

What is a True Gamer? The Male Gamer Stereotype and the Marginalization of Women in Video Game Culture

Benjamin Paaßen¹ · Thekla Morgenroth² · Michelle Stratemeyer³

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Abstract Women and men play video games in approximately equal numbers. Despite this similarity, video gaming is still strongly associated with men. A common justification for this stereotype is that, although women might play games, they should not be considered “true” or “hard-core” gamers because they play more casually and less skillfully compared to their male counterparts. In this contribution, we review the existing literature on gender and gaming to investigate the male gamer stereotype in terms of its accuracy, persistence, effects, and future perspective. We conclude that the stereotype varies in accuracy depending on the definition of “gamer.” We further argue that the persistence of this stereotype can be explained by the fact that almost all professional and highly visible figures in gaming culture are male. On the other hand, female players who achieve a moderate level of competence are rendered invisible or are actively marginalized. We argue that the effects of the male gamer stereotype can be harmful to women, precluding them from the positive outcomes of video game play such as enhanced access to fields of science, technology, and engineering.

Keywords Gender stereotypes · Gamer stereotypes · Video game culture · Video games · Female gamers

✉ Benjamin Paaßen
bpaassen@techfak.uni-bielefeld.de

¹ CITEC Center of Excellence, Inspiration 1,
33619 Bielefeld, Germany

² Department of Psychology, University of Exeter, Perry Road,
Exeter EX4 4QG, United Kingdom

³ Melbourne School of Psychological Sciences, University of
Melbourne, Parkville, VIC 3010, Australia

Think of a “gamer”; who do you picture? According to Williams (2005, p. 5), you might imagine “isolated, pale-skinned teenage boys [sitting] hunched forward on a sofa in some dark basement space, obsessively mashing buttons.” Although recent research indicates that most people do not believe in the “isolated, pale-skinned” image anymore (Kowert et al. 2014), the gamer image seems to remain strongly associated with being male (Shaw 2010). The video game industry continues to create content that panders towards the presumed preferences of a young, male, heterosexual audience. These preferences are reflected in both a lack of female video game characters and hyper-sexualization of the female characters that do exist (Behm-Morawitz and Mastro 2009; Burgess et al. 2007; Dill and Thill 2007; Downs and Smith 2010; Martins et al. 2009; Ogletree and Drake 2007; Soukup 2007; Williams et al. 2009b). The marginalization of women in gaming also receives widespread attention outside the scientific discourse; for example, Anita Sarkeesian’s (2013) video series titled “Tropes versus Women in Video Games” criticizes the stereotypical and negative roles of female characters in video games.

The response to such criticism has been extreme at times—a phenomenon Consalvo (2012) refers to as “toxic gamer culture.” In particular, feminist video game critics have faced massive backlash in the course of the recent “#GamerGate” debate. #GamerGate originated as a campaign demanding ethics in video game journalism, but it became dominated by a vocal group of gamers who responded to feminist critiques with extreme online harassment including rape and death threats (Anita Sarkeesian has been one of the main targets in this regard; Alexander 2014; Chess and Shaw 2015; Wingfield 2014). At the heart of this conflict is the alleged divide between a White, young, male community

of hard-core gamers and the criticism of the gamer community by perceived feminist interlopers (Huntemann 2013; Salter and Blodgett 2012). This notion of an almost exclusively male gaming community is articulated in several popular *YouTube* videos, such as those made by the users Summers (2014), Maddox (2013), The Amazing Atheist (2013), and thunderf00t (2014). These four users, who have had their videos viewed over 2.3 million times combined, argue that “video games are created by men for men” (Maddox 2013, 0:17), and this is why developers pander to a male consumer base with strong male characters and sexy female characters.

