

Chapter LIII

Gender and Racial Stereotypes in Popular Video Games

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ABSTRACT

While the violent content of video games has caused wide concern among scholars, gender, and racial stereotypes in video games are still an understudied area. The purpose of this chapter is to provide a better understanding of the stereotypical phenomenon in video games. The book chapter first provides a comprehensive review of previous studies conducted upon gender-role and racial portrayals in video games. Then a small-scale content analysis on a sample of official trailers, introductory sequences and covers of 19 of the most popular video games is introduced. Finally, the implications of stereotype in video games and the possible social and psychological impacts on players, especially adolescent players, are discussed.

INTRODUCTION

Video games have been one of the most popular entertainment media in the U.S. According to the Entertainment Software Association (2007), U.S. computer and video games software sales grew 6% to \$7.4 billion in 2006. The prevalent usage of video games among adolescents causes

growing concern (Child Development Institute, 2007; Gentile & Gentile, 2005). A recent NPD Group (2006) study reveals that 92% of children aged 2-17 play video games, and almost half of all “heavy gamers” are 6-to-17-years-old. Scholars have expressed broad concern about the possible impact of game playing on players, especially adolescent players, due to the inappropriate content

(such as the scenes of violence, a mass of blood and gores, etc.) in video games (Smith, Lachlan, & Tamborini, 2003). A large number of studies have been conducted upon the impact of the violent content on aggressive attitudes and behaviors (Anderson, 2004; Anderson & Bushman, 2001; Arriaga, Esteves, Cameiro, & Monteiro, 2006; Bartholomew, Sestir, & Davis, 2005; Gentile & Stone, 2005; Sherry, 2001). However, very limited research has examined the stereotypical content in video games and its possible impact on players. In this book chapter, we focus on the stereotypical content in video games. Specifically, we focus on gender and racial stereotypical content in video games. We first summarize previous research on the content of gender-role and racial portrayals in video games. Then we introduce a small-scale study on a sample of 19 of the most popular video games. Finally we discuss the implications of stereotyping in video games and the possible social and psychological impacts on players, especially adolescent players.

STEREOTYPICAL PORTRAYALS IN VIDEO GAMES

Stereotype

A stereotype is a mental “shorthand which helps to convey ideas and images quickly and clearly” (Courtney & Whipple, 1983, p. 205). It refers to one group’s generalized and widely accepted perception about the personal attributes of members of another group (Ashmore & Boca, 1981; Dates & Barlow, 1990). Stereotypes serve multiple purposes in a variety of cognitive and motivational processes (Hilton & von Hippel, 1996). They emerge as a way of simplifying the demands on the perceiver (Bodenhausen, Kramer, & Susser, 1994; Bodenhausen, Sheppard, & Kramer, 1994; Macrae, Milne, & Bodenhausen, 1994); or as a way in response to environmental factors, such as different social roles (Eagly, 1995), group conflicts

(Robinson, Keltner, Ward, & Ross, 1995), and difference in power (Fiske, 1993); or as a means of justifying the status quo (Jost & Banaji, 1994; Sidanius, 1993), or in response to a need for social identity (Hogg & Abrams, 1988).

In traditional media, gender and racial stereotypes are the most pervasive two. In mass media, compared to female characters, male characters appear more frequently, talk significantly more, and engage in noted behaviors more, such as achieving and showing leadership (Thompson & Zerbinos, 1995). In addition, these media provide distorted representation of women and minorities (Aubrey & Harrison, 2004; Greenberg & Baptista-Fernandez, 1980; Thompson & Zerbinos, 1995). Exposure to these distorted images can have a negative effect on users’ perception of women and minorities (Omi, 1989). For instance, women are usually perceived as subordinate and passive-dependent to men, with sexual relationships as central in life (Cantor, 1987). Racial stereotypes widely exist in mass media as well. For instance, Black men are more likely to be portrayed as criminals (Entman, 1992; Peffley, Shields, & Williams, 1996); Asian men are usually portrayed as culturally ignorant; while Asian women are portrayed as submissive (Park, Gabbadon, & Chernin, 2006).

