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Sexy, Strong, and Secondary: A Content Analysis of Female Characters in Video Games across 31 Years

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We analyzed in-game content from titles released between 1983 and 2014 (n = 571) featuring playable female characters. Results indicate that sexualization has diminished since an observed height in the 1990s. Traditionally male-oriented genres (e.g. fighting) have more sexualized characters than role-playing games. Games rated Teen or Mature did not differ in sexualization and featured more sexualization than Everyone games. Despite an increase in games featuring playable female characters, games still depict female characters more often in secondary roles and sexualized them more than primary characters. A positive relationship emerged between the sexualization of female characters and their physical capability. Critical success of games was unrelated to sexualization. We discuss these findings in light of social identity and objectification theories.

Keywords: Video Games, Content Analysis, Gender, Sexualization, Sex, Social Identity Theory, Objectification Theory.

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Video games are a popular source of entertainment for girls and boys; men and women (ESA, 2014). However, women comprised only 22% of employees in the video game industry in 2014 (IGDA, 2014). The dearth of female employees alongside scholarly findings of sexist encounters in online game spaces (Fox & Tang, 2014) support the popular notion that video games are a masculine activity (Selwyn, 2007). Recently, however, a number of incidents have signaled challenges to that purportedly masculine culture. In 2010, an outcry against sexism fueled a debate about the nature of gaming culture at the Penny Arcade Expo when a video game webcomic introduced slave-raping creatures called Dickwolves (Salter & Blodgett, 2012). More recently, a social movement on Twitter emerged under #1reasonwhy that challenged industry professionals to share anecdotes of sexism encountered in the workplace (Isaacson, 2012). Their experiences suggest that studios value women's voices less

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in game development and that this partiality may manifest in the design of female characters. Indeed, scholars have found that video games feature female characters less frequently than male (Braun & Giroux, 1989; Dietz, 1998) and that portrayals of sexualized females abound (Dietz, 1998; Downs & Smith, 2010).

Although the culture associated with video gaming seems to be shifting, understanding and situating these changes in a broader perspective of gender inequality is just beginning. Thus, the time is ripe to examine the nature of female representations in games across time to determine whether the development of content follows any meaningful trends of sexualization in response to societal pressure or changes within the demographics of the industry.

Sexism in real and virtual video game environments

Video game technology in the United States emerged in the 1950s and 1960s in close connection to the burgeoning U.S. computer industry (Izushi & Aoyama, 2006). The development of *Spacewar!* at the Massachusetts Institute of Technology in 1962 encouraged several spin-off games and inspired the design of the first commercially available coin-operated video game, *Computer Space*, in 1971. A full-fledged industry emerged 6 months later with the release of the first home video game console, the Magnavox Odyssey. The computer industry at this time employed women in jobs that required limited technical skills, provided low-paying salaries, and presented limited upward mobility compared to their male colleagues (Haigh, 2010). Early on, this gender discrimination stifled women's participation and fueled a persistent gender gap in technological fields (Haigh, 2010).

The U.S. video game industry inherited the gender disparity within computer science and software fields with women occupying limited roles in these fields. Data on the gender demographics of the video game industry in the 1980s are scant, but popular press reports suggest that female developers only represented 3% of the workforce in 1989 (Graser, 2013). This disproportionate representation underscores records of women in computer science fields through the 1980s and 1990s. As Cassell (2002) notes, despite tremendous growth in computer fields around that time, women represented approximately 30% of the employed workforce and remained concentrated in low-paying, low-ranking positions. Perpetuating the disproportion, women in the late 1990s and into the 2000s remained underrepresented in higher-education computer science programs at the undergraduate, graduate, and faculty levels (Cassell, 2002).

The issue of institutionalized sexism is not new; it exists in many professional arenas. Early observations of female professionals in male-dominated environments indicated that women align their behavior with either normative gender standards or masculinized norms to succeed in unwelcoming settings (Kanter, 1977). Similar patterns exist within the video game industry when female professionals encounter unsupportive environments (Consalvo, 2008). In the film industry, scholars have linked the lack of female input during creative development to negative portrayals of female characters (Smith, Choueiti, & Pieper, 2014)—a relationship likely echoed

in the game industry. Indeed, the ample bust of the original *Tomb Raider's* Lara Croft in 1996 originated as an office joke that was encouraged, and remained her most recognizable feature for years (Brown, 2008). As Williams (2006) notes, the preponderance of men in the game industry leads to a culture in which the male perspective is the only one. Furthermore, online games in which women might connect and foster their mutual interest have served as deterrents due to gender harassment (Fox & Tang, 2014; Kuznekoff & Rose, 2012).

Despite the contemporary perception of video games as a male-oriented activity\break (Selwyn, 2007), early marketers of video games did not draw this distinction. Rather, advertising for the Magnavox Odyssey in the 1970s promoted the notion that individuals of all ages and genders could enjoy the hobby (Williams, 2006). However, a wealth of scholarship indicates that socialization of girls has done little to promote their engagement with technology as a leisure activity or later in life as a professional aspiration (cf. Cassell, 2002; Williams, 2006). Cassell (2002) discussed the systematic socialization of women away from technology in which caregivers describe boys as having intuitive capability and inclination toward computers whereas girls must work hard to master the skills needed to operate the machines. Williams (2006) noted the acceptance of boys using games and computers in recreation whereas caregivers discouraged girls. This difference in the framing of computer technology persists into adulthood and, as Cassell (2002) described, the development of fun, game-type software for boys and serious, learning-focused software for girls reflects that difference. The maintenance of computers as leisure for boys and work for girls discourages self-selective engagement with the technology. Further, the deterrence produces a self-perpetuating cycle in which "girls who do not play become women who do not use computing technology … and certainly do not aspire to make games" (Williams, 2006, p. 16).