However, the claim that women are only a small minority of gamers is contradicted by large-scale polls which have consistently shown that at least 40 % of video game players are female (Entertainment Software Association 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015; Interactive Software Federation of Europe 2012). This apparent contradiction might be explained by stereotypes of how men and women play video games. Although women might play games, they are not considered *true* gamers. This is because women allegedly only play casually, playing “inferior games” (e.g., *Candy Crush Saga* or *Farmville*; please refer to the Appendix for more detail on the games mentioned in the present paper) on “inferior platforms” (such as smartphones; Juul 2009; Shaw and Chess 2016; Vanderhoef 2013). As such, women supposedly exhibit less dedication and skill with respect to gaming. Conversely, men are thought to be “hard-core” gamers, playing more complex and competitive games on dedicated consoles, identifying with the gaming community, and sometimes even engaging in competitive electronic sports where they can earn prize money in international tournaments (Taylor 2012).

In the present paper, we attempt to explain the deep-rooted association of video game play with the male gender by reviewing the existing literature on the topic. Three research questions guide our investigation. First, is it the case that gamers are predominantly men? To answer this question, we look at the existing research on gender differences in video game play. Second, what are the mechanics that perpetuate gendered gamer stereotypes? Here, we draw on the extensive research on stereotypes, in particular social role theory. Finally, what are the consequences of these stereotypes? For this question, we draw on the literature on the effects of games, the benefits of gamer status, and gendered effects of gaming. We also provide an outlook on the future of the male gamer stereotype and discuss interventions.

Are Gamers Predominantly Male?

First, we examine the accuracy of the gendered gamer stereotype. Jussim et al. (2015) suggest a three-step

empirical process when assessing stereotype accuracy, namely (a) assessing people’s descriptive beliefs about a group, (b) identifying criteria that establish group characteristics, and (c) comparing beliefs to criteria. In comparing beliefs to criteria, Jussim and colleagues suggest that a discrepancy of more than 20 %, or a correlation lower than $r = .25$, indicates an inaccurate stereotype.

This standard seems to establish a rather simple assessment for our case. People believe that gamers are men (Kowert et al. 2012; Williams et al. 2008). However, the polls of the Entertainment Software Association (2008–2015) show that more than 40 % of gamers are female. The discrepancy between group beliefs and actual properties is larger than 20 %, thus the stereotype is inaccurate. This assessment, however, has two main problems. First, we do not know how large the male majority in the gaming community is believed to be. Second, and more importantly, it is not clear a priori which criteria establish characteristics of the gamer group. The figures provided by the Entertainment Software Association include anyone who engages in video gaming—independent of genre, platform, time-investment, or other features. Most likely, such a broad definition overestimates the group who are considered “true” gamers (Grooten and Kowert 2015; Poels et al. 2012; Shaw 2012). Depending on the definition of a gamer, stereotype accuracy might vary drastically.

A more systematic assessment of gamer stereotype accuracy is provided by two studies by Kowert and colleagues (Kowert et al. 2012, 2014). In the first study, the authors assessed beliefs about the stereotype of online gamers via a telephone survey and identified a gamer stereotype using component analysis. They found that gamers were perceived as unpopular, unattractive, idle, and asocial, indicating a negatively valenced stereotype (Kowert et al. 2012). In the second study, they surveyed both gamers and non-gamers and compared their self-assessment with respect to the stereotyped attributes. No significant differences were found between gamers and non-gamers, suggesting that the stereotype is inaccurate (Kowert et al. 2014).

Still, this research does not settle the matter. First, the participants of the first study did not personally endorse the gamer stereotype, that is, they did not believe that gamers actually conform to the stereotypical description they provided (Kowert et al. 2012). Second, the studies did not consider gender as part of the gamer stereotype. Finally, in their second study, Kowert and colleagues (2014) defined gamers as anyone playing more than 1 min per day, which is still likely to overestimate the group of people seen as gamers.

In order to get a clearer picture of the accuracy of the male gamer stereotype, we need to consider more

restrictive definitions of hard-core gamers. In academia, there are a plethora of such definitions (Grooten and Kowert 2015), which we will review briefly. We will then proceed to assess the accuracy of the gendered gamer stereotype with respect to each of these definitions.

