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Playing With Prejudice: The Prevalence and Consequences of Racial Stereotypes in Video Games

MELINDA C. R. BURGESS

*Department of Psychology, College of Graduate and Professional Studies,
Southwestern Oklahoma State University, Weatherford, Oklahoma, USA*

KAREN E. DILL

School of Psychology, Fielding Graduate University, Santa Barbara, California, USA

S. PAUL STERMER

College of Arts and Sciences, Oklahoma State University, Stillwater, Oklahoma, USA

STEPHEN R. BURGESS

*Department of Psychology, College of Graduate and Professional Studies,
Southwestern Oklahoma State University, Weatherford, Oklahoma, USA*

BRIAN P. BROWN

*College of Arts and Sciences, University of North Carolina–Wilmington,
Wilmington, North Carolina, USA*

A content analysis of top-selling video game magazines (Study 1) and of 149 video game covers (Study 2) demonstrated the commonality of overt racial stereotyping. Both studies revealed that minority females are virtually absent in game representations. Study 1 revealed that, in video game magazines, minority males, underrepresented generally, were more likely to be portrayed as athletes or as aggressive, and less likely to be depicted in military combat or using technology, than White males. Study 2 also showed evidence of the “dangerous” minority male stereotype in video game covers. Again, underrepresented overall, minority males were overrepresented as thugs, using extreme guns, and also as athletes. Study 3, an experiment, exposed players to both violent

Address correspondence to Melinda C. R. Burgess, Department of Psychology, College of Graduate and Professional Studies, Southwestern Oklahoma State University, 100 Campus Dr., Weatherford, OK 73096. E-mail: melinda.burgess@swosu.edu

and nonviolent games with both White and Black characters. Participants were faster at classifying violent stimuli following games with Black characters and at classifying nonviolent stimuli following games with White characters, indicating that images of popular video game characters evoke racial stereotypes.

Emerging in recent years as one of the most ubiquitous forms of entertainment, video games have become a media giant with U.S. sales recently reaching a record high of over \$21 billion (Ortutay, 2009). Children between 8 and 17 years old make up the group that plays the most video games (Gentile, Saleem, & Anderson, 2007), with approximately 90% of this age group being regular players (Walsh et al., 2005). There is a sizeable effects literature demonstrating that games influence behaviors, thoughts, feelings, and attitudes (Anderson, Berkowitz, et al., 2003; Anderson, Gentile, & Buckley, 2007; Dill, Brown, & Collins, 2008; Konijn, Bijvank, & Bushman, 2007). Recent brain research even demonstrates differences in the brain's empathic responding based on differential video game exposure (Bartholow, Bushman, & Sestir, 2006).

Only recently has gaming research begun to concern itself with the portrayals of game characters, and this research has often focused on the portrayal of women in games (e.g., Burgess, Stermer, & Burgess, 2007; Dill & Thill, 2007). Two initial investigations of race in video games (Dill, Gentile, Richter, & Dill, 2005; Glaube, Miller, Parker, & Espejo, 2001), revealed a pattern of infrequent appearance for minority characters and stereotyped depictions when minorities were present. Glaube et al.'s (2001) examination of 70 console games (such as Playstation) found that some minorities (e.g., Latina women and Native American men) were never present, and that children's games included only White and nonhuman characters. This pattern was echoed in a sample of 20 computer games examined by Dill, Gentile, et al. (2005), which revealed only a few Black and Latino men in the role of main characters and not a single Latino or Latina secondary character. Beyond this, both investigations found frequent stereotyping of minority characters. Glaube et al. (2001) found that Latino characters were only present in sports games, that Asian characters were largely consigned to a wrestling or fighting role, and that Black characters were typically depicted as unaffected by violence through a lack of pain or physical suffering. Interestingly, even in games created before the terror attacks of 9/11, targets of violence were disproportionately likely to be portrayed as Middle Eastern (Dill, Gentile, et al., 2005).

Other content analyses have focused specifically on portrayals of aggression related to gender and race. Smith, Lachlan, and Tamborini (2003) found that, across all game types, 71% of perpetrators of violence and 65% of targets were White, and that 79% of perpetrators and 77% of targets were male. In a

further investigation, these same authors classified the ethnicity of violent characters as White, Black, Hispanic, Native American, Asian/Pacific Islander, Middle Eastern, or undefined. Results showed that the majority of characters were White (40.5%) with the next largest group being Asian/Pacific Islander, at only 8%. Interestingly, whereas mild violence was the most common form of violence, Asian/Pacific Islanders was the ethnicity most likely to engage in extreme violence, defined in part by large scale bloodshed and disfiguring injuries.

Whereas the portrayal of game characters has been a concern, there is also a growing body of research examining the social effects of media images, from video game as well as other outlets, on young adults (Dill, Brown et al., 2008; Johnson, Bushman, & Dovidio, 2008). Dill, Brown, et al. (2008) exposed participants to images of women and men that were either stereotypical sex-typed images from video games or professional images from press photographs. Then participants gave their reactions to a real-life account of the sexual harassment of a female college student by her male professor. Results demonstrated that men who were exposed to the video game images (female sex objects and powerful males) were more tolerant of sexual harassment. This research suggests that exposure to stereotypical imagery in the media can alter social judgments, such as deciding that a case of sexual harassment is less serious or requires less action against the perpetrator. The larger meaning is that stories we glean from mass media can change how we behave in the real world.

In one study dealing with racial stereotypes (Dill & Burgess, 2011), White students saw either video game images of Black men who fit the aggressive criminal or “dangerous minority” stereotype or media images of esteemed Black leaders such as Barack Obama alongside analogous White images. Next, in a purportedly unrelated study, participants evaluated the Web site of a political candidate named Peter Smith who was either Black or White. Results revealed interactive effects of the exemplar prime (negative or positive) on favorability and capability ratings of this candidate. Those who saw the negative (Black video game) exemplars rated the Black candidate as less favorable and capable than the White candidate. In a reversal, those who saw the positive (Black leader) exemplars rated the Black candidate as more favorable and capable than the White candidate.

Whereas there is a sufficient body of literature to appreciate the damage inherent in repeated negative and stereotyped portrayals of minorities and women, there has been a paucity of research on racial portrayals in video games. At the same time, there has been public interest in these portrayals, centering on a sample of blatantly stereotypical portrayals. Perhaps most notably, *Grand Theft Auto: Vice City* was criticized for depicting Haitians and Cubans as criminals and for potentially inciting hate crimes (*Haitian, Cuban leaders denounce GTA*, 2003). The game’s producer, Rockstar, responded to public protest about game content by removing the lines “Kill the Haitians,” and “Kill the Cubans” from the game.

THEORETICAL IMPORTANCE OF STEREOTYPED PORTRAYALS

Stereotypes have both cognitive (e.g., generalizations) and affective (e.g., fear) components (Amodio & Devine, 2006). Repeated exposure to a particular portrayal of a group teaches that this cultural view is a relevant schema for processing members of that particular group. For example, exposure to the schema of the violent Black man teaches that it is appropriate to experience apprehension when approached by a Black male. Further, exposure to these stereotypical images triggers access to thoughts, preferences, and evaluations, ultimately predicting discriminatory behavior (Amodio & Devine, 2006).

Stereotypes may sometimes be consciously processed, but stereotypes can also provoke thoughtless, nonconscious, impulsive reactions. In an update of his cognitive neoassociation theory of aggression, Berkowitz (2008) underlines the theoretical importance of these automatic processes, and the role of classical conditioning in inciting hostility and aggression. Negative ideas and feelings associated with a group are applied to other group members. These negative associations can trigger negative affect which, in turn, prompts impulsive aggressive reactions that preempt more conscious reasoning. “My cognitive-neoassociationistic analysis . . . suggests what kinds of external stimuli have this relatively compelling capacity to elicit aggressive reactions: Primarily situational features that are associated with aggression and those that are linked to decidedly negative experiences” (Berkowitz, 2008, p. 120).

Berkowitz (2008) notes that African Americans are commonly stereotyped as aggressive, hostile, and criminal (see also Devine, 1989), and that these are devalued social identities. He writes, “. . . those people who are associated with aggression generally and/or with gratifications for aggression in particular or who are associated with negative affect are especially likely to be the victims of aggression” (p. 128). Again, for aggression to be evoked, the perpetrator need not engage in a conscious cognitive appraisal (of the stereotype or situation) because aggression can be provoked through an automatic, impulsive route. Berkowitz cites research—particularly that of Devine (1989) and of Bargh, Chen, and Burrows (1996)—as examples of how even unconscious exposure to images of Blacks and words associated with Black stereotypes evoke hostility and aggression. He notes that aggressive portrayals activate hostility toward African Americans, which in turn makes aggression toward them more likely. “. . . [N]on-conscious activation of the African-American stereotype can promote hostile-aggressive behavior towards others” (Berkowitz, 2008, p. 122).

Relating this explicitly to mass media, imagery that associates African-American men with the negative stereotypes of aggression, hostility, and criminality conditions viewers to associate this constellation of negativity

with African-American men in general. Subsequently, unrelated Black men will trigger this association, which can, in turn, provoke increased aggression and hostility.

It is important to note that the stereotypical images of Black video game characters are not even real people, but they can still provide fodder for negative social judgments and negative reactions to real Black men. Support for this notion comes from Slusher and Anderson (1987), who found that even when people are simply asked to imagine stereotypes such as a rich lawyer, they do not distinguish between what they have imagined and what they have seen in reality. Slusher and Anderson call this a failure of reality monitoring. People treat their imaginary vision as they would a real-life image and it supports their stereotypes. If this is true, then it follows logically that seeing another type of imaginary or fantasy image—a picture of a video game character—might also be treated as confirmation of a stereotype. There will be little difference from seeing a Black thug in a video game and seeing a real Black criminal—both will be taken as evidence confirming the culturally held stereotype of the Black male criminal.

Given the large body of violent video game research (see Anderson, Berkowitz, et al., 2003), we expected portrayals of aggression. We were also aware of the racially charged discussions surrounding games like *Grand Theft Auto* (Leonard, 2009) and wanted to explore whether or not the portrayal of aggression differed as a function of the race of characters. A theoretically relevant way of characterizing this portrayal of violence is whether or not it is socially sanctioned (Lachlan, Tamborini, et al., 2009). We were interested in whether Whites would be more likely to be portrayed as engaged in socially sanctioned violence compared to minorities.

STUDY 1

Method

Study 1 is an exploratory content analysis designed to investigate how Black males are portrayed in imagery from top-selling video game magazines. The variables, described below, (and the percent agreement between the two raters) are: race (.98), hypermasculinity (.99), aggression (.99), war/military aggression (.96), fighting (1.00), athletics (.91), and use of technology (.94).¹ The sample used in the present study included images taken from the six top-selling game magazines on sale in January 2006. One issue from each magazine was selected, and the largest male and female images on every page from each issue were included. This produced a sample of 482 images (362 male images and 120 female images), which were then coded by one White male and one White female undergraduate research assistant. For details about magazine and image selection, and for rating procedures see Dill and Thill (2007).

Content Variables

For each image, the following races were coded following Dill and Thill (2007): White, Black, Hispanic, Asian, other, and humanoid. The other category was reserved for characters who appeared to be human and who appeared to be of a non-White race that was not always determinable. Only three races (Native American, Egyptian, and undeterminable) were listed by coders under the other category.

Hypermasculinity was defined as exaggerated male characteristics such as unnaturally large muscles or expressions of dominance. Hypermasculinity relates to features of extreme dominance, power, and aggression (Dill & Thill, 2007; Scharrer, 2004, 2005).

Aggression was defined as being engaged in behavior intended to harm another living being (Aronson, Wilson, & Akert, 2007). Of the violence categories used in Study 1, we categorized war and military aggression as socially sanctioned and fighting as not socially sanctioned. We argue that military violence should be considered relatively more socially sanctioned than fighting because military aggression is legal and, thus, sanctioned by governments and often respected by citizens. In contrast, violence in the form of non-sports fighting is most often considered criminal activity and, thus, by definition, is not socially sanctioned. Therefore, aggressive images were further coded as war/military aggression or fighting (no identifiable military rationale). Some images did not fit either category, such as a violent athlete. These images were simply coded as aggressive and not included in the subcategorical analysis.

In the initial stages of this exploratory investigation, we remarked that computer and technology use were regularly portrayed in gaming magazines. We were also aware that sports games have ranked consistently among the top sellers. We, therefore, coded computer and technology use and athletics by race of character.

Results

The data were coded using the variables described above. Frequency data were calculated for each race on the variables described above and submitted to a chi-square test of goodness of fit or test of independence, as appropriate. When frequency counts were too low (<5) to compute meaningful chi-squares, data from the separate non-White races, including the undetermined other, were collapsed into a category of "minorities," which was then compared to the White data. This is consistent with previously published work where multiple non-White categories were collapsed into a category of other (see, e.g., Lachlan, Smith, & Tamborini, 2005). These two proportions were submitted to a one-tailed (in the stereotype-consistent direction) *z*-test of the significance of the difference between two independent proportions.

Specifically, we expected non-Whites to be underrepresented and more often characterized as aggressive than Whites. As this is an initial exploratory study, we did not make further predictions as to which types of aggression-related constructs would show the same racial bias. Cramer’s measure of association in contingency (*V*) and Cohen’s Kappa are reported as the effect sizes for the chi-square and *z*-tests, respectively.

Given the low number of females, the only analyses conducted for females were those concerning the frequency of representation. Likewise, humanoids were only coded for frequency and are not included thereafter (see Table 1).

Frequency of representation. Comparing the frequency of occurrence for males of different races in the magazines to U.S. Census data (State and County Quick Facts, 2008) revealed a significant disparity between the representation of races in gaming magazines and the actual make up of the U.S. population, $\chi^2(4, N = 292) = 61.8, p < .01$, Cramer’s *V* = .23. As expected, White males (76.4%) were portrayed in gaming magazines more frequently than in the U.S. population (65.1%). White males were also overrepresented in gaming magazines compared to their representation among U.S. gamers (Walsh & Gentile, 2007), $\chi^2(4, N = 292) = 62.7, p < .01$, Cramer’s *V* = .23. Indeed, minority characters were not even quite as frequent in gaming magazines as humanoids (i.e., aliens; *N* = 70).

This same pattern was observed when analyzing the representation of women. As both Black and Hispanic women numbered fewer than five, we summed all minority women together and used a comparison of White

TABLE 1 Character Portrayals as a Function of Race in Video Game Magazines (%)

	White	Black	Asian	Hispanic	Other	χ^2/V	<i>z/b</i>
Frequency (<i>N</i>) of males	223	37	6	5	21		
Frequency (%) of males	76.4	12.7	2.1	1.7	7.2		
U.S. population (%)	66.9	12.8	4.3	14.4	2.7	61.8**/.23	
Gamers (%)	59	15	3	18	5	62.7**/.23	
Frequency (<i>N</i>) of females	91	3	5	2	5		
Frequency (%) of females	85.8	2.8	4.7	1.9	4.7		
US population (%)—whites vs. all minorities	66.9	12.8	4.3	14.4	2.7	17.3**/.40	
Gamers (%)—whites vs. all minorities	59	15	3	18	5	30.49**/.54	
Hypermasculine—males	21.2	29.8	0	20	38.1		(-)1.37, <i>p</i> = .086
Aggressive (males)—yes	66.4	73	66.6	80	85.7		(-)1.637, <i>p</i> = .05/.118
Socially sanctioned (military) (out of aggressive)	8.1	0	0	0	0		2.138*/.289
Fighting (out of aggressive)	37.8	48.1	25	75	55.5		(-)1.663*/.132
Aggressive (males)—no	33.6	27	33	20	14.3		1.64*/.118
Armor (males) (out of aggressive)	48	22.2	0	0	77.7		1.29, <i>p</i> = .09/.062
Posing with weapons (males)—(out of aggressive)	39.2	18.5	0	25	66.6		ns
Athlete (males)	8.1	29.7	0	0	9.5		(-)2.538*/.161
Violent and/or athletic	74.4	100	75	80	95		(-)3.529**/.29
Technology use (males)	13.9	2.7	33.3	20	0		1.811*/.139

p* < .05, *p* < .01.

to Non-White (including Black, Asian, Hispanic, and other). White women (85.8%) were overrepresented in gaming magazines as compared to their frequency in the U.S. population, $\chi^2(2, N = 106) = 17.3, p < .01$, Cramer's $V = .40$. White women were also overrepresented in gaming magazines compared to their representation among U.S. gamers, $\chi^2(2, N = 106) = 30.49, p < .01$, Cramer's $V = .54$. In our sample of gaming magazines, female minority game characters were just slightly more frequent than humanoid game characters ($N = 14$).

Representation as hypermasculine (males only). Portrayal as hypermasculine did not differ between Whites (21.2%) and minorities (29.0%; $z = -1.37, p = .09$) in gaming magazines.

Aggression (males only). Out of the 292 images of men, 201 of these images contained aggression (68.8%). White males (66.4%) were less likely than minority males (76.8%) to be portrayed as aggressive ($z = -1.637, p = .05, b = .118$). Note that the images of aggressive males were distributed across magazines in the following percentages: *Computer Gaming World* (76.6%), *Electronic Gaming Monthly* (62.8%), *Game Informer* (79.6%), *GamePro* (75.9%), *PC Gamer* (74.4%), and *Official Xbox Magazine* (64.4%).

Aggression: war versus fighting versus nonaggression. Out of the aggressive males, Whites (8.1%) were more likely than minorities (0%) to be found in a war setting ($z = 2.14, p < .05, b = .29$). Aggressive minorities (50.9%) were more likely than aggressive Whites (37.8%) to be found in a fighting setting ($z = -1.663, p < .05, b = .13$). Nonaggression was more common among Whites (33.6%) than among minorities (23.2%; $z = 1.64, p < .05, b = .12$).

Other characterizations. Results indicate that minority males (18.8%) were significantly more likely to be portrayed as athletes than were White males (8.1%; $z = -2.54, p < .01, b = .16$). However, White males (13.9%) were significantly more likely than minority males (5.8%) to be portrayed using computers ($z = 1.81, p < .05, b = .14$). Furthermore, minorities who were athletic, violent, or both (94.2%) were significantly more frequent than athletic and violent Whites (74.4%; $z = -3.53, p < .01, b = .29$). Indeed, 100% of all Black males were portrayed as either athletic or violent or both.

Discussion

The results of this content analysis illustrate that, although by no means were all minorities portrayed stereotypically, portrayals of race in video game magazines did differ across racial lines in a manner that was consistent with stereotypes. First, from a simple perspective of frequency, minority characters were underrepresented as compared to U.S. Census statistics, even when using the comparison group of gamers. It is interesting to note that humanoid (alien) characters were depicted more often than minority humans. Minority females were particularly underrepresented.

Minorities were portrayed as more aggressive than Whites. It is interesting to note that not a single minority was portrayed in a socially sanctioned (military) setting, whereas 8% of Whites were. This is inconsistent with statistics from the U.S. Armed Forces, which identify 16% of the enlisted personnel as Black, 11% as Hispanic and 6% as other minorities (Department of Defense, 2002). Furthermore, 51% of the aggressive minorities were depicted in fighting scenes as compared to only 37.8% of the Whites—another relatively negative portrayal of minorities as compared to Whites. The observed pattern is one where Whites are more likely to be portrayed as fighting in a socially sanctioned (military) setting and Blacks are more likely to be engaged in merely fighting.

From the perspective of pedagogy it is useful to consider actual frequency of nonviolent character portrayals, as opposed to relative frequency. Minority male characters were generally infrequent (constituting only 23.6% of the total male images), and nonviolent minorities were even more infrequent (only 5.5% of the total male images). In fact, nonviolent White males (25.6% of the total male images) were as common as all minority males.

Finally, results of exploratory analysis revealed that minority males were more than twice as likely as White males to be portrayed as athletic. Computer and technology use was almost exclusively limited to White males with White males being more than twice as likely as Black males to be depicted using technology. These data are possibly consistent with stereotypes about minorities, for example, that Black males are more athletic and less intelligent than Whites (Berkowitz, 2008). However, because these are exploratory data, we will be conservative when speculating on reasons for these patterns.

Conclusions

Research has shown that those exposed to false information in fictional stories are persuaded by it and that persuasion persists over time (Appel & Richter, 2007). Furthermore, Slusher and Anderson (1987) demonstrated that people fail to distinguish between stereotyped associations they imagine and those they have actually seen. The results of this content analysis of gaming magazines illustrates that there are consistent racial stereotypes in video game magazines and that representations of race do not match with reality. The problem with this is that the magazines may shape reality by being a source of social information to those who are exposed to them. In other words, after seeing negative racial stereotypes in video game magazines, players may experience failures in reality monitoring and may believe that they have had actual stereotype-confirming experiences. Furthermore, given what we know about the persuasive power of false information in fiction (Appel & Richter, 2007), it is likely that this information could alter gamers' thoughts, feelings, and behaviors.

STUDY 2

Study 1 illustrated that gaming magazines portray races differentially along stereotyped lines and that they do so specifically with regards to aggression. To learn more about video game portrayals of race, we designed Study 2 to investigate the portrayals of race on game covers. Most parents are relatively unaware of the actual content of the games (Walsh & Gentile, 2007), and it is likely that when confronted with the decision to rent or purchase a game, the cover will be the only information available. Additionally, game covers are easily available for viewing to almost everyone, regardless of age appropriateness, by virtue of being shelved with movies in both rental and retail stores. From the perspective of failed reality monitoring (Slusher & Anderson, 1987), this simple exposure is significant, even without the added cognitive investment of play time. Furthermore, past research (Dill & Thill, 2007) demonstrates that even non-gamers are aware of social stereotypes prevalent in video games. We began by addressing the same research questions about stereotypes as in Study 1, this time using game covers as the source of characterizations. Additionally, we expanded our investigation of race in video games to include game ratings, weapon type, and game genre. The addition of game genre specifically allowed us to examine the portrayal of aggression more closely. By examining multiple characters pictured in complex environmental representations, it was possible for us to make more judgments about the nature of the aggression. Given that Study 1 revealed minorities were more likely to be included in fighting whereas Whites were more likely to be portrayed as participating in socially sanctioned (military) violence, we wanted to explore these relationships further.

Method

Sampling strategy. We chose a sample of 149 games from the Burgess et al. (2007) sample of 225 games. This is the largest known sample of games studied from the perspective of character portrayals; the original sample contained all of the top 50 games for Xbox, PlayStation2, and Nintendo Gamecube in the summer of 2005. In the original sample, there were only seven women of color (one Black, six Asian, two of whom were represented solely by their eyes, and no Hispanic women). With only five whole females of color, it seems clear that the only conclusion one can draw about games' representations of minority women is one of marked absence. As such, we narrowed the sample of 225 games to a sample that excluded games without male humans or with characters so obscured as to make rating them impossible. The 149 games included here contained a representative sample of best-selling games from Xbox, GameCube, and PlayStation platforms, across the following ratings as determined by the Entertainment Software

Rating Board (ESRB; Entertainment Software Association [ESA], 2006): 39 E (everyone), 62 T (teen), and 47 M (mature).

Raters. One male (White graduate student) and one female (the first author) rated each image. If there was agreement, that response was recorded. If there was disagreement, a second male rated the image and his response was the one recorded. A total of 7,130 judgments were made, with 112 disagreements for an interrater reliability of .98.

Content Variables

We began by using the coding criteria from Study 1. In addition, we added game-related criteria and expanded the aggression category to include game genres and weaponry. These additions included:

- 1) Rating of the game: The ESRB letter designations of E, T, or M were provided on the cover. The rating was recorded in the data file and then blacked out on the cover to prevent the rating influencing judgments about the other variables.
- 2) Role of the characters: Were they primary (central to the action) or ancillary (secondary or irrelevant to the action)?
- 3) Position of the characters: Were they in the foreground or the background?
- 4) Game genre using the following categories: Genres included fantasy (any supernatural forces, such as flaming hands, or defense of a fantasy world such as *Star Wars*), war (fatigues or identifiable military conflicts such as D-Day), cops and special ops (designated by badges, cars, or title such as *Tom Clancy's Special Ops*), provoked (nonmilitary or uniformed response by regular people to a clear and present danger in the environment), illicit (person perpetrating nonmilitary violence without a clear and present danger; rather they are the clear and present danger), stereotyped (race specific, such as Asian martial artists or White cowboys). Together, war, cops or special ops, and provoked constitute a superordinate category of "socially sanctioned." This violence is either carried out by respected personnel in uniforms (e.g., military and police) or by citizens in defense of their immediate environment, even if those citizens are nonhuman (e.g., the elves and hobbits fighting to protect the ring in *The Lord of the Rings*). This is contrasted with the illicit category. By default, some types of violence do not fit these two categories (e.g., boxers fighting in a ring or martial artists sparring); subsequently the total number of aggressive acts will exceed socially sanctioned plus illicit.
- 5) Type of weapon using the following categories: Weapons included blades (e.g., swords and knives), sticks, hands, magic powers (e.g., supernatural forces such as flaming hands), guns (e.g., hand guns, rifles, and extreme guns characterized by their extreme size or extreme firepower).

Results

Frequency data for race were calculated for the categories of White, Black, Asian, and other. As there were only two Hispanic characters, this category was too small to conduct statistically meaningful comparisons, and they were combined with the other category. There were 156 humanoid (alien) characters, but they were not coded for anything beyond frequency (see Table 2).

Representation: frequency, position, character status, and game rating.

We first compared the 304 males by race to the racial distribution of the U.S. Census for Whites, Blacks, Asians, and others (including Hispanics). There was significant disparity between the frequency of minorities in games and in the U.S. population, $\chi^2(3, N = 304) = 22.54, p < .01$, Cramer's $V = .16$; Whites (77.6%) and Asians (5.3%) exceeded the expected proportions

TABLE 2 Character Portrayals as a Function of Race on Video Game Covers (%)

	White	Black	Asian	Other (incl. Hispanic)	χ^2/V	z/b
Frequency (N)	236	22	16	30		
Frequency (%)	77.6	7.2	5.3	9.9		
U.S. population (%)	66.9	12.8	4.3	17.1	22.54**/.16	
Gamers (%)	59	15	3	23	58.08**/.25	
Hypermasculine	30.5	54.5	31.3	30	ns	
Armor (out of aggressive)	38.9	4.5	0	76.2		ns
Aggressive—no	50	50	25	30		(-)2.142*/.15
Aggressive—yes	50	50	75	70		(-)2.142*/.15
Fantasy (out of aggressive)	42.4	9.1	12.5	14.3		3.42**/.33
War (out of aggressive)	14.4	0	0	30		ns
Cops (out of aggressive)	10.2	18.2	0	4.8		ns
Provoked (out of aggressive)	5.1	0	0	0		ns
Socially sanctioned (war/cops/self-defense out of aggressive)	29.6	16.6	0	37		ns
Illicit (out of aggressive)	5.1	45.5	0	22.2		(-)3.679**/.25
Weapon used (out of aggressive)						
Sword	21.2	0	33.3	3.7		ns
Small blade	5.1	0	0	0		ns
Stick	5.1	0	0	9.5		ns
Hands	20.3	45.5	66.6	18.5		2.66**/.23
Magic powers	3.4	0	8.3	3.7		ns
Whip	0.8	0	0	0		ns
Rifle	3.4	9.1	0	14.8		(-)1.97*/.14
Extreme gun	28.8	36.4	0	48.1		ns
Handgun	15.3	18.2	0	3.7		ns
Athlete	4.6	31.8	0	2.8		2.13*/.13
Athletic and/or violent	54.6	85.7	75	73.3	12.28**/.20	
Foreground position	65.1	50	37.5	36.7	13.61**/.21	
Background position	34.8	50	62.5	63.3	13.61**/.21	
Primary character (relative to census)	79.2	5.9	9.6	5.2	16.18**/.20	
Primary character (relative to gamers)	79.2	5.9	9.6	5.2	34.47**/.29	
Ancillary character (relative to census)	76.3	5.3	4.7	13.6	10.9*/.15*	
Ancillary character (relative to gamers)	54.6	40.9	4.6	74.2	27.32**/.23	
Solo primary character	47.7	15.4	0	25		3.2**/.38
Shared primary character	52.3	84.6	100	71.4		(-)3.2**/.37
Game rating					22.87**	
Game rating "E"	21.6	31.8	31.3	6.6		ns
Game rating "T"	51.3	18.2	50	43.3		2.11*/.15
Game rating "M"	27.1	45.4	18.7	50		(-)2.223*/.15

* $p < .05$, ** $p < .01$.

whereas Blacks (7.2%) and others (9.9%) were underrepresented. This same pattern was also observed when comparing to the known demographics of gamers (Walsh & Gentile, 2007), $\chi^2(3, N = 304) = 58.08, p < .01$, Cramer's $V = .25$. As in Study 1, minority characters occurred less frequently than humanoid (alien) characters ($N = 156$).

White characters (64.8%) were significantly more likely than Asians (37.5%), Blacks (50%), or others (36.7%) to be positioned in the foreground, $\chi^2(3, N = 303) = 13.61, p < .01$; Cramer's $V = .21$. Whereas this finding could suggest a relative lack of status for minority characters, it is confounded by whether or not the character is a primary or an ancillary character, as central positioning was a defining characteristic of primary characters.

Relative to both the U.S. Census (State and County Quick Facts, 2008), $\chi^2(3, N = 135) = 16.18, p < .01$, Cramer's $V = .20$, and gamer demographics (Walsh & Gentile, 2007), $\chi^2(3, N = 135) = 34.47, p < .01$, Cramer's $V = .29$, Whites (79.2%) and Asians (5.9%) were significantly more likely to be primary characters than Blacks (9.6%) and others (5.2%). Ancillary Black characters (5.3%) were significantly less likely to occur than White (76.3%) and Asian (4.7%) characters, relative to the U.S. Census (State and County Quick Facts, 2008), $\chi^2(3, N = 169) = 10.9, p < .05$, Cramer's $V = .15$, and gamer demographics, $\chi^2(3, N = 169) = 27.32, p < .01$, Cramer's $V = .23$.

To control for multiple primary characters in a given game, we analyzed whether sharing primary status was equally distributed across race, and found that White characters (47.7%) were significantly more likely than any minority characters (14.2%) to be the solo primary character on a cover ($z = 3.2, p < .01, b = .38$). Conversely, minority characters (85.7%) were significantly more likely to share their primary status with another primary character than any White primary character (52.3%; $z = 3.2, p < .01, b = .37$).

There was no difference of representation between Whites (21.6%) and minorities (27.9%) in games with an E rating ($z = -1.06, p > .05$). Whites (51.3%) were more likely than minorities (36.8%) to be represented in T games ($z = 2.11, p < .05, b = .15$), yet minorities (41.2%) were more likely than Whites (27.1%) to be represented in the most violent M games ($z = 2.22, p < .05, b = .15$).

Representation: hypermasculinity. Hypermasculinity did not differ across the races, $\chi^2(3, N = 304) = 5.41, p > .05$.

Aggression. In terms of general depictions of aggression, minority characters were more likely to be portrayed as aggressive (64.7%) than White characters (50%; $z = 2.14, p < .05, b = .15$).

Aggression: genre. White characters (42.4%) were significantly more likely to occur in a fantasy setting than the minority characters (14%; $z = 3.42, p < .01, b = .33$). For socially sanctioned violence, the difference between White aggression (29.6%) and minority aggression (27.7%) was not significant ($z = .30, p > .05$). We then compared socially sanctioned

violence to illicit violence in which minorities (25%) were more frequently represented in illicit violence than Whites (5.1%; $z = -3.68$, $p < .01$, $b = .26$). Whites were significantly more likely to be represented engaging in socially sanctioned forms of violence (74.4%) as compared to illicit violence (35.3%). The pattern was reversed for minorities; they were more likely to be portrayed as committing illicit violence (64%) as compared to socially sanctioned forms of violence (25.5%), $\chi^2(1, N = 64) = 6.7$, $p < .01$, Cramer's $V = .36$.

Aggression: weaponry. Most comparisons of weapon use did not differ by race (see Table 2). However, the use of hands as a weapon did differ between Whites (20.3%) and minorities (40.9%; $z = 2.66$, $p < .01$, $b = .23$). From a stereotyped perspective it is important to note that Asians engaged in martial arts constituted 44.4% of the minority use of hands.

Athletics. Portrayal as an athlete also differed significantly by race. Minorities (11.8%) were significantly more likely than Whites (4.6%) to be portrayed as athletes ($z = 2.13$, $p < .05$, $b = .13$). This difference was largely driven by the fact that Blacks were represented as athletes 32% of the time. Additionally, as in Study 1, when comparing the relative percentages of the various races portrayed as athletic or violent, there were significant differences, $\chi^2(3, N = 303) = 12.28$, $p < .01$, Cramer's $V = .20$. Whites were significantly underrepresented as athletic and/or violent relative to Blacks, Asians, and others, whereas all the minorities were significantly overrepresented as athletic and/or violent.

Discussion

The results of this content analysis were consistent with those found in Study 1, highlighting that video game characters, as represented in magazines or on covers, often portray minority characters through stereotypes such as the violent Black thug, the Asian martial artist, the Asian as model minority, and the Black athlete (Berkowitz, 2008; Devine, 1989).

These stereotype consistent findings for aggression were reinforced by the analysis of game genre, rating and character placement/centrality. Whites were more likely to engage in fantasy violence or in historic military conflict whereas minorities were rarely found in fantasy settings, and never in war. Alternatively, when looking at the violent genres in which minority characters were most likely to be found, a different lesson emerged. Minorities were more likely to be depicted as engaging in illicit than socially sanctioned aggression. The message communicated by this difference is clear: Whites are heroic fighters, fighting to save an often romanticized world (e.g., *Star Wars*, *Final Fantasy X*), or realistic war heroes saving nothing less than Western Civilization itself (e.g., *D-Day*, *Brothers in Arms*), whereas Black characters were too often the menace to society with oversized weapons and gang posturing (e.g., *GTA: San Andreas*, *25 to Life*), whereas the Asian

characters simply engage in martial arts, threatening no one but each other, and saving no one (e.g., *Shen-mue*, *Onimusha Blade Warriors*).

The findings of race as a function of game rating and character placement and centrality echo these concerns. The races were not equally distributed across the different ratings. Asian and Black characters were overrepresented in E games whereas Black and other characters were overrepresented in the M games. Whereas increased minority visibility on the more socially appropriate E games is encouraging, it is important to note that it was highly stereotyped. Of the seven Black characters appearing on an E game, five were athletes, one was a benign cartoonish persona, and one was a Black man pictured behind a White male and White female, leaning around to point to the White male in the center of the cover. For the Asian characters appearing on E games, the stereotypes were even more pronounced: Every E Asian character appeared on a single martial arts game.

At the same time, Black characters were overrepresented on M games. These games' sales are restricted to those 17 and over because of the extreme nature of the violence, and, occasionally, the sexuality depicted. The only Hispanic characters included were on the most notoriously violent M games (Barrett, 2006), *Grand Theft Auto: San Andreas* and *Fight Club*, another vicious, illicit fighting game. When the infrequent minorities did appear it was in consistently stereotyped settings or in games not intended for children.

In regard to social equality through representation, as illustrated by being the primary character, games rarely offered leadership roles to minority characters, outside of the "model" (Asian) minority. Black characters were significantly less likely to be portrayed as primary and even ancillary characters. When granted primary status, minority characters were significantly more likely to have to share it with another primary character as compared to the frequent, lone White primary character. It should be noted, also, that neither of the Hispanics were primary characters. When approximately 16% of the U.S. population and 23% of the market of video game consumers is Hispanic, this underrepresentation is curious.

In conclusion, these two content analyses together revealed that, although certainly not entirely absent, nor always negatively portrayed, images of minorities as found in gaming magazines and on game covers are consistent with a number of stereotypes. From the perspective of representation, minorities are less frequent than would be expected based on either the U.S. Census or gamer demographics. Minorities are rarely portrayed as primary characters, and when they are it is typically shared; they are more likely to appear both in games for children under 10 as well as games restricted to those over 17. They are more likely to be engaged in violence that is not socially sanctioned; they were never depicted in military service of their country. From a pedagogical perspective, games have a number of stereotypes to teach: Blacks are athletes or unprovoked social menaces with extreme weapons; Asians are martial artists; Hispanics are in short supply. White

men fight in fantasy realms or defend their country in heroic war settings. Alien characters outnumber minority males. Women of color are invisible.

STUDY 3

Given the results of the content analyses, we designed an experiment to examine the cognitive effects of racial depictions in video games. We asked whether these stereotyped portrayals would lead to stereotype-consistent decision making. We tested this using Payne's (2001) priming paradigm known as the weapons identification task. This research has demonstrated that priming college students with rapidly presented (200 ms) Black faces led to faster classification of a stimulus as violent. Further, simple awareness of the stereotype linking Blacks and violence increased the association between race and violence on the stimulus classification task.

We adjusted this paradigm to the real-world use of video games. Whereas past research with various media stimuli illustrates that priming racial stereotypes result in expected stereotyped decisions about and behavior toward minorities (e.g., Brown Givens & Monahan, 2005), a common belief about game content is that it is irrelevant: Even when college students agreed that portrayal of women in video games might be sexist and degrading, gamers were still adamant that it did not affect them in meaningful ways (Brenick, Henning, Killen, O'Connor, & Collins, 2007). This is common in media effects literature. As such, we designed this study to address specifically whether these game images would also prime stereotype consistent thoughts. We asked participants to watch video clips of games being played. Previous research (Stermer et al., 2006) has demonstrated that watching other gamers play is typical among gamers, giving this procedure ecological validity while controlling for player skill level and its associated complications (e.g., how far in the game they go, whether their character loses, how hard their character "works," etc.). We manipulated the race of the character in the game (Black vs. White), the violence of the game (violent or nonviolent) and the type of stimulus to classify (violent or nonviolent).

The primary hypothesis, that race would influence classification of violent stimuli, was addressed by the two-way interaction between race of character and type of stimulus. We predicted that classifications of violent stimuli would be affected such that watching games with Black characters would lead to faster classification of violent stimuli and slower classification of nonviolent stimuli than watching games with White characters.

Method

Participants. Thirty-nine college psychology students (26 females, 13 males) participated in exchange for partial completion of a course

requirement or extra credit. Thirty-four of the students were White, one was Black, two were Hispanic, one was from India, and one indicated multiple races. All students were treated in accordance with the American Psychological Association's guidelines for the ethical treatment of human participants.

Materials. Digital videos of four violent and three nonviolent games were created as stimulus materials by recording play for 30 seconds. The violent games were fighting games that ranged from one-on-one fighting with fantasy weapons to opposing gang members fighting each other (*The Bouncer*, *Raw vs. Smackdown 2006*, *Soul Caliber 3*, *Urban Reign*). The nonviolent games included individual sports games (e.g., skateboarding) and an interpersonal life-skills game (*The Sims 2*, *SSX 3*, *Tony Hawk Underground*). Violent stimuli for identification were photographs of various weapons (e.g., an axe and a sword). Nonviolent stimuli were photographs of various everyday objects (e.g., a cell phone and a camera).

Design and procedure. Study 3 employed a 2 (race of character; within subjects) \times 2 (violent or nonviolent game; within subjects) \times 2 (identification stimulus: violent or nonviolent; within subjects) \times 2 (sex of subject; between subjects) mixed design. After completing a consent form, each participant was seated at a laptop computer with the SuperLab response pad; the response pad had two keys clearly labeled as "violent" and "nonviolent." Participants read brief instructions on the structure of the experiment and how to operate the response pad. A practice session occurred following the instructions. A clip of a nonviolent game with a character of unidentifiable race was presented. Next, participants saw a prompt indicating that the stimulus to identify would appear in 3 seconds. The image appeared for 250 milliseconds and was immediately followed by a visual mask. Participants were to identify the stimulus as violent or nonviolent by pressing the appropriate key on their response pad during the 3 seconds the mask was in view. After responding, the participant was informed whether the response was within the allotted time. Two more presentations of violent or nonviolent images were presented and identified in the same manner.

Next, using the same basic format as the practice session, the experimental session began. The first half of the session involved the presentation of twelve 30-second video clips. Each clip was one randomly drawn of four possible conditions: a violent or a nonviolent game with either a White or Black character. At the conclusion of each clip, the participant was asked to classify three objects as violent or nonviolent.

Following a short break, the same 12 clips were randomly shown again, but with different images assigned to each clip. The instructions were the same for this portion of the experiment. Past research has indicated mixed relationships between implicit and explicit stereotyping (Lane et al., 2007). We wanted to provide more data to this literature examining the relationship between explicit and implicit measures of stereotyping. Since the Payne

methodology measures implicit stereotypes, we added a test of explicit stereotypes, the Modern Racism Scale (MRS; McConahay, Hardee, & Batts, 1981). After completing the MRS, the student was debriefed, thanked, and dismissed.

Results

Reaction times (RT) for correct responses between 100 and 1000 ms were used to calculate an average RT for each game race/game violence/identification stimulus combination for each of the 39 subjects (26 female and 13 male); the outlying scores below 100 ms or above 1000 ms were excluded because of the known distortion outliers can have on RT data (Payne, 2001). Two students had outlying scores; one (Black male) student had scores over 3 seconds on every single trial and one (White female) student had incorrect or outlying scores for every trial in the Black/nonviolent/violent condition. These two students were automatically excluded from the analysis by SPSS. The remaining students' (25 female, 12 males; 33 White, 1 Indian, 2 Hispanic, and 1 other) average RTs were submitted to a repeated measures analysis of variance (ANOVA). All scores are represented in milliseconds.

There was a significant between subjects effect for sex of subject, $F(1, 35) = 5.85$, $p < .05$, with males making faster identifications, on average, than females, $M_m = 377.16$ ms ($SD = 44.97$) versus $M_f = 509.5$ ms ($SD = 31.16$). Sex of subject did not interact with any of the within subject variables.

Identification stimulus was significant overall, $F(1, 35) = 11.5$, $p < .01$, with violent stimuli ($M_V = 426.33$, $SD = 26.8$) being classified faster than nonviolent stimuli ($M_{NV} = 460.32$, $SD = 28.8$). Violence of the video was not significant, $F(1, 35) = 2.79$, $p > .05$. The a priori Game Race \times Stimulus Violence interaction, $F(1, 35) = 5.063$, $p < .05$, was significant. The stereotype-consistent pairing of a Black game character with a violent stimulus was the fastest condition ($M_{B/V} = 412.84$ ms, $SD = 28.5$) as contrasted with the stereotype-inconsistent condition of a White game character and a violent stimulus ($M_{W/V} = 439.83$ ms, $SD = 25.9$). The nonviolent stimuli were identified slower, on average, when they were paired with the stereotype-inconsistent Black game characters ($M_{B/NV} = 463.66$ ms, $SD = 30.7$) as compared to the White game characters ($M_{W/NV} = 456.98$ ms, $SD = 27.8$).

Discussion

This experiment provides the first empirical test of how video game portrayals can influence race-related thinking. College students were faster to identify weapons after watching a video game with Black characters than they were watching a game with White characters. These results are significant for their refutation of the common assertion that exposure to (racial) game

imagery does not have an effect on those exposed, as is frequently decried by gaming enthusiasts (Brenick et al., 2007). Priming has been illustrated before with various other media and various other effects. For example, Dill, Brown, and colleagues (2008) showed that viewing game images resulted in college students rating sexual harassment as less serious than viewing images of professional men and women.

The observation that violence of game was not significant, nor did it interact with race of character or violence of stimulus to be categorized, leaves open several possibilities. It is consistent with the finding that physiological reactions to subsequent violent material do not increase after exposure to violent video games (Carnagey, Anderson, & Bushman, 2007). It may also reflect a type of cognitive prioritizing—with violence an expected characteristic of video games, the infrequent nature of Black characters in video games may have overridden any effect of game violence. These possibilities, as Dill (2009) illustrates, are not reasons to think violence of the game does not affect players or interact with race in ways unexplored; rather, this is an issue for further study.

The students did not express overtly racist tendencies as measured by the MRS, and yet, after viewing video games with Black characters, their behavior was certainly consistent with the negative stereotype associating Blacks with violence in the United States. In other words, whereas the explicit measure did not show differences in racial attitudes, the implicit measure showed that participants' reactions to characters who were Black differed from their reactions to characters who were White. The reaction time variable is relatively immune to intentional attempts by the participants to respond in a socially desirable manner (Neely, 1977), unlike the explicit attitudes as measured by the MRS.

This suggests an unconscious process is at work, which is consistent with Devine's (1998) research on implicit stereotyping. The fact that the students may not be aware of this unconscious reaction pattern in and of itself may be problematic. Additionally, the very notion that the stereotyped images might not be degrading or have a serious impact (Brenick et al., 2007) illustrates one of the demonstrated concerns with demeaning images in media: desensitization (Funk, 2005). The more frequently one views demeaning images of any group, the less disturbing and more normal the images may seem, and the less seriously we may feel compelled to take them, in spite of any demonstrated consequences of exposure.

There is a large body of work with implicit attitudes that illustrates bias can exist, and influence behavior, even when a person explicitly denies subscribing to that bias (e.g., Bargh & Chartrand, 1999; Bargh, Chen, & Burrows, 1996). One of the most relevant works in this literature was conducted by Dasgupta and Greenwald (2001). They exposed college students to both admired and disliked Black and White exemplars and measured their implicit and explicit racial attitudes immediately and 24 hours later.

The exposure to disliked Black and admirable White exemplars did not yield any differences in implicit attitudes when compared to a group of students exposed to racially neutral primes. This suggests that “normal” is the media portrayal of the disliked Black and the admirable White, especially when contrasted with their additional finding that exposure to admired Blacks and disliked Whites reduced automatic pro-White attitudes both immediately and in the longer term. This work, taken in conjunction with the findings of our two content analyses and experiment suggests two things. First, the depiction of dislikable Blacks, as frequently portrayed in video games, can have a stereotype-consistent impact on young adults’ cognitions. Second, given what a popular topic reducing prejudice has been for social psychology over the last few decades, Dasgupta and Greenwald’s (2001) work, and our results, together suggest that future research must examine the implied possibility that something as simple as increasing the frequency of admirable Black characters in games, and other media, could lead to significant reductions in automatic pro-White bias (and associated anti-Black bias).

GENERAL DISCUSSION

Video games, like any form of media, tell stories. The questions this paper addressed were twofold: What stories are we telling about minorities in video games—as presented on game covers, in gaming magazines, and in games themselves—and what are the consequences of exposure to those stories? We found that the stories told about minorities through games and gaming media are largely told by underrepresentation and overreliance on stereotypes. Cyberspace, according to our findings, is primarily a White male world populated peripherally by minority characters represented largely by racial stereotypes.

This article represents an important first step in the investigation of character portrayals in video games, an area of games that has historically been understudied. We have a comprehensive description of how minorities are portrayed in gaming magazines and on game covers, as well as an initial illustration of the impact these portrayals can have. Future studies need to continue this work and investigate the impact these images have on both minority and majority gamers. For example, do these types of games influence Whites’ views on affirmative action, immigration, the death penalty, and other racially charged topics; might these negative images elicit stereotype threat or other negative effects in minority gamers?

At this time in history, we are moving toward a more global and therefore more racially diverse society. In the U.S., minority populations, particularly Blacks and Hispanics, are growing. At the same time, American youth are increasing their media diets, and video games particularly are rising in popularity with children. Whereas schools are teaching children to tolerate

and even celebrate diversity, this research demonstrates that some forms of popular media are sending opposing signals with troubling effects.

NOTE

1. We understand that a preferred measure of interrater reliability is Cohen's Kappa. Due to a data storage error with Study 2, the only measure we can report is percent agreement. For consistency, we report this in the text for Study 1. The Kappas for Study 1 are as follows: race (.64), hypermasculinity (.97), aggression (.98), socially sanctioned (.96), fighting (.99), athlete (.43), and use of technology (.65).

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