One component of this cycle is the propagation of sexualized female characters and its effect on women's perceptions of video games. Experimental evidence indicates that sexualized portrayals of female characters in video games may discourage women from taking up gameplay. Hartmann and Klimmt (2006) found that female participants consistently chose games featuring a nonsexualized rather than a sexualized female protagonist and expressed more interest in playing as the nonsexualized character. Similarly, Reinecke, Trepte, and Behr (2007) found that women preferred female characters but disliked hypersexualized female avatars. These findings are important for two reasons. First, women express a dislike of video games because the content seems generally intended for heterosexual males. Second, adding female characters as sexual objects marginalizes these characters in a way that women may view as derogating their ingroup.

Social identity theory (SIT; Tajfel, 1978) provides an explanatory framework for the connection between portrayals of female characters and the attitudes of women toward video games. Group memberships form based on perceived similarity between the self and others. Individuals desire to see their groups cast in positive roles in media (Hornsey, 2008) because such portrayals foster a positive self-concept

(Tajfel, 1978). In this way, media can convey information about a group's standing in relation to others (i.e., outgroups; Mastro, 2003). Securing and maintaining positive self-concept by observing ingroup members in media is a motivating force behind many behaviors—including selective exposure to media. Thus, when women see repeated negative depictions of female characters in video games they may avoid the medium entirely and become part of the self-perpetuating cycle as Williams (2006) described.

Portrayals of female characters in video games

Only a small number of female characters appeared in 1980s video games and these characters primarily assumed gender-stereotyped roles (Braun & Giroux, 1989). Despite the increase in video game production throughout the early 1990s, female characters remained underrepresented and sexually objectified (Dietz, 1998). In their analysis of 60 top-selling games from 2003, Downs and Smith (2010) found that, in comparison to male characters, games more frequently showed females in clothing that left them partially nude and inappropriately dressed for performed tasks. In their examination of introductory films from videos games, Jansz and Martis (2007) observed that a majority of the female characters had prominent breasts, emphasized buttocks, and provocative clothes. Female characters in video games may often appear scantily clad and idealized, but they are not necessarily incompetent or subservient to their male counterparts (Jansz & Martis, 2007; Schleiner, 2001). These conclusions suggest prosocial and advantageous representations of some female characters. However, experimental findings indicate that sexualization of female characters deters women even if the depictions are otherwise egalitarian (Hartmann & Klimmt, 2006) and other scholars criticize the pairing of such attributes with sexualization. Grimes' (2003) reading of female protagonists in the narrative cinematics and gameplay of three action–adventure video games explored how contemporary games construct the ideal female hero. Grimes noted that aside from their sexualized appearance, these female heroes embody characteristics (e.g., intelligence, toughness) appropriated from masculine gender norms. However, assuming a masculine role does not diminish the male gaze at work in *Tomb Raider* (Schleiner, 2001) and other games. The male gaze is conceptually the same as an objectifying gaze (Fredrickson & Roberts, 1997) in which media emphasize women's bodies. This trend is noteworthy, as research has linked objectification to harmful cognitive outcomes in women (e.g., decreased math performance; Gervais, Vescio, & Allen, 2011).

Many game narratives evoke common themes or character archetypes to connote meaning, but these depictions can cause harm when they derive from sexist underpinnings. Two harmful themes are benevolent sexism, which stems from protective notions of women as delicate or fragile, and hostile sexism, which stems from notions of women seeking to control men often through sex (Glick & Fiske, 2001). These sexist themes can develop into harmful stereotypes that manifest in video game content as Dietz (1998) observed. Indeed, during a time when competent, though sexualized, Lara Croft was popular among players scholars discovered that 30% of games featured

females as damsels in distress or sex objects (Dietz, 1998). More recently, analyses have found that contemporary video games predominantly feature male protagonists and sexualized female characters (Glaubke, Miller, Parker, & Espejo, 2001; Williams, Martins, Consalvo, & Ivory, 2009). From the limited vantage of prior content analyses of female characters and in consideration of the gradual growth of women into the game industry, we pose our first research question:

RQ1: Does the sexualization of playable female characters change over time?

The general perception is that playing video games is a male-oriented activity (Selwyn, 2007) but evidences from the professional industry (ESA, 2014) and empirical reports (Royse, Lee, Undrahbuyan, Hopson, & Consalvo, 2007) reveal this is not the case. Rather, it seems genre plays an important role in guiding women's playing decisions. For instance, Williams, Consalvo, Caplan, and Yee (2009) found that women play games of the role-playing genre most frequently. Martins, Williams, Harrison, and Ratan (2009) discovered differences in the body presentations of female characters along the lines of genre and ESRB rating (i.e., the ESA game rating system for age appropriateness) in their analysis of 150 top-selling games from 2005 to 2006. Taken together, we formed the next research questions to investigate whether patterns of sexualization persist among genres and ratings levels:

RQ2: Does sexualization of female characters differ between games of different genres?

RQ3: Does sexualization of female characters differ between games of different ratings?