Kowert and colleagues' (2014) approach of taking time-investment as the central criterion has been applied by other scholars as well (Poels et al. 2012; Royse et al. 2007; Williams et al. 2009a). However, the threshold to be considered a hard-core gamer varies, reaching from 1 min per day (Kowert et al. 2014) to 1 h per day (Poels et al. 2012). The latter study used time-investment only as an initial definition to find different parameters which correlate with hard-core versus casual gaming. Using qualitative interviews in small focus groups (of 4–7 participants), they found a lack of distinction between hard-core and casual gamers, with the exception of self-identification with the gamer label. Poels and colleagues (2012) report that, independent of gender, hard-core gamers were proud to be gamers, whereas casual gamers did not consider themselves as gamers. As such, hard-core gamers may be defined by their self-identification. Indeed, Shaw (2012, 2013) and Grooten and Kowert (2015) argue that the term “gamer” refers to a social identity rather than merely describing the act of playing video games (Grooten and Kowert 2015). In particular, the gamer identity is *performed* in out-of-game spaces, for example by taking part in game-related online fora, visiting video game conventions, or wearing gaming-related clothing (Grooten and Kowert 2015; Shaw 2012, 2013).

Other characteristics may also define the difference between casual and hard-core gamers. Ip and Jacobs (2005) used cluster analysis with survey data for video game market research. They identified two clusters, which they related to hard-core and casual gamers. The clusters were distinguished by three components: gaming knowledge and attitudes, playing habits, and buying habits. Vanderhoef (2013), as well as Vermeulen et al. (2011), distinguished hard-core and casual gamers by the genres of games they play—classifying shooters, massive multiplayer (role playing) games, and strategy games as hard-core game genres. Juul (2009) takes a similar route but lists design elements such as tolerance of interruptions and usability as distinguishing factors between hard-core and casual games.

Interestingly, none of the definitions mentioned includes video game skill as feature by which to identify hard-core gamers, even though assumed lower skill is an important part of the prejudice against casual gamers (Juul 2009, pp. 39–45; Salter and Blodgett 2012; Vanderhoef 2013). This oversight might be due to difficulties in assessment. For instance, how would one compare the

difficulty of a song in *Guitar Hero* to the difficulty of traversing a dungeon in *World of Warcraft*, or an opponent in *Counter-Strike*?

Because we have little a priori information supporting one or the other definition, we continue by assessing the actual gender distribution of gamers according to each of the criteria we discussed: time-investment, self-identification, genre, design elements and content, as well as skill. The one exception is Ip and Jacobs' (2005) survey-based definition of casual versus hardcore games because we did not find any other study applying it.

Time-Investment

Multiple studies have indeed found that women, on average, spend less time playing video games than men do (Hartmann and Klimmt 2006; Poels et al. 2012; Terlecki et al. 2011; Vermeulen et al. 2011). However, all of these findings are based on self-reported game time, which is subject to under-reporting effects that are particularly pronounced for women (Kahn et al. 2014; Williams et al. 2009a). More specifically, Williams, Consalvo, and colleagues (2009a) found that men in their sample underestimated their weekly play time by about 1 h, whereas women underestimated their weekly play time by more than 3 h. The authors attribute the under-reporting effect to issues of social desirability connected to problematic and compulsive play. Kahn and colleagues (2014) further connect under-reporting to cognitive dissonance theory and to balance theory, finding that players who fit less into the adolescent male gamer stereotype are more likely to under-report.

To our knowledge, only two studies have assessed play time more directly, namely the works by Williams, Consalvo, and colleagues (2009a) and Ratan et al. (2015). In both cases, the authors assessed play time or number of game sessions using direct access to the game servers (*Everquest 2* in the former case and *League of Legends* in the latter). Moreover, both studies feature impressive sample sizes ($N=7,129$ and $N=18,627$ respectively). In the former study, the authors found that female participants had a *higher* average play time than did male participants. This finding was especially pronounced for the top 10 % of players in terms of time-investment, with women on average playing 8 h more per week than men did. In the latter study, the authors found that men played more game sessions than women did. However, the effect size was small ($d=.30$), which is not sufficient to judge the stereotype as accurate according to Jussim et al. (2009), who require an effect size of d at least .8 for an accurate stereotype.