Gender Stereotypes in Video Games

Dietz’s (1998) study was one of the earliest studies to examine stereotypical portrayals in video games. The content analyzed both the portrayal of women and violence in a sample of 33 most popular Nintendo and Sega Genesis video games. In order to evaluate the role of women, she generalized four possible female stereotypes based on appearances and behaviors: females as sex objects or prizes, females as victims, females in feminine roles, and females as heroes or action characters. Not surprisingly, Dietz (1998) found that 41% of the games were devoid of female characters. Only 15% (5 out of 33) portrayed women

as heroes or as action characters, while 21% (7 out of 33) portrayed women as victims or as so-called “damsel in distress”. At the same time, in 28% of these games, women were portrayed as sex objects based upon physical appearance or sexually-oriented actions.

Following the female as sex object perspective, Beasley and Standley (2002) particularly focused on the appearance of female characters, using clothing as an indicator of sexuality. They examined three categories of clothing: sleeve length, neckline, and lower body clothing. They also coded body cleavage and breast size of female characters. Beasley and Standley (2002) found a significant sex bias in female characters. Of the 597 characters coded, only 82 (13.74%) were women. A majority of the female characters wore clothing that exposed more skin than the male characters. To be specific, female characters were more likely to be in low-cut clothing and with bare arms than male characters, and about 41% of the female characters were big busted. In addition, there was no difference among different game ratings (i.e., “E” for ages 6 and older, “T” for ages 13 and older, or “M” for ages 17 and older), which means children could see voluptuous women images as frequently as adults do in video games.

A follow-up study by Downs and Smith (2005) demonstrated a similar result. They did a content analysis of 60 video games. Compared to male characters, females were more likely to be represented in a hypersexual way: being partially nude, featured with an unrealistic body image and shown wearing sexually revealing clothing and inappropriate attire. Similarly, Haninger and Thompson (2004) found that in the sample of 81 teen-rated video games, women were significantly more likely to be depicted partially nude than men. In addition, there were much more male playable characters (72 out of the 81 games) than female playable characters (42 out of the 81 games).

Early content analysis studies consistently found that female heroes or female action characters were absent in video games. However, recently

a new trend called “Lara phenomenon” emerges, which refers to “the appearance of a tough and competent female character in a dominant position” (Jansz & Martis, 2007, p.142). Jansz and Martis’ (2007) content analyzed the introductory sequence of 12 selective contemporary video games. Introductory sequence refers to a non-interactive introductory sequence for a computer or video game to create a cinematic atmosphere or to introduce the background story of the game before actual game playing starts. This dozen of console games were popular story-line games with diverse characters. Characters’ roles (e.g., villain or helper) and their position (e.g., dominant or submissive) were used as the principle categories in their content analysis. “Lara phenomenon” was observed: female characters in a leading role appeared as often as male did. However, these female characters were portrayed in a stereotypical way: female features were exaggerated by sexy attire and thin body.

Racial Stereotypes in Video Games

Compared to the research on gender stereotyping, even fewer studies have examined racial stereotyping in video games. One reason might be the conscious avoidance of specific race representations by the game producers. Oftentimes characters are created with vague or ambiguous ethnic characteristics. It is hard to tell the exact race of the characters. Nevertheless, the limited research sheds some light on the under representation and stereotypical portrayal of minority groups. Generally speaking, minority ethnic groups, such as Black and Hispanic, appear less frequently in video games.

A recent comprehensive research on the content of games (Brand, Knight, & Majewski, 2003) analyzed 130 computer and video games from five gaming platforms (PlayStation 2, Xbox, GameCube, Game Boy Advance, and PC). They examined the slick (the cover or box), the manual (or handbook), the introductory sequence, and

the first 10 minutes of game playing. Upon the analysis on the physical and object-oriented world, leading characters, style, and narrative, it was concluded that some of the stereotypes in traditional mainstream media were still used to portray game characters: most characters were either white or too vague to tell and 71% of the lead characters were male.

Dill and her colleagues (Dill, Gentile, Richter, & Dill, 2005) found similar results. They conducted content analysis on 10-to-30-minute game playing of the 20 top-selling PC games of 1999. Across the top 20 games, the characters were predominantly white male adults. Only 10% of the main characters could be recognized as female. Sixty-eight percent of the main characters and 72% of the secondary characters were white. Downs and Smith (2005) found a slight higher rate of presence of minority characters. According to their study, 21% were Black, 7% were Asian, and 3% were Hispanic.

No previous study has found that a minority was more likely to be portrayed negatively. In fact, Lachlan, Smith, and Tamborini (2005) indicated that most violent perpetrators were Caucasian (40.5%), with Asian/Pacific Islander (8%) coming in a distant second and most others being unidentifiable.

A SMALL-SCALE CONTENT ANALYSIS STUDY

In this book chapter, we report a small scale study on gender and racial stereotypes using game trailers, introductory sequences, and game covers. Trailers, introductory sequences and game covers rather than recorded on-screen playing clips were chosen as the sample of content analysis for the following reasons. First, the game trailers are representative game playing of skilled game players. Recorded game playing by a player can only cover one small portion of the whole game, either at the beginning, or in the middle, or at

the end of a game. A trailer can provide many purposely selected vignettes of game playing from the whole game. Compared to the recorded clips of game playing, a trailer contains more comprehensive information of a game. Second, the recorded playing clip of one game player is very much biased by this specific player as different players with different attributes may play video games differently (Peng, Liu, & Mou, in press). Therefore, the trailer and the game cover will be a more typical representation of the game than a particular individual's playing clip. Third, game trailers, introductory sequences, and covers are used as effective advertising media for video games. Previous research indicates that trailers are useful in helping audience make purchase decisions (Hixson, 2006). It is of great interest to reveal whether the images and behaviors the game producers intentionally include in the trailers, introductory sequences, and covers are stereotypical. We investigated the following research questions:

RQ1: Are female characters underrepresented in popular video games?

RQ2: Are female characters portrayed in stereotypes in popular video games?

RQ3: Are minority characters underrepresented in popular video games?

RQ4: Are minority characters portrayed in stereotypes in popular video games?

Game Sample

Two criteria were used for the selection of the video games in analysis. First, the total sold copies of the game in the United States market should be over one million. Second, the game should be ranked within the top 20 most popular games based on experts' recommendation and players' response. Both criteria must be met. The top 20 video games (including Sony's PlayStation 2, Microsoft's Xbox, and Nintendo's GameCube) were selected from the top 100 games in the 21st century (Campbell &

Keiser, 2006). Nineteen out of all these 20 games sold over one million copies. Therefore, these 19 games were selected as the popular video games in our analysis. A complete list of the games in analysis can be found in Table 1.

Unit of Analysis

Two units of analysis were used in this study: game segment and game character. Game segments include official trailers, introductory sequences (if applicable), and game covers. The complete coding scheme can be found in the Appendix. Two basic variables coded for game segments were game content and game type. The game content indicated whether there were characters in the game or not; if so, whether there were female characters in it or not. The game type includes: sports game, role playing game, adventure game, action (shooting, fighting) game, strategy game, simulation game, driving game, puzzle game, board game, and kid's game.

A game character is defined as a human, an animal, or an object within a video game that displays human-like appearance or qualities such as speaking, using tools, or making conscious decisions (Beasley & Standley, 2002). According to Downs and Smith (2005), characters can be divided into three categories: primary, secondary, and background characters. The primary character is actively manipulated and controlled onscreen all the time by the game player. The secondary character is immediately tied to or related to the primary character by either aiding or deterring the primary character from fulfilling their quest, but is not controlled by the game player. All other characters belong to background characters. Not all characters receive equal attention. Generally speaking, primary characters and secondary characters receive the most attention from video game players (Downs & Smith, 2005). Only primary and secondary characters were coded in the study.

Eight variables were used to code the game character. The first game character variable was the type of the character. It was coded as human, animal, supernatural creature, robot, anthropomorphized animal, anthropomorphized supernatural creature, and other. The second variable was sex, coded only for human character and anthropomorphized supernatural creature. Physical appearance, behavioral patterns, and voice intonation or cues were all used to make the judgment. The third one was race, coded only for human characters. Its categories were derived from the U.S. census, including White, Hispanic, Black, Native American, Asian/Pacific Islander, Middle Eastern, Mixed, and Unidentifiable. Race was coded based on the description of the characters from the official Web site of the game developer and the character's appearance (such as skin color, hair color, and eye color), accent, and family name.