As few games feature female leads (Glaubke et al., 2001), women may not always perceive that designers intend content for them. The primary character in a video game is a commanding role, one that centers on the character as the main actor in the narrative and agentic force behind the gameplay (Williams, Consalvo, et al., 2009). This depiction is consistent with masculinized traits such as leadership and independence that may be imparted on female characters along with sexualized attributes (Jansz & Martis, 2007). Games usually depict primary and secondary characters differently (Williams, Consalvo, et al., 2009). This distinction may emerge if a game conveys less information about a secondary character's personality and character attributes (e.g., intelligence, capability) and instead features her body in a sexualized manner. If games emphasize the physical attractiveness of secondary characters but focus on additional attributes of primary characters (e.g., intelligence), this would provide evidence that secondary characters' bodies are targets of objectification (Fredrickson & Roberts, 1997). As such, we asked:

RQ4a: Do games feature more primary than secondary female characters over time?

RQ4b: Are primary or secondary female characters more sexualized?

Video games often present characters, even if sexualized, as capable. Jansz and Martis (2007) labeled this pattern of coupling strength and sexualization of females in video games the "Lara Phenomenon" after iconic *Tomb Raider* hero Lara Croft

(p. 147). Schleiner (2001) noted that although the male gaze is apparent in *Tomb Raider*, Croft herself is "highly educated and adventurous … as adept at combat techniques as at puzzle solving" (pp. 222–224). Thus, video games may feature strong and capable, yet sexualized, female characters. Thus, we asked:

RQ5: Is sexualization of female characters related to their capability?

Practical implications of the portrayal of female characters

From its early years, gaming has continually evolved by way of advances in technology, consumer interest, and developer goals. This pattern of recurrent industry development has produced a wealth of gaming hardware and software for consumer consideration. Furthermore, because video game software is often more expensive and requires more time investment than other forms of media, consumers have more to lose by making a poor purchase decision (Stuart, 2008). One of the ways that savvy game consumers assess whether or not to purchase a video game is by reading the reviews of professional video game critics (Stuart, 2008). Research has not established a causal link between game reviews and sales of games, but reports within the industry suggest that critical scores contribute importantly to development efforts (Khan, 2015).

Video game publishing companies provide financial backing toward development efforts that may affect a game's success in the marketplace. Considering the popular notion that sex sells, it is possible that companies employ sexualization as a marketing tactic. Ivory (2006) discovered, however, that reviewers rarely mention the sexualization of female characters in their critiques of games. Although his method did not allow him to draw conclusions, Ivory (2006) suggested that this finding might indicate a lack of enthusiasm among reviewers about the gimmicky sexualization of female characters. Research has not determined whether a link exists between the sexualization of female characters and the critical reception. Thus, we asked:

RQ6a: Does critical success of games featuring female protagonists change over time?

RQ6b: Is critical success related to sexualization of the female character?

Method

Sampling

As Schmierbach (2009) notes, the interactive and variant qualities of video games introduce a number of challenges to analyses of their content. We reasoned that examining dynamic play—rather than static box art (Burgess, Dill, Stermer, Burgess, & Brown, 2011) or less interactive opening cinematics (Jansz & Martis, 2007)—in a game world might offer insights on character design. To give due attention to variables specific to gameplay, we followed a procedure similar to Hartmann, Krakowiak, and Tsay-Vogel (2014) and analyzed in-game recordings of video gameplay available on YouTube. This technique also allowed us to avoid bias in the capturing of the content (Schmierbach, 2009), as the original players remained independent of the

research. Analyses of video game content often involve sampling a fixed number of the top-selling video games during a specific time span to analyze content most frequently encountered by consumers (Martins et al., 2009; Williams, Martins, et al., 2009). This approach did not satisfy the sample for the current study because few top-selling video games feature playable female protagonists.

First, we referenced websites that provide video game information (i.e., IGN, GiantBomb, and Wikipedia) to compile a list of video games ($n = 1{,}527$) released between 1983 and 2014 that featured playable female protagonists. We chose GiantBomb and Wikipedia primarily because these websites contained community-generated lists of games featuring such characters. Our date range begins with the introduction of the first anthropomorphic female character in *Dishaster* in 1983. We arrived at consensus for all games excluded from potential sampling by considering details provided on the video game information websites. Specifically, we eliminated video games that did not feature any playable female characters. Additionally, prior research demonstrates that people often discount media figures that are less human-like as less socially relevant (Hoffner & Cantor, 1991). Thus, we excluded games featuring non-anthropomorphized characters (e.g., *Incredipede*). We also removed video games featuring characters from pre-existing media franchises (e.g., *X-Men: Destiny*) because our research concerns the way that the video game industry creates and portrays original female characters. Finally, we did not include erotic video games because the sexualized nature of such content is intentional and not representative of the broader design trends of the industry. We stratified the list of remaining games by year of original release and randomly sampled 20 titles per year. The industry released fewer than 20 qualifying games per year between 1983 and 1989. In these instances, we included all games that fit our inclusion criteria to yield a census for those years. The final sample contained 571 video games.

Units of analysis

The video game served as the first unit of analysis. We derived game data from one of three online video game databases in prioritized order. Accordingly, we gleaned most game data from IGN, but if the information on IGN was unavailable or lacking, we then used GiantBomb, and finally referenced Wikipedia. The female character during gameplay served as the second unit of analysis. First, we identified each game's female protagonists (i.e., the female characters that players could assume control of for each video game). In cases where the game featured a primary female character (i.e., when she was the only playable female or when the story centered on her foremost) we selected her as the character for analysis. In video games featuring multiple female characters with no primary character made apparent in reading the information on the website (e.g., *Soul Caliber V*), we randomly selected one similar to the sampling method of online role-playing characters employed by Williams, Martins, et al. (2009).