Additional context for gender differences in time-investment is provided by Winn and Heeter (2009). In a

survey of undergraduate students, women, on average, had less leisure time to spend on games than men did. This pattern suggests that women's reduced time-investment in gaming might not necessarily be a result of innate preference, but rather of practical necessity. Furthermore, we note that this time-investment stereotype is likely only accurate for players who play far more than the norm. This categorization includes, for example, e-sports athletes (i.e., avid video game players who compete in international tournaments). Taking part in such tournaments requires intense training of several hours a day (Taylor 2012). Among e-sports athletes, there are almost no female players. For example, among the top 100 players in terms of earnings, none are female (e-Sports Earnings 2016).

Another example of extreme players are so-called *speedrunners*, who compete by playing through a single-player game as fast as possible, relying on intricate knowledge of the game mechanics or even specific bugs and glitches in the source code (Parker 2008). Interestingly, this branch of video game culture seems not to have received much scholarly attention to date. To roughly estimate female participation, we looked at three recent, large speedrunning events (the 2015 *Awesome Games Done Quick* event and the 2014 as well as 2015 *Summer Games Done Quick* event). We assessed gender using video footage. (We acknowledge that such an assessment is problematic if applied to non-cisgender expressions. Further, we excluded two participants due to videos not being available.) Of the 153, 136, and 117 runners featured in the events, 3, 0, and 6 runners respectively were women (i.e., less than 2 % on average).

A final example of players with high time-investment are people who suffer from gaming addiction or engage in problematic play. The most common self-report indicators of problematic play are playing more than planned, playing even though one does not really want to play, and playing excessively. All three are strongly connected to high time-investment. Because definitions of problematic play vary among studies, it is not surprising that researchers report different prevalence rates ranging from 1.3 % (Haagsma et al. 2012) to 11.9 % (Grüsser et al. 2006).

With regards to gender, Mentzoni and colleagues (2011) found that problematic video game play is more likely among men and among adolescents with a prevalence of 15.4 % in men between 16 and 21 years-old (n approx. 82) and 2.5 % for women in the same age group (n approx. 127). However, the gender difference in problematic play prevalence is much smaller for older age groups. For both men and women, it is below 3 % for the age groups 28–33 years-old (n approx. 200) and 34–40 years-old (n approx. 242). We also note that the self-

reporting scales used in the study might underestimate women's play time due to the same under-reporting effects mentioned previously. Overall, we observe that the male gamer stereotype is only moderately accurate when considering time-investment outside the extremes, but becomes more accurate if very strict criteria on time-investments are applied.

Self-Identification

Quantitative accounts of gender differences in gamer self-identification are provided by two studies. As part of their study on gamer stereotypes, Kowert and colleagues (2012) found that, of 176 self-identified gamers studied, only 14.4 % were female, whereas 85.6 % were male. Further, in a survey of about 1400 U.S. teenagers, Burch and Wiseman (2015) found that only 35 % of female adolescents identified as gamers, whereas fully 69 % of young men did.

The discrepancy between women and men self-identifying as gamers might be explained by a conflict between the gamer identity and the gendered identity of women. Storla (2011), as well as Taylor (2012, pp. 122–125), connect the gamer identity to the “nerd” identity of being overly intellectual, obsessive, and socially awkward, which is typically associated with men rather than with women (Bucholtz 2002; Fine 2010, pp. 87–91). We note that the masculinity of men who engage in gaming might be challenged by their identities as nerds and outsiders as well (Burch and Wiseman 2014; Kowert et al. 2012; Taylor 2012, pp. 111–115). However, we agree with Taylor (2012, pp. 128–129) that the conflict between male identity and gamer identity has been alleviated in the last few years as teenagers increasingly play video games and playing popular games may even accrue social capital for young males (Burch and Wiseman 2014). Women, on the other hand, can only embrace *either* a gamer identity *or* a gender identity. This conflict is intensified by marketing practices of video game publishers which target a young, male consumer base (Shaw 2012).

Royse and colleagues (2007), as well as Daviault and Schott (2013), further argue that female players who spend a lot of time gaming internalize a fluid understanding of gender, whereas women with less play time see gaming as strictly associated with males and so are less likely to identify themselves with gaming culture. This idea is consistent with findings in related areas. Prescott and Bogg (2013) found that women in the games industry have internalized a more androgynous gender identity. Similarly, Bucholtz (2002) notes that women working in technology-based jobs identify more strongly with their profession than with their gender; and Fine (2010) discusses several studies which show that women in

technological fields tend to identify less with their gender compared to women outside such fields. On the other hand, Ogletree and Drake (2007) found no significant difference in gender identification between women who play a lot and women who do not. Overall, we find some evidence of gender-differences in self-identification, which appear to be less pronounced for younger players.

Genre

Previous studies have identified specific hard-core game genres (shooters, massive multiplayer games, real-time strategy games), which may separate casual from hard-core gamers (e.g., Vanderhoef 2013; Vermeulen et al. 2011). In an online survey distributed on a gaming website with 962 participants, Vermeulen and colleagues (2011) found that 85.9 % of men in their sample played games in the hard-core genre, whereas only 42.7 % of women did. This corresponds to 21.7 % of hard-core players being female (the overall sample consisted of 64.2 % men and 35.8 % women). Similarly, Burch and Wiseman (2015) report that 16–26 % of female adolescents in their sample of around 1400 teenagers played games from genres which are considered hard-core. Harwell (2014) cites the research company *newzoo* for statistics on the gender distribution of players of popular video games (the number of participants is not provided). For shooter games (*Halo*, *Call of Duty*), 27 and 28 % of players were female, whereas 29 % of players of a strategy game (*League of Legends*) were female. For all other games listed, female participation was even higher. The lowest estimate is provided by Ratan and colleagues (2015) who found that only 4 % of participants in their study on *League of Legends* were female ($N=18,627$).

Taken together, with the exception of the last study, most data seem to indicate that between 16 and 29 % of players of hard-core genre games are women, indicating some gender difference. With an upper-bound estimate of a third of players being female, we argue that the male gamer stereotype appears unsupported by evidence. However, we acknowledge that a lack of empirical data on expectations of gamer gender presents significant challenges in drawing such conclusions.

Design Elements and Content

A number of authors list design elements as critical to the definition of a gamer (e.g., Hartmann and Klimmt 2006; Juul 2009, p. 50; Vermeulen et al. 2011). For instance, Juul (2009) defines five design elements to distinguish hard-core games from casual games. First, he suggests that hard-core games feature a *negative fiction*, that is, a dark and violent setting, such as a war zone, which can be related to violent video game content. Both Hartmann and

Klimmt (2006, $N=317$) and Vermeulen et al. (2011, $N=962$) report that women in their samples dislike in-game violence more than men do. Unsurprisingly, this difference was partially explained by genre preference, such that women and men who played core-genre games were less annoyed by in-game violence compared to others, and this effect was stronger for women than for men. These patterns suggest that male and female players of core genres are more similar than male and female game players overall. Further, Hartmann and Klimmt (2006) report no gender differences in preference for role playing games (RPGs), which are oftentimes quite violent. Consider, for example, the highly popular *Dragon Age* franchise, which has been rated “adult only” by PEGI (2016) due to extreme violence.

Juul (2009) suggests three further features which define hard-core games in opposition to casual games: low usability, high difficulty, and a lack of “juiciness,” which refers to strong visual rewards for players’ achievements. All of these features relate to the challenges a game poses to a player. Vermeulen and colleagues (2011) report that female players preferred games with clear and manageable challenges. Casual games that feature such challenges, such as *Candy Crush Saga* and *Farmville*, are predominantly played by women (Haferkamp and Herbers 2012; Harwell 2014; Juul 2009). As in the case of violent game content, Vermeulen and colleagues (2011) report that the preference for complexity is explained by genre preference. The difference in complexity preference between women and men is smaller for players of hard-core game genres than for other players.

As a final feature by which to define hard-core games, Juul (2009, pp. 36–39) suggests “non-interruptibility”. Hard-core games require players to spend time in a prolonged game session, which is not the case for casual games. Winn and Heeter (2009) report that women not only have less time to spend on games overall, but also less time per game session (less than 30 min on average, whereas men spend more than 1 h per session on average). As such, women might prefer casual games due to time constraints rather than because of innate preferences.

We also note that at least some of the findings with respect to gendered preference in game design are contradictory. For example, Hartmann and Klimmt (2006) state that women prefer social interaction within games, whereas Vermeulen and colleagues (2011) report the opposite. Both studies find that hyper-sexualization might deter women from gaming, whereas Reinhard (2009) finds no such effect. Taken together, the research on game design and content seems to suggest that there is some accuracy in the stereotype of the male gamer but that the division between gamers is not as straightforward as presuming that women are casual gamers and men are hard-core gamers.

Skill

Few studies directly assess skill levels required for specific video games and genres. Brown et al. (1997) found that men outperformed women in *Pong* but that both genders showed significant performance increases in the course of the study. More recently, Ratan and colleagues (2015) surveyed over 18,000 *League of Legends* players. They utilized the skill measure devised by the game's developers and reported that men, on average, had a significantly higher skill level than did women. However, the effect size for their study ($d=.35$) suggests a relatively small gender difference. Moreover, they found that women accrued skill at the same speed as men, indicating that the difference in skill was mainly driven by the fact that men had, on average, played more matches than did women (Ratan et al. 2015). In other words, if women spent the same time playing *League of Legends*, they would match male players on skill level.

We also note the effect of stereotype threat on female gamer's performance in playing video games. Stereotype threat has been introduced by Steele and Aronson (1995) as the negative effect that salient negative group stereotypes can have on group member's performance. For instance, women who are reminded of their gender identity before a cognitive ability test (e.g., a math test) tend to perform worse than women who receive no such reminder (for a meta-analytic review of this literature, see Nguyen and Ryan 2008). Both Vermeulen et al. (2016) and Kaye and Pennington (2016) found that gaming performance for women could be negatively affected by evoking the "girls can't play" stereotype; as such, stereotype threat might play a role in reported performance differences between the genders. In conclusion we can suggest that, as with time-investment, the male gamer stereotype is only accurate if we restrict our sample to highly skilled players.

Conclusion About Predominately Male Gamers

Overall, our review of the literature indicates that the accuracy of the male gamer stereotype depends on the strictness of the stereotype as well as the strictness of the gamer definition. Generally, the less restrictive the stereotype is (i.e. the more women are believed to be gamers as in "some women are gamers" versus "no women are gamers"), the more accurate the stereotype becomes. Conversely, the narrower the definition of "gamer" and the fewer people included in this definition (e.g., hard-core gamers versus casual), the more accurate the stereotype becomes. However, if one allows some participation by women and considers gaming as a whole, then the stereotype of gaming as a men-only domain unravels. It

therefore seems puzzling that a stereotype which is only accurate for a very small minority of niche gamers persists so stubbornly. In the next section, we explore the mechanics that perpetuate the stereotype in detail.

The Mechanics Behind the Male Gamer Stereotype

Stereotypes of gamers differ depending on whether they are defined by gamers themselves or by observers of gamers. Kowert and colleagues (2012) found that self-identified gamers were aware that the gamer stereotype described them as unpopular, unattractive, idle, and asocial, but they found the stereotype more inaccurate than did non-gamers. But how does stereotype *content* differ between in-group and out-group perspectives? The stereotype content model (Fiske et al. 2002) suggests that stereotypes of any groups can be described using two dimensions: warmth and competence. The gamer stereotype description by Kowert and colleagues (2012) is negative on both axes, describing gamers as lacking both competence and warmth. However, self-descriptions of gamers often highlight competence and skill, as well as competitiveness, as important characteristics of gamers (Royse et al. 2007; Salter and Blodgett 2012; Taylor 2012; Vanderhoef 2013). Such a description is high on competence but low on warmth. Incidentally, this configuration matches that of stereotypical men (Fiske et al. 2002).

Thus, stereotype content informs our understanding of self-identification and self-stereotyping as a gamer. Self-stereotyping has been described by social identity theory (Tajfel 1974) and self-categorization theory (Turner et al. 1994). It refers to the description of one's self in relation to the stereotype of a group to which one belongs—for example, the extent to which a woman describes herself as caring and nurturing or an academic describes herself as intelligent but lacking social skills. The extent to which self-stereotyping occurs depends on many factors, such as the salience of one's group membership or the perceived overlap between the representation of the in-group and the self (Latrofa et al. 2010).

These theories help to explain why males are more likely to identify as gamers compared to females. Men perceive a stronger overlap between their gendered identity and their gamer identity, facilitating social identification and self-stereotyping. For women, the opposite is likely to happen: because their gendered identity conflicts with the gamer identity (Storla 2011; Taylor 2012, pp. 122–125) they may be less likely to describe themselves in terms of the gamer-stereotype. Furthermore, self-stereotyping has been shown to increase if there is a perceived threat to the in-group's status (Spears et al. 1997). This finding is consistent with the observations of Juul

(2009), Huntemann (2012), Salter and Blodgett (2012), and Vanderhoef (2013), all of whom suggest that gamers feel their community is threatened by feminist critics and changes in the games market, such as the rise of so-called casual games. Status may also be involved in perpetuating the male gamer stereotype in a different way. Once gender differences in status-relevant parameters within the gaming community exist—for example because male players invest more time and as a result achieve a higher level of skill and performance—higher status is prescribed to males even if their playing behavior does not objectively differ from females (Ridgeway 2013).

Another perspective on stereotypes is offered by social role theory (Eagly and Steffen 1984; Koenig and Eagly 2014). This theory suggests that the distribution of members of different groups into social roles shapes stereotype content. For example, women are over-represented in caregiving, communal professions, which results in them being viewed as nurturing and warm. Evidence for this theory exists with respect to a wide range of groups (e.g., Black men and women, gay men, the poor, and senior citizens) and social roles (e.g., secretaries, hair stylists, food service, and store clerks), and the authors explicitly suggest its applicability to leisure and recreational roles as well (Koenig and Eagly 2014).

In relation to video game culture, a gendered association with gaming might arise if more men than women are seen performing the social role of a gamer. Thus, it is informative to consider high visibility groups who perform the social role of a gamer. Media depictions of gamers often invoke images of young, White, male gamers who play excessively (Grooten and Kowert 2015; Williams 2003). Indeed, it seems that the gamer stereotype in broader society is mostly driven by problematic play (Kowert et al. 2012, 2014). However, this image does not necessarily hold for the in-group. For gamers, a broader range of figures have high social role visibility. Consider, for example, e-sports athletes and speedrunners. These groups combine high competence and high status with high visibility. More importantly, almost all of them are men.

Other highly visible figures within video game culture are video game reviewers. Reviewing video games has become one of the most influential practices in video game culture, aside from playing games itself. We define “review” rather loosely, and include professional video game journalists, as well as amateur video game players who display their game play live via online streaming while commenting on it (so-called “let’s plays”). Amateur “let’s plays” videos draw huge audiences on established video portals such as *YouTube* and *twitch.tv*. Consider the example of *PewDiePie*, whose videos are viewed about 300 million times per month (Stark 2015),

indicating high visibility. To our knowledge, there is no existing research on the gender distribution of video game reviewers. We therefore provide our own estimates of gender distribution in the field.

To account for professional reviewer estimates, we evaluated all video game review sites in the top 100 of Alexa’s (2016) “Top Sites in Video Games” and assessed reviewer gender via staff listings provided by the sites (*destructoid.com*, *eurogamer.net*, *gamasutra.com*, *gameinformer.com*, *gamesradar.com*, *giantbomb.com*, *ign.com*, *pcgamer.com*, and *rockpapershotgun.com*). Alexa was chosen because it is a large and established source for large-scale analyses of this sort (Vaughan and Yang 2013). Two sites (*gamespot.com* and *n4g.com*) were excluded because no staff information was available. Further, we excluded five staff members of *destructoid.com* because we could not assess their gender. This resulted in a sample of 200 staff members; of these, 28 (14 %) were female and 172 (86 %) were male. Regarding “let’s plays,” we base our estimation on the 100 most subscribed gaming channels on *YouTube*, according to VidStatsX (2016) “One hundred most subscribed games & gaming channel rankings list by subscribers.” In this case, only two channels featured female reviewers (one female host and one female co-host). In comparison, 84 channels had exclusively male hosts, with the remaining 14 channels belonging to groups or organizