesized that frequency of playing video games would be related to judgments about stereotypical gender portrayal. Our analyses revealed that high-usage players were mostly males (90.2%), and low-usage players were mostly females (88.9%). This finding reflects the patterns of usage as reported in the empirical literature (Beasley & Standley, 2002; Buchman & Funk, 1996). Our findings for gender, then, as reported above, were similar for usage. We report our results for usage that extend beyond the gender findings.

Did high-usage players approve of gender stereotypes? As hypothesized, we found that play frequency was related to approving gender stereotypes in video games, $F(1, 71) = 4.33$, $p < .05$, and $F(1, 84) = 7.78$, $p < .01$, for games with male and female stereotypes, respectively. Furthermore, participants who condoned negatively stereotyped images when boys play these games played video games more often ($M = .65$ and $M = .67$) than participants who disapproved of these images ($M = .17$ and $M = .36$), $F(1, 85) = 21.43$, $p < .00$, and $F(1, 85) = 8.47$, $p < .05$, for male and female stereotyped games, respectively. Similarly, participants who approved of negatively stereotyped games when girls play these games played video games more often ($M = .63$ and $M = .63$) than those who disapproved of such games

($M = .23$ and $M = .39$), $F(1, 85) = 13.61, p < .00$, and $F(1, 85) = 4.79, p < .05$, for male and female stereotyped games, respectively.

Our hypothesis that high play frequency would be related to lack of concern about negative consequences of playing games with stereotypical gender images was also supported. With respect to negatively stereotyped female images, we found that participants who played more frequently ($M = .66$) were less likely to view playing games such as *Extreme Golf* as potentially harmful compared to participants who played less often ($M = .37$), $F(1, 83) = 7.30, p < .01$. With respect to negatively stereotyped male images, analysis revealed similar results: Compared to low-frequency players ($M = .33$), high-frequency players ($M = .56$) viewed games such as *Terrorist Hunt* as less likely to cause harm; although this finding was not statistically significant, there was a strong trend, with differences between the two groups closely approaching a significance level of .05, $F(1, 83) = 3.90, p = .052$.

Finally, we hypothesized that high-frequency users would see less need for the video games to change even if playing the game caused the player to adopt behaviors and attitudes more like those of the game characters. Participants rated whether video games should change if adolescent players changed their attitudes to be more like the characters in the game. Confirming our hypothesis, there were significant differences in evaluations between frequent and infrequent players for all three games: Infrequent players ($M = 2.00$, $M = 3.55$, and $M = 3.86$ for *Surfer*, *Terrorist Hunt*, and *Extreme Golf*, respectively) thought that games should change more often than did frequent players ($M = 1.55$, $M = 2.26$, and $M = 2.57$; $p < .05$).

Discussion

The findings in this study confirmed our general expectations that males and females evaluate stereotypic images in video games using different forms of reasoning. On one hand, all participants, male and female, viewed violent images of males' aggressive behavior and sexually exploitive images of females' attire and poses as wrong because of the negative influences that these images can have on players' attitudes and behavior. Yet participants also viewed video game playing as an issue of autonomy and, in some cases, under adolescents' jurisdiction. Furthermore, participants' notions about how video game playing influences attitudes and behavior were fairly literal—that is, participants stated that video game playing has little negative effect on players' attitudes because players do not often

directly copy or imitate the behavior observed (e.g., "Playing is okay because it's not like he's going to go out and shoot someone tomorrow.").

Yet males were less likely than females to view the violent game as negative or as having a negative consequence on players' behavior and attitudes. Given the findings by Anderson and Bushman (2001) and Carnagey and Anderson (2004) demonstrating that playing violent games has a negative impact on players' attention span, impulsivity, and aggression, along with Funk et al.'s (2003, 2004; see also Funk, 2005) findings about desensitization, late adolescents' (particularly males) perceptions of the consequences of playing games are discrepant from research findings. In our study, males viewed video game playing as a personal choice and one that had little negative effect on their social outlooks or behavior. Empirical research, however, has demonstrated that there are, in fact, numerous negative consequences of playing games with negative content and images (see Dill et al., 2005; Funk, 2005).

The novel findings of the present study were that individuals who play video games with high frequency, particularly males, were more likely to condone negative stereotypic images, to be less critical of negative images, and to view that game content should not change than were individuals who play video games with low frequency. Together, these findings indicate that male and high-frequency players may not only show increases in aggressive outcomes resulting from playing violent video games but also be more accepting of such increases in aggression. These effects may continue with prolonged video game usage and exacerbate each other with time. Repeated exposure to negative stereotypic content potentially reinforces attitudes that could lead to discriminatory and prejudicial attitudes. For example, extensive research on intergroup attitudes has shown that stereotyping leads to discrimination and prejudice (Dovidio & Gaertner, 2000, *in press*; Gaertner & Dovidio, 1986; Stangor & Schaller, 1996).

Regarding authority jurisdiction, the majority of all participants responded that parents, rather than adolescents ages 13 to 18, should decide what video games those adolescents should play. These responses reflected how participants viewed authority jurisdiction for a population younger than themselves. Future research needs to examine how adolescents within the age range of 13 to 18 respond to this same question about authority jurisdiction. This study has shown that late adolescents differentially view the influences of playing video games on adolescents' versus adults' attitudes and behaviors. As a result, participants may see a greater need for parental control in game selection for younger adolescents because of the belief that they are more at risk for being influenced by the games. It is possible, however, that when asking younger adolescents to respond to this question, they will view themselves as less likely to be influenced by the games and thus report

a lesser degree of parental authority as warranted. This could have a significant impact on the actual effectiveness of parental control over video games. Future research in this area is warranted.

In line with these results, the current study revealed an overall belief in the effectiveness of parental control and a belief by females in the effectiveness of governmental control over video game regulation. It is likely that the male, high-frequency players find governmental regulations to be ineffective because they equate such regulations to the current video game rating system that is rarely enforced. Moreover, males may find governmental regulation to be too imposing because of their beliefs that video games are not harmful and thus find them pointless.

By examining the justifications as to why these participants find parental regulation to be effective and governmental regulation to be ineffective, parents, the government officials, and the video game industry can better determine the best course of action to take to ensure that children and adolescents are exposed to age-appropriate games. This can be accomplished by thorough consideration of players' perspectives on how games do or do not affect them and why as well as by furthering the efforts to educate children and adolescents along with their parents as to how video games do, in fact, affect players. More directed and appropriate education will, in turn, increase responsible game usage and monitoring.

Although there is a need to examine how early these effects manifest in younger children to educate and/or intervene in an age-appropriate manner, we designed this study to interview late adolescents rather than to interview children or younger adolescents. In part, this was because we were interested in discerning how individuals evaluate negative content in video games, which typically depicts disturbing images (violence, sexually exploitive poses), and although the games used in this study were all rated "T," we viewed the content as potentially harmful for younger viewers. Even though younger adolescents play these games, we made the decision not to interview them about it as this may indirectly focus on the sexually provocative dimension, which they might not necessarily be aware of yet, and parents may be reluctant to have their children asked about sexually provocative images in video games.

We created an in-depth 40-min interview protocol, which probed participants' reasoning about three different games, varying in content. The results provided an array of dimensions for further inquiry, particularly with a younger sample, using a survey rather than an interview methodology. Based on these data, a follow-up study was conducted with younger adolescents, revealing a significant relationship between increased play, support of stereotypic images, and a lack of awareness of the negative consequences

of playing aggressive and sexually exploitive games (Henning, Brenick, Killen, O'Connor, & Collins, in press). An advantage of a survey method for younger adolescents is the increased level of confidentiality, which is important for this age group given the nature of the content of the video games, while also allowing for a larger sample size which is desirable given the number of questions on the instrument.

The findings of this study contribute to research on developmental social cognition in several ways: (a) Different forms of social reasoning (harmful consequences, autonomy) were applied to a new content area, video game playing; (b) context differences were acknowledged in the extent that a video game with neutral content was deemed as all right to play, a violent game was viewed as negative, and a sexually exploitive game as the most negative; (c) authority jurisdiction was evaluated differently depending on the content of the game and the participants' own frequency of game playing, with high-frequency players deeming the decision to play as an autonomous one and low-frequency players deeming the decision to play as under authority, parental and governmental, jurisdiction; (d) gender differences emerged regarding evaluations of the appropriateness of stereotypic themes and images, with males being less critical of stereotypes than females and with female stereotypic images being viewed more positively by male participants than by female participants; and (e) frequency of play differences emerged, with high-frequency players being less critical of the stereotypic content than low-frequency players, finding stereotypical gender portrayal as more acceptable, as less likely to have negative effects on players and as not needing to be changed regardless of possible negative effects on players. Future studies should include different themes of violent, male-stereotyped video games. The current study used a game dealing with military spying on the enemy, a theme that may be differentially evaluated based on the changed opinions regarding the nation's position on the war against terror, a potential limitation of this study. Additionally, future research should examine how the ethnicity as well as the gender of the participant influences evaluations of video games, along with documenting age-related patterns of evaluations.

These findings will contribute to an understanding of how youth perceive their experiences of playing video games and the content of such video games, as well as to an understanding of the effects of video game play on stereotype evaluation and the contingent societal effects. These findings will also inform the manner in which parents educate their children and adolescents about the effects of video game play and the manner in which parents, the government, and the video game industry regulate age-appropriate game usage.

Appendix A

The Social Reasoning About Video Games Interview Question Examples by Section

Section	Examples
Knowledge of game usage	Who plays this type of game: males, females or both? Why?
Awareness and evaluation of gender stereotypes depicted in the games	Is it all right for fe/males to play? Why? Some adults say that fe/males shouldn't play, what do you think? Do fe/male stereotypes exist in this game? What are the stereotypes? Is it all right for stereotypes to exist in these games? Why?
Influences of video game playing on behaviors, attitudes, and judgments	Is it all right for fe/males to play games that depict characters stereotypically? Do adults/adolescents change their attitudes about fe/males' image, roles, or behaviors based on what they see? Should the game change if it changes their attitudes?
Authority jurisdiction: Locus of decision	Who should decide when a video game is okay to play for adolescents aged 13 to 18 years, adolescents or their parents? Why?
Authority jurisdiction: Authority influence	Do parental decisions influence usage? Does governmental regulation influence usage?

Appendix B

Justification Coding Categories by Section and Question

Category	Examples
	Knowledge of Games: "Why do males/females/or both play this type of video game?"
Appeals to interest/disinterest in violence (male stereotypic traits)	"It's all about attacking and fighting . . . and males are more interested in it because of that." "It looks like a more violent game sort of and so I tend not to play that, I feel that most girls wouldn't."
Appeals to interest/disinterest in sexual appearance (female stereotypic traits)	"The way women are portrayed." "Seductive, skirts blowing up, girls on pole."

(continued)

Appendix B (continued)

Category	Examples
Appeals to interest/disinterest in sports	"I think guys are more into surfing than girls." "Most sports games are geared towards males."
Appeal to interest/disinterest in gender neutrality or lack of stereotypes	"Because surfing could be either male or female. Anybody could try." "You can play as both male and female."
Evaluation of stereotypes: Why is it all right for stereotypes to exist in these games?	
Video games are harmless entertainment	"I don't see anything portrayed in a bad fashion here, that's just the way it is."
Stereotypes in video games are negative influences	"It doesn't really give you the opportunity to see another type of person, they might just emulate them."
Player traits, such as maturity, are the defining factor	"It won't affect you if you're old enough, mature enough."
Influence of these stereotypes and video game playing:	
Is it all right for males/females to play games that depict characters stereotypically?	
Encouragement of gender counterstereotypes	"It does have guys and girls, so that might give girls a little more power."
Reinforcement of gender stereotypes	"They might see women as more sexual, which would be bad."
Behavioral changes of the player to be like that of the characters	"They might try to copycat."
Influence of these stereotypes and video game playing:	
Do players change their attitudes about males'/ females' image, roles, or behaviors based on what they see?	
Rejection of the premise that video game play changes attitudes, expectations, and behaviors	"It's just a game. I don't see anything that's wrong with this game."
Blamed the players for any changes	"Video games aren't responsible for who people are or what they do."
Saw only positive or harmless changes as a result of play and/or impact of other influences warranted changing the game to be pointless	"I'd say TV and movies are probably more of an influence than a golf game."
Accepted the notion that video game play affects players' perceptions of reality in a negative manner	"It's a negative under-toned game. If they can't separate it from reality, that would be horrible."

(continued)

Appendix B (continued)

Category	Examples
Authority jurisdiction: Why should a parent/an adolescent decide when a video game is okay to play?	
Personal choice	"They (an adolescent) should be able to pick what they want to play."
Harmless entertainment	"Video games are harmless and it does not matter who picks what games an adolescent can play."
Parental jurisdiction	"It is the parent's responsibility to ensure the safety of their child."

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