We derived female character data from 5-minute segments of recorded gameplay similar to Hartmann et al. (2014). The 5-minute segment began when it was apparent

that the player had taken control of the character's onscreen action. If coders were unsure about this time point, they arrived at consensus for the starting point. The 5 minutes following this point served as the arbitrary trim point and coders noted all time durations for post hoc reliability calculations. During selection, we prioritized certain aspects of the video: We found videos that (a) featured unmodified versions of the original game and (b) included footage of the gameplay rather than cut scenes (i.e., cinematic, rendered scenes not controlled by the player) to maintain consistency in the depiction. Additionally, we attempted to find videos that did not include commentary. Given the popularity of game reviews and play demonstration videos on YouTube, many videos contained commentary. In these instances, we muted the video to avoid influence from uploader comments. YouTube was a reliable source for gameplay footage of both recent and old games. However, when game information or video of gameplay was unavailable, we replaced the game by randomly sampling another game or character. This process of random sampling served to reduce bias.

Coding

The coding team consisted of four members, the authors, who collectively created the coding instruments. The coders' experience level with video games varied (two are highly experienced players, two barely familiar with the medium). Training took approximately 18 hours across 10 days followed by two rounds of a priori reliability pretesting. Krippendorff's α (Hayes & Krippendorff, 2007) served as the reliability coefficient for all a priori and post hoc analyses. We began coding once we achieved an acceptable a priori average (Krippendorff's $\alpha = .85$) across 10 cases not used in the study's final sample.

The final coding instrument included 16 variables across the two units of analysis. All four coders coded 20% of the sample for post hoc reliability assessment (5% drawn randomly from each coder's original portion). Individual variable post hoc reliabilities accompany each variable description below. We recorded four of the variables (i.e., *genre*, *ratings level*, *critical score*, and *release year*) precisely as reported in the respective databases and, thus, do not include these variables in the post hoc average because these data would inflate the average level of agreement. Across 12 variables our post hoc average was acceptable (average Krippendorf's $\alpha = .80$; range $\alpha = .70 - .95$).

Video game variables

We designed five video game-level variables to collect data related to the production and release of the game. We gathered *critical score* from MetaCritic (metacritic.com). MetaCritic averages, on a 0–100 scale, four or more scores from professional video game critics' reviews on the quality of a video game. When MetaCritic did not provide an average score of a particular title, as was the case for the majority of the games released prior to 1996, coders marked the *critical scores* as unknown. Coders gathered information for the next four variables from the popular video game resource site IGN or, if IGN did not have complete information, from GiantBomb or Wikipedia. We

coded *year of release* as the first year the video game was available. We did not consider subsequent rereleases or ports to new systems. We recorded the *Entertainment Software Rating Board* (*ESRB*) *rating* for each video game. The ESRB provides ratings of American-released video games to assist caregivers in evaluating the appropriateness of video game material for youth (ESRB, 2014). Ratings include Early Childhood, Everyone, Everyone 10+, Teen, Mature, Adults Only, Rating Pending, and Not Rated. We recorded *genre* as the first genre listed from the following options: action, adventure, casual, children's entertainment, family entertainment, fighting, flight simulation, horror, platformer, racing, role-playing game (RPG), shooter, sports, strategy, or other/indeterminable.

Finally, we coded whether the character was the *primary character* or not ($\alpha = .86$). To qualify as primary, the character must be playable for the duration of the game and the game's story must center on her. We coded characters as not primary if she shared the storyline with another character.

Character variables

Eleven character-level variables comprised this portion. The first set of these variables dealt with the sexualization of the character and followed a coding structure adapted from Downs and Smith (2010). We observed four areas of a character's body (i.e., the *chest*, *buttock*, *waist*, and *leg* regions) as well as their movements for sexualization (0 – *not present*, 1 – *present*). We summed the five variables into a *sexualization index* (0 – *Least sexualized* to 5 – *Most sexualized*; $M = 1.34$, $SD = 1.55$; Cronbach's $\alpha = .80$). We considered characters of low resolution (e.g., 8-bit sprites) or who never appeared on screen as indeterminable and assigned them index scores of zero.

Regions featuring secondary sex characteristics (i.e., the chest, buttocks, and waist) could be sexualized in multiple ways but still only constituted one potential point on the sexualization index. We considered chests sexualized if we observed one or more of the following: breasts disproportionate to the body size ($\alpha = .81$), bare skin between the armpits and bottoms of the breasts ($\alpha = .70$), or accentuation by garments or artistic styling (e.g., shading; $\alpha = .73$). We observed sexualized buttocks if skin was exposed from the top of the hips to the bottom of the buttocks ($\alpha = .71$) or if adornments or art styling accentuated the buttocks ($\alpha = .74$). We considered waists sexualized if the character's midriff area in the front or back of the body was bare ($\alpha = .80$) or if the waist to hip shape was exaggerated ($\alpha = .78$). We considered the leg region sexualized if the skin on the legs was exposed from the hip area to the top of the character's knees ($\alpha = .95$). Finally, we determined the presence of sexualized movement ($\alpha = .75$) if the character's movements included unnecessary undulation or jiggling that drew attention to their body in a sexual manner. Supplemental images demonstrating the variance of sexualized portrayals across time are available from the first author. The distribution was highly positively skewed. To avoid violating the assumption of normality for use in parametric tests we performed a log transformation on the index. Although we used these transformed data in our analyses, we report the untransformed means and standard deviations for ease of interpretation.

Finally, we coded characters as *physically capable* ($\alpha = .84$) if they engaged in feats of physical strength or agility aside from routine activities such as walking or picking up objects. We also coded characters as *violently portrayed* ($\alpha = .88$) if they engaged in threats of physical force or use of such force against an animate being or group of beings (Smith, Lachlan, & Tamborini, 2003). These items strongly correlated and we combined them to form an index of capability, $r = .70$, $p < .001$ ($M = 1.74$, $SD = .42$).

Results

Data analysis plan

To examine trends in the presentation of playable female characters we first visually inspected a means plot of sexualization by year of release (see Figure 1). A Loess line fitted to a scatterplot of the data indicated that sexualization over time followed a roughly quadratic trend with lower sexualization in the early years of analysis, increasing over time, and decreasing in more recent years. Comparing differences between individual years provides little information about broader trends. Thus, to interpret trends over time we created a nominal variable yielding four 8-year blocks to assess Research Questions 1 (RQ1) and RQ5. *Time Block 1* is from 1983 to 1990; *Time Block 2* is 1991 to 1998; *Time Block 3* is 1999 to 2006; and *Time Block 4* is 2007 to 2014. We included only *genres* and *ESRB ratings* that had at least 20 cases for RQ2 and RQ3. Consequently, we do not report findings along underpowered *genres* (e.g., horror) and *ESRB ratings* (e.g., Early Childhood) to avoid invalid results and encourage robust conclusions.

Findings

The first research question (RQ1) asked whether the sexualization of female protagonists would change over time. Omnibus results indicated significant differences existed across time, $F(3, 567) = 9.79$, $p < .001$ (see Figure 2). Tukey post hoc tests indicated that female characters during *Time Block 1* ($M = .73$, $SD = 1.21$) were less sexualized than characters in *Time Block 2* ($M = 1.57$, $SD = 1.65$) and *Time Block 3* ($M = 1.66$, $SD = 1.63$), $p < .001$ for both differences. Additionally, female characters from *Time Block 4* ($M = 1.13$, $SD = 1.42$) were less sexualized than those appearing in *Time Block 3*, $p = .01$.

RQ2 asked whether sexualization of female protagonists differed between genres. The omnibus test revealed that significant differences existed across genres, $F(6, 527) = 15.99$, $p < .001$. Post hoc tests showed that fighting games featured the most sexualized characters and that shooters, platformers, and RPGs featured the least sexualized characters (see Table 1).

RQ3 asked whether sexualization of female characters would differ between games of certain ESRB ratings. Significant differences were present $F(3, 539) = 17.15$, $p < .001$. Post hoc analyses revealed that games rated *T for Teen* ($M = 1.76$, $SD = 1.65$) and *M for Mature* ($M = 2.04$, $SD = 1.58$) featured more sexualized characters than games rated *E for Everyone* ($M = .59$, $SD = 1.10$) and *Unrated* games ($M = 1.12$,

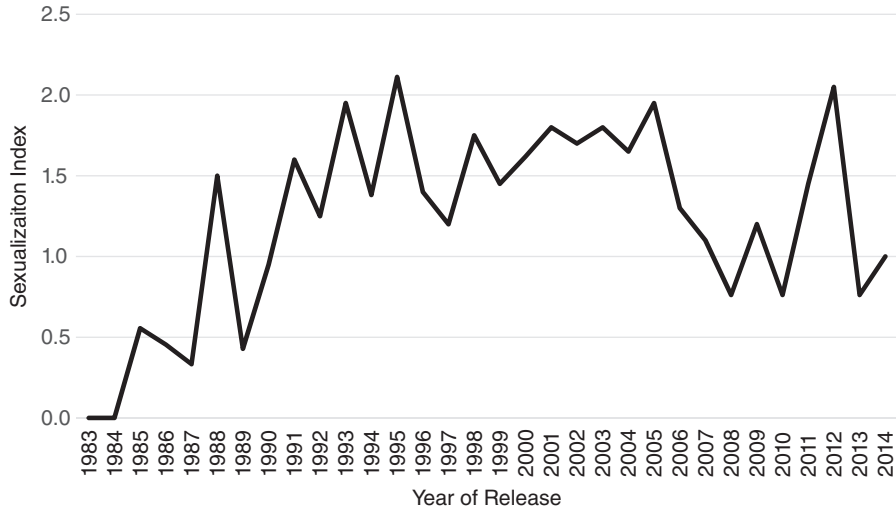

Figure 1 Average sexualization of characters by year of release.

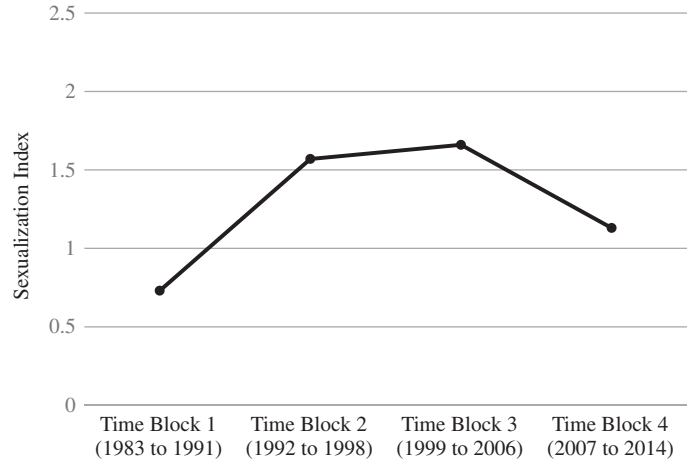

Figure 2 Sexualization of characters over time broken out by time segments.

$SD = 1.47$), all $ps < .001$. Games rated *T for Teen* were not significantly different in terms of sexualization of characters from *M for Mature* games, $p = .43$.