The fourth variable was the position of the character. Following Jansz and Martis' (2007) study, the position of a character was coded as leading role, opponent, and supporting role. The fifth variable is the role of the character, which was coded as hero, villain, rescued, and helper. The sixth variable is the character's occupation, if applicable.

For human characters only, the attire and the body were also coded. The attire refers to "any garment that is worn in order to enhance, exaggerate, call attention to, or accentuate the curves or angles of any part of the body (from the neck to above the knee) and which by design, or the amount of exposed skin a character shows, would arouse interest of physical intimacy from others" (Downs & Smith, 2005, p. 7). It was coded as unrevealing, partially revealing, nudity (revealing), or not applicable (Downs & Smith, 2005). For body, it was coded as heavy, normal, thin, or not applicable (Jansz & Martis, 2007).

Coder Training and Reliability

Two coders (one author included) received training prior to coding the sample. About 20% of the sample (four games) was used to test reliability. The coder did not begin assessing the rest of sampled segments until reliability reached at least .80 for every variable. Cohen's Kappa was used to calculate the intercoder reliability. For most of the variables, the reliability reached 1.000, except for the body variable (.876).

Results

Of the 19 games from the top 20 most popular games, five games (26.3%) were adventure games; five (26.3%) were action games; four (21.1%) were driving games; three (15.8%) were sports games; and two (10.5%) were role-playing games. Two out of the 19 (10.5%) had no characters at all and both of them were driving games. Eleven out of the 19 (57.9%) had both male and female characters; while 6 out of the 19 (31.6%) had no female characters at all. One third of the "E" and "T" rated games did not include female characters. Most of those games without females were sports, adventure, or action games.

Game Characters in Official Trailers

Each of these 19 games had an official trailer. Among the total 70 human characters identified in the 19 game trailers, 19 were leading characters, 21 were opponents, and 30 were supporting characters. Most of the leading characters (95%) were heroes, with one as a gangster. All leading characters were males. There was no leading female character across the sample. Seventy-four percent of the leading characters were White, with only four Black leading characters from a basketball game. There was no leading character in other races. All of the 21 opponents were villains. No female characters were portrayed as opponents. In terms of race, 14.3% of the opponents were

Hispanic, 4.8% were Black, 76.2% were White, and 4.7% were unidentifiable. Half of the minority characters (50.0%) were portrayed as villains, while less than one third of the White characters (30.9%) were portrayed as villains. The distribution of the white and minority characters in different positions and roles can be found in Table 2. However, Chi-squares showed that there was no significant difference between the role representation of the white and the minority characters in the hero category, $\chi^2(1, n = 22) = .132, p = .716$; or in the villain category, $\chi^2(1, n = 21) = 1.145, p = .285$. In addition, there was no significant difference between the positions of the white and the minority characters for the leading position, $\chi^2(1, n = 19) = .469, p = .493$, or for the opponent position, $\chi^2(1, n = 20) = .327, p = .567$.

Characters in a supporting role revealed a more diverse situation. Among these 30 human supporting characters, five were heroes; one was a villain; seven were the rescued; and 17 were helpers. Females appeared frequently in this category: more than one third of the supporting characters (43.3%) were female. The distribution of male and female characters in different positions and roles can be found in Table 3. Chi square analysis revealed that females were more likely to be in the supporting role position than males: $\chi^2(1, n = 29) = 10.319, p = .001$. In addition, female characters were more likely to be portrayed as the rescued, $\chi^2(1, n = 7) = 13.205, p < .001$, and helpers, $\chi^2(1, n = 17) = 9.394, p = .002$ than male characters. In terms of race, only one supporting character was Black; the others were all White.

Among all the female characters in the trailers, over half of them (58.3%) appeared unrealistically thin, and 25.0% wore partially revealing clothing. However, all but one male character in the trailers appeared with partially revealing attire, and most of them had a normal or heavy body. The distribution of the appearance of male and female characters is listed in Table 4. A one-way Chi-square yielded a significant difference between male and female in partially revealing clothes:

$\chi^2(1, n = 4) = 8.594, p = .003$. In addition, a one-way Chi-square yielded a significant difference between male and female in thinness: $\chi^2(1, n = 11) = 15.109, p < .001$. Females were more likely to appear with partially revealing clothes and unnaturally thin than males.

Game Characters in Introductory Sequences

Considering the content of the games, only 14 games included an introductory sequence. Therefore, only 34 human characters were identified and coded. The distribution of white and minority characters in different roles and positions is listed in Table 2. Among them, 15 were leading characters, four were opponents, and 15 were supporting characters. Most (93.8%) of the leading characters were heroes, with one as a gangster. All of the leading characters were male. Most of them were White; with an exception of four Black leading characters from a basketball game. A one-way Chi-square showed that there was no significant difference in the representation of white and minority characters in the leading position: $\chi^2(1, n = 14) = 2.813, p = .093$. Neither was there significant racial difference for characters portrayed as heroes, $\chi^2(1, n = 14) = 2.813, p = .093$.

All of the four opponents were villains. No female characters were portrayed as opponents. All opponents with identifiable race were white. Similar to characters in supporting role in trailers, characters in this category in introductory sequences also demonstrated a more diverse situation. Among these 15 supporting characters, two were heroes; one was a villain; two were the rescued; and 10 were helpers. All of the supporting characters were white. Nearly half of the characters in the supporting role position (40.0%) were females. A one-way Chi square indicated that females were more likely to be in the supporting role position than males: $\chi^2(1, n = 15) = 5.157, p = .023$.

Most of the female characters (83.3%) appeared unrealistically thin, and one third with partially revealing attire. On the contrary, no male character appeared with partially revealing clothing, and most of them were of normal or heavy size. A one-way Chi-square showed a significant difference between males and females in thinness, $\chi^2(1, n = 7) = 13.932, p < .001$. It indicated that females were more likely to appear in thin bodies than males.

Game Characters on Covers

In total, there were 26 human characters on the covers of the 19 games; 22 (84.6%) were males, while only four (15.4%) were females. The only four female characters appearing on the game covers were all unrealistically thin, and half of them wearing partially revealing attire such as bathing suits. The distribution of the appearance of male and female characters is listed in Table 4. In contrast, all male characters appeared with unrevealing attire, and most of their bodies were in normal shape. A one-way Chi-square showed a significant difference between males and females in thinness on covers, $\chi^2(1, n = 9) = 5.838, p = .016$. In addition, among those human characters, a majority (84%) of them were White, while 4% were Hispanic and 12% are Black.

DISCUSSION AND IMPLICATION

Based on previous research and the small-scale study we report in this book chapter, it is clear that gender was portrayed in an unequal way. Male characters, especially White male characters predominate in video games. In particular, most of the leading characters and heroes are White male. There is almost no female or minority character in leading role in popular video games. The only exception is the Black leading characters in a sports game. Even though the proportion of female characters appearing in video games is increasing,

female characters appear in stereotypical roles. Female characters are predominately supporting characters, who are either to be rescued or assistants to the leading male character. Female characters are also never portrayed as opposing characters, which in most of the cases are villains. The portrayal of female characters is consistent with the stereotypical mass media female characters. The attire and body image of the female characters are often very sexy, with revealing attire and unnatural body (either very thin or very voluptuous). Yet male characters are portrayed in normal or masculinized way. Minority characters are underrepresented in video games. Consistent with previous studies (Lachlan et al., 2005), our content analysis did not find racially stereotypical portrayals. There was no significant difference between the portrayal of white and minority characters as villains, though the leading hero characters are more likely to be white male.

The content analysis revealed underrepresentation and stereotypical portrayals of certain groups in video games. What are the implications of these results for educators, researchers, and the game industry? The representation and portrayal of female and minority characters might have significant impact on the players, especially adolescent players who are in the developing stage to form their self-identity, self-image, gender role perception, as well as their expectation of and attitude toward the other gender and other racial groups. During adolescence, most boys and girls explore possible identity directly and vicariously. Unique fashion statements, activities, and even introspection are some direct means for identity exploration and identity formation. Vicariously, adolescents explore and develop identity through identification with role models (Erikson, 1968). Media figures are a particular type of role model. Previous studies have shown that media figures from TV programs and films have great influence on adolescent (Giles & Maltby, 2004). As a special type of media figure, game characters might also influence adolescent. As it is found

that stereotypical gender roles are prevalent in games, it is very likely that this stereotype will influence how adolescent form their own identity and attitudes toward the opposite gender. Boys might expect women to be unnaturally thin and sexy to be attractive. The weak, supporting role of females also instill the message that women are weaker and need help from men.

Recently, video games have been advocated by a number of educators and researchers to be a powerful educational tool (Gee, 2007; Van Eck, 2006). As a number of learning principles are hard to find in today's education systems but are evident in some good commercial games, researchers propose to use these games in the classroom for more effective instruction. Even though researchers and educators take precautions about the violent content present in those games, stereotyping in those games is not considered as a serious issue when applying those games in the classroom. This study, together with previous findings on stereotypical content in video games, demonstrates the underrepresentation of female and minority characters and stereotypical portrayal of female characters in video games. Therefore, when popular commercial video games are to be used in the classroom, researchers and educators need to consider the potential impact due to the prevalence of stereotyping.

In the game industry, only 16% of the workforce is female (Haines, 2004). The predominance of male characters in the video games also raises the concern that video games are made by males and made for males. Boys get to choose a male leading character to play in almost all the video games yet girls hardly can find a female leading character as an avatar to represent themselves in the game, which might make girls lose interest in video games in the first place. Research has indicated that playing video games also has potential positive effects in cognitive and social developments for adolescents (Durkin, 2006; Gee, 2007; Lee & Peng, 2006; Lieberman, 2006). Furthermore, researchers believe that gaming opens

Table 1. List of video games in analysis

Title	Rating	Type	Platforms
<i>Grand Theft Auto: Vice City</i>	M	Adventure	PS2
<i>Halo 2</i>	M	Action	Xbox
<i>Gran Turismo 3: A-Spec</i> *	E	Driving	PS2
<i>Madden NFL 2004</i> *	E	Sports	PS2
<i>Super Smash Bros: Melee</i>	T	Action	Gamecube
<i>Need for Speed: Underground</i> *	E	Driving	PS2
<i>Kingdom Hearts II</i>	E	Role Playing	PS2
<i>ATV Off Road Fury III</i> *	E	Driving	PS2
<i>Medal of Honor: Frontline</i>	T	Action	Gamecube
<i>Super Mario Sunshine</i>	E	Action	Gamecube
<i>Tom Clancy's Splinter Cell: Chaos Theory</i>	M	Adventure	Xbox
<i>Final Fantasy X</i>	T	Role Playing	PS2
<i>Mario Kart: Double Dash</i>	E	Driving	Gamecube
<i>The Legend of Zelda: The Wind Waker</i>	E	Adventure	Gamecube
<i>Tony Hawk's Pro Skater 3</i>	T	Sports	PS2
<i>Spider-man: The Movie</i>	E	Action	Gamecube
<i>Metal Gear Solid 2: Sons of Liberty</i>	M	Adventure	PS2
<i>NBA Street</i> *	E	Sports	PS2
<i>Jak & Daxter</i>	T	Adventure	PS2

Note: Those games with asterisk (*) do not have introductory cinematic sequences.

Table 2. The distribution of the white and minority characters in different positions and roles in official trailers and introductory sequences

Content	Race	Position	Hero	Villain	Rescued	Helper
Trailer	White	Leading	13	1	0	0
		Opponent	0	16	0	0
		Supporting	4	0	7	14
	Minority	Leading	4	0	0	1
		Opponent	0	4	0	0
		Supporting	0	1	0	0
Intro	White	Leading	9	1	0	0
		Opponent	0	4	0	0
		Supporting	1	1	2	8
	Minority	Leading	4	0	0	0
		Opponent	0	0	0	0
		Supporting	0	0	0	0

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Table 3. The distribution of male and female characters in different positions and roles in official trailers and introductory sequences

Content	Sex	Position	Hero	Villain	Rescued	Helper
Trailer	Male	Leading	18	1	0	0
		Opponent	0	21	0	0
		Supporting	5	1	2	9
	Female	Leading	0	0	0	0
		Opponent	0	0	0	0
		Supporting	0	0	5	8
Intro	Male	Leading	14	1	0	0
		Opponent	0	4	0	0
		Supporting	1	1	0	7
	Female	Leading	0	0	0	0
		Opponent	0	0	0	0
		Supporting	1	0	2	3

Table 4. The distribution of the appearance of male and female characters in official trailers, introductory sequences and covers

Content	Sex	Unrevealing	Partially	Nudity	Heavy	Normal	Thin
Trailer	Male	54	1	0	8	45	4
	Female	9	3	0	2	3	7
Intro-	Male	26	0	0	5	21	2
	Female	4	2	0	1	0	5
Cover	Male	22	0	0	2	15	5
	Female	2	2	0	0	0	4

a door to computer literacy leading to potential technology careers (Cassell & Jenkins, 1998). The disproportionate gender representation and the gender role stereotyping of game characters might be the reason why girls dislike video games and fewer girls than boys play video games (Hartmann & Klimmt, 2006). As girls do not get as much exposure to computing and gaming in their adolescent years, this might influence their attitudes toward computing. As a result, as they grow older, girls are reluctant to choose computer and technology class and this will eventually influence their career choices. The game industry and game designers need to consciously consider the

disparity and take responsibility to decrease the gap of gender and race representation.

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KEY TERMS

Coder Reliability: The reliability to measure the correspondence between two or more coders' estimates of the same content.

Coding Scheme: The coding manual to mark the coding unit by choosing the manifest content which best demonstrate whether the material contains or does not contain the latent content to the research (Shaw, 2006).

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Content Analysis: “A technique used to extract desired information from a body of material (usually verbal) by systematically and objectively identifying specified characteristics of the material” (Smith, 2000, p. 314).

Gender Stereotype: A widely accepted perception or belief about the attributes of males or females.

Introductory Sequence: A non-interactive introductory sequence for a computer or video game to create cinematic atmosphere. Usually appears before actual game playing to introduce the background story.

Lara Phenomenon: “The appearance of a tough and competent female character in a dominant position” (Jansz & Martis, 2007, p.142).

Racial Stereotype: A widely accepted perception or belief about the attributes of a particular race, especially minority groups.

Stereotype: A widely accepted perception or belief about the attributes of the members in a group.

Unit of Analysis: The basic unit that is being analyzed in the study.

APPENDIX: CODING SCHEME

Game segment

1. Game content

- a. Games with no characters
- b. Games with characters but no human characters
- c. Games with human characters but no female characters at all
- d. Games with both male and female character

2. Game type

- a. Sports
- b. Role playing
- c. Adventure
- d. Action
 - Shooting
 - Fighting
- e. Strategy
- f. Simulation
- g. Driving
- h. Puzzle
- i. Board game
- j. Kid's game

Game character

1. Type of character:

- a. Human: A homosapien with no supernatural features.
- b. Animal: A live action or animated mammal, reptile, bird, fish, amphibian, or shark.
- c. Supernatural creature: A non-human that exceeds biological limits and/or possesses supernatural powers.
- d. Robot: An electro-mechanical or bio-mechanical device or group of devices that can perform autonomous or preprogrammed tasks.
- e. Anthropomorphized animal: An animal with human-like characteristics.
e.g., Mermaid and Donald Duck.
- f. Anthropomorphized supernatural creature: A super creature with human-like characteristics.
- g. Other.

2. Sex:

In most cases, it is easy to assess sex for human characters. For anthropomorphized characters or supernatural characters, it may be difficult to determine sex. Physical appearance, behavioral patterns,

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and voice intonation or cues should be all used to make the judgment.

- a. Male
- b. Female
- c. Cannot tell

3. Race (only applicable to human characters):

Race was coded based on the description of the characters from the official Web site of the game developer and the character's appearance (such as skin color, hair color, and eye color), accent, and family name.

- a. White
- b. Hispanic
- c. Black
- d. Native American
- e. Asian/Pacific Islander
- f. Middle Eastern
- g. Mixed
- h. Unidentifiable

4. Position

- a. Leading role
- b. Opponent
- c. Supporting role

5. Role

- a. Hero
- b. Villain
- c. Rescued
- d. Helper

6. Occupation

Code the character's profession or job, such as policeman, sports player, etc.

7. Attire

- a. Unrevealing
- b. Partially revealing
- c. Nudity (revealing)
- d. Not applicable

8. Body

- a. Heavy
- b. Normal
- c. Thin
- d. Not applicable