RQ4a asked whether games featured more primary than secondary female characters over time. The results of a chi-square analysis indicated this was not the case, $\chi^2(3, 568) = 20.33$, $p < .001$. The proportion of primary characters peaked in *Time Block 1* at 52.3%, but dropped to 25.2% in *Time Block 2*. The appearance of primary female characters rose again in *Time Block 3* (41.6%), but remained below half in *Time Block 4* (41.7%). Recent female characters were more likely to be secondary than primary, see Figure 3. RQ4b asked whether games present primary or secondary characters as more

Table 1 Sexualization Differences by Genre

Genre	*N*	*M*	*SD*
Action	172	1.58_{a}	1.59
Adventure	82	1.18_{ab}	1.29
Fighting	48	2.92	1.56
Platformer	42	0.86_{bc}	1.30
RPG	88	0.83_{bcd}	1.26
Shooter	50	0.46_{cd}	0.84
Other/Indeterminable	52	1.54_{abc}	1.61

Note: Means having subscripts in common indicate no statistically significant ($p < .05$) differences.

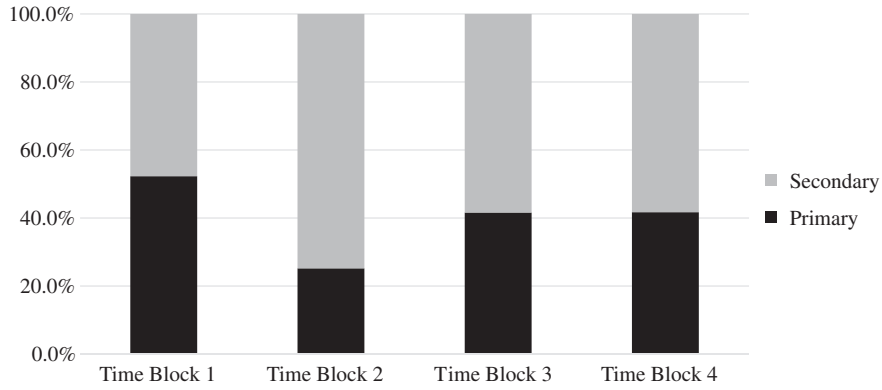

Figure 3 Proportion of primary and secondary characters across time.

sexualized. The results of a one-way analysis of variance revealed that secondary characters ($M = 1.47$, $SD = 1.58$) were more sexualized than primary characters ($M = 1.14$, $SD = 1.49$), $F(1, 569) = 7.12$, $p = .008$.

RQ5 asked whether the sexualization of a female character related to her capability. To assess this, we performed a bivariate correlation. The results of this analysis revealed that a positive relationship existed such that as sexualization increased so did capability, $r = .23$, $p < .001$.

Our final research question concerned the critical reception of games featuring female protagonists. RQ6a asked whether the critical success of games featuring female protagonists has changed over time. A bivariate correlation revealed that the critical reception of such games has decreased from 1983 to 2014, $r = -.14$, $p = .019$. Finally, we asked whether the critical success of these games related to the sexualization of female characters. Our final analysis revealed that this was not the case, $r = .007$, $p = .91$.

Discussion

The representation of female characters in video games remains a perplexing issue for social scientists, critical scholars, and other interested parties. To address the central question of how games portray female characters, we drew on existing literature in developing a study that adapted existing measures to create a standardized approach. This method provides a holistic vantage rather than isolated snapshots of particular years or top selling titles in which female characters infrequently appear and considers an ecologically valid unit of analysis (i.e., in-game character). Additionally, situating the findings within the history of the video game industry provides a broader understanding of the implications of these portrayals. Although the early years of the video game industry perpetuated the gender disparity rife within the computer industry, the recent and growing interest of women and girls seems to be influencing game content in positive ways. Recent feminist discussions (e.g., #1reasonwhy) have brought attention to the underrepresentation of female professionals in the industry as well as the sexualization and stereotyping of female characters in video games. This study complements those critiques by investigating whether games have always featured inadmissible depictions of female characters.

Central to the study's purpose, we found a pattern of change in sexualization over time that indicates the industry may be reacting to its critics. The games released from 1983 to 1990 featured the least sexualized characters in our sample. This finding is unsurprising considering the simple graphic capabilities of early video game consoles. Previous content analyses found that games with lower graphical integrity (i.e., highly pixelated visuals) show characters with highly disproportionate bodies, including large heads on boxy bodies (Martins et al., 2009). Technological advances in the mid-1990s, such as high-resolution, 3D computer graphics, facilitated the generation of more anthropomorphic bodies and along with that development, the sexualization of characters. Our data reveal that throughout the 1990s and into the early 2000s, the industry introduced more sexualized female characters than other periods. The introduction of Lara Croft in the 1996 game *Tomb Raider* may have served as a catalyst for video game developers to feature more sexualized females as a sales tactic to entice male players. Although scholars have argued that Lara represents a strong, bold female archetype (Jansz & Martis, 2007), her sexualized portrayal in the video game and promotional materials in the 1990s supports the notion that video games primarily serve male interests (Cruea & Park, 2012; Selwyn, 2007). However, our data reveal a decrease in the sexualization of female characters after 2006. We attribute this decline to an increasing female interest in gaming coupled with the heightened criticism levied at the industry's arguably male hegemony (Williams, 2006).

Although the overall sexualization of female characters has decreased in recent years, some categories of video games employ overtly sexualized portrayals. Fighting games featured the most sexualized female characters of any genre in our analysis. The industry markets this genre, along with action and shooter games, toward a primarily male consumer market (Kowert, Griffiths, & Oldmeadow, 2012). Shooter games may

have ranked low in sexualizing female characters, at least partially, because of our unit of analysis. In other words, we analyzed in-game content as the player experiences it. The first-person point of view is common for this genre and, consequently, few opportunities existed for sexualization of a character's body during gameplay. RPGs had the second lowest rate of sexualization. This finding bridges evidence found in other areas of the video game literature. Women prefer to play games with less sexualized characters (Hartmann & Klimmt, 2006) and women play RPGs with more frequency than other types of games (Williams, Consalvo, et al., 2009). We cannot assume causality, but taken together with the findings of these other studies, it seems probable that the comparably minimal sexualization of female characters in certain genres may guide women's selections. Furthermore, SIT (Tajfel, 1978) contextualizes these findings in two ways. First, although only 22% of video game professionals are women (IGDA, 2014), this proportion is higher than the approximated 3% they held in the industry's early years (Graser, 2013). It makes sense that, as more women have joined the ranks of developers, they may have shaped the portrayals of female characters. Second, it may be that as women see games casting their ingroup in a favorable light they consider gaming as a hobby or profession. This aligns with arguments other scholars have made regarding the reinforcing nature that sexist content may have on deterring women's interest in gaming (Cassell, 2002; Williams, 2006).

Video games may now feature female characters more positively and the number of playable female characters has generally increased; however, over time the percentage of primary female characters has not grown. Other scholars found that female characters most frequently appear as secondary or tertiary characters (Downs & Smith, 2010). Our results corroborate Downs and Smith's (2010) findings as only 42% of characters were primary in the most recent years of our sample—down from 52% in the earliest years of our sample. Additionally, because our method required that sampled games include a playable female character it is likely that our figures present an optimistic report of the percentage of primary female characters relative to primary male characters. We also found that games depict primary characters as less sexualized than nonprimary characters. Nonprimary characters are less central to the story and, consequently, designers may sexualize them to enhance their appeal. The sexualization of nonprimary characters underscores their secondary role by reducing their importance to their physical appearance. Conversely, a primary character is central to the story and aspects of the narrative give her significance beyond her physical attributes. This conclusion aligns with tenets of objectification theory (Fredrickson & Roberts, 1997) under which the body of a woman is valued for its use to others. Although the lower levels of sexualization for primary characters hint to prosocial change, more female characters filled secondary roles than primary roles in the sample. Thus, the risks associated with objectification of women in media (e.g., dehumanization) remain a concern (Heflick, Goldenberg, Cooper, & Puvia, 2011).

The connection between objectification and perceptions of competence seems more complex in video games than in other media. Indeed, assuming the role of an

avatar has emerged as a ripe area of exploration with provocative insights into social identity processes with the player potentially engaging with the character in ways the developer did not intend (Banks & Bowman, 2014). We found evidence of the Lara Phenomenon (Jansz & Martis, 2007) in that characters portrayed as sexualized were also capable. Jansz and Martis (2007) suggested that strong depictions of female characters, even when paired with sexualized features, may empower female gamers. We agree that this possibility exists, but argue that if female characters require sexualization to bolster their merit, that objectification and its deleterious outcomes (e.g., discomfort among women who do not play video games) become difficult to avoid.

Our findings indicate that children who play video games likely encounter sexualized imagery prior to adulthood. That is, games with the ESRB rating of Mature or Teen featured more sexualized characters than games rated Everyone. This is logical given that Mature games are created for an adult audience; however, games rated Teen did not significantly differ from Mature games in terms of sexualization. This finding does not imply that the video game industry sexualizes female characters for teenagers. Rather, because the ESRB ratings board consists of parents and other similar caregivers (ESRB, 2014), this may indicate that video games have normalized sexualization of female characters across audiences of varying ages.

Although caregivers may consult ratings prior to purchasing a video game for a minor, adults who purchase video games for themselves are more likely to consult video game reviews in magazines and on websites. Video game reviewers provide consumers a disinterested review of the content that may influence purchasing decisions (Stuart, 2008). Favorable reviews may lead to financial success for games, although data are scant regarding this assertion (Khan, 2015). Critical scores reported in this study reflect opinions of professional video game reviewers. Our finding that the critical success of games featuring female protagonists has decreased over time possibly stems from a lack of industry support in creating these games. The limited financial success of games may fuel the decline in critical scoring of such games. Lower sales discourage publishers from future investment in games that feature female protagonists because male characters pose less of a risk. Poorly funded games receive less investment in development efforts, a cycle that may result in lower evaluations from reviewers. A similar cycle of devaluation of female-led media is found within the film industry (Lauzen, 2008).

Despite a decrease in critical success for games featuring female protagonists in recent years, this phenomenon appears unrelated to sexualization. This finding implies that games do not require sexualized females to receive favorable reviews from critics. This also indicates that the presence of a sexualized female character does not bias the critic toward a higher review if other aspects of the game (e.g., mechanics, story, graphics) are otherwise poor. Furthermore, this finding underscores unenthusiastic reviewer commentary for sexualized depictions of female characters (Ivory, 2006). Indeed, a critical review of the game *Bayonetta 2* supports this notion:

> [Bayonetta will] even do a sexy pose as [her clothing] flies off, with the absolute barest minimum covered. … It's sexist, gross pandering, and it's totally unnecessary. *Bayonetta 2* needs prurient rewards even less than the original Bayonetta did, because the on-screen chaos you can wreak through skilled play is infinitely more satisfying. (Gies, 2014)

Limitations, recommendations, and conclusions

This study provides an update to the existing literature on representations of female video game characters in two central ways. First, although a number of content analyses consider female character representations, this is the first study to our knowledge analyzing depictions over time. Our approach drew heavily on the designs of previous studies to assemble a disjointed literature and examine female characters using a consistent coding structure. Second, because of the social implications associated with the representation of women in games and effects on players, we situated the findings within the broader context of video game culture and history. Notably, we also acknowledge the possibility that increasing social legitimization of feminist concerns catalyzed the changing representations of female characters. As such, the findings speak to the power of critique to generate meaningful changes in gaming.

This work provides new insight but has limitations. Using 5-minute YouTube videos of play as a unit of analysis restricts the generalizability of our findings. This unit of analysis is different from previous analyses that examined video game covers, advertisements, and narrative cinematics, and is arguably more indicative of the overall game experience because it examines the depiction with which players spend the majority of their game time. However, the videos demonstrated only a portion of the complete video game. Additionally, we did not analyze the possible moderating influence of character customization and cannot make inferences of how players might interact with this feature in shaping characters' visual appearances. This is but one of the specific characteristics of video games that Schmierbach (2009) alluded to in conducting content analyses of games. This limitation leaves an opportunity for future analyses to determine how players interact with this feature and whether it meaningfully alters character depictions. Finally, we recognize the potentially problematic nature of the authors serving as the coders in this work. We come from diverse orientations to games (two of us are enthusiastic fans of the medium and two of us are completely disinterested) and this positively influenced the research process, but may also have introduced bias in our findings. We attempted to reduce bias in systematic ways by relying on pre-existing measures, engaging in rigorous training, and, in the tradition of qualitative methods, keeping our own interests and influences in mind as we coded. Certainly, these attempts do not free us from the introduction of bias, but we feel confident that — to the best of our ability — we took steps to mitigate it.

These findings provide grounds for a policy recommendation to the ESRB for ratings. We found that games rated Teen presented female characters as sexualized as the characters in games rated Mature. Teen games are suitable for persons aged 13 years and older; M games are generally appropriate for ages 17 and older (ESRB, 2014).

We suggest that ESRB definitions provide greater consistency and clarity in descriptors regarding sexualized content. An amendment of the ESRB system to include an additional rating for teens aged 15 and younger is a viable solution in order to caution parents about sexual themes and content (e.g., overt nudity) that appear in many games rated Teen that might be more appropriate for ages 16 and over. Teens, in a period in life characterized by identity formation and sexual exploration, are susceptible to images displaying sexual content (Council on Communications and Media, 2013).

Across all time blocks, we observed a positive relationship for character sexualization and capability. This overarching trend provides evidence of the Lara Phenomenon (Jansz & Martis, 2007). Developers tended to sexualize characters cast in secondary roles but did so less with primary characters. Although female characters cast in secondary roles still outnumber primary characters, the observed pattern of higher sexualization from 1992 to 2006 followed by a decrease in sexualization from 2007 to 2014 suggests that the widespread, overt sexualization of females is on the decline. Positive portrayals of female characters who are strong, capable, and attractive without overt sexualization may be an important factor for encouraging women to become interested in gaming. These trends may also contribute toward achieving gender parity in the professional industry if positive character portrayals attract more women to gaming. Furthermore, avoiding character development that objectifies women might also foster favorable and equitable attitudes toward women who play video games.

We want to acknowledge, however, that the mere presence of sexualized female game characters does not automatically result in negative consequences for players. The effect of objectification of women in games may depend on such factors as the level of identification the player experiences with the character. Future work should investigate the intricacies of these relationships. We also note that the preponderance of flagrant sexualization in our sample was low. This outcome speaks to the recent longitudinal findings of Breuer, Kowert, Festl, and Quandt (2015) in a meaningful way. Over time, the researchers did not observe a link between gameplay and sexist attitudes. Breuer et al. (2015) argued they had no support for a cultivation effect of sexist imagery espousing sexist attitudes. Our findings speak to a different possibility. Gerbner's cultivation theory asserts that exposure over time to repeat imagery in media influences notions of reality. In the current study, we examined the character portrayals as they appear to players in game. We found that, on average, female characters are far less sexualized than what previous analyses suggest. In other words, what scholars, critics, and the public largely assume is a nearly universal feature of female characters in video games (i.e., gross sexualization) seems overstated when considering game content rather than marketing materials.

That is not to say, however, that subtle sexualization is unproblematic as it still encourages objectification by enhancing appearance focus (Fredrickson & Roberts, 1997). Thus, subtle sexualization—such as that reflected on average in our observations—may still lead to damaging outcomes. For example, when prompted to simply focus on appearance rather than performance, participants dehumanized a

female news anchor by perceiving her as less warm, moral, and competent (Heflick et al., 2011). These findings correspond to observed effects of sexualized avatars in virtual environments. Fox, Ralston, Cooper, and Jones (2015) found that when using an avatar that would have garnered a score of three on our sexualization index, female participants engaged in higher self-objectification and subsequent acceptance of rape myths. Finally, although our study produced more conservative observations of sexualization than previous work, marketing still makes female characters' sexiness salient, a factor signaling the masculine nature of the content that may encourage objectifying female characters from the onset of gameplay and a likely reason girls and women never pick up the controller (Near, 2013).

Gender disparity within the broader culture of gaming persists. Salter and Blodgett (2012) argued that the gaming public acts as a "boy's club" (p. 413) that silences women's voices when they speak out against the dominate discourse of the male gamer identity. Fox and Tang (2014) found that social dominance and conformity to some masculine norms (e.g., desire for power over women) predict sexist beliefs about women and gaming. Normalizing female characters toward competent and nonobjectified depictions may be part of the puzzle of mitigating hostility toward women in gaming. For this reason, the trend toward decreased sexualization of female characters—especially if implemented without sacrificing their capability or diminishing their prominence in the game—is promising in cultivating a more egalitarian game culture for all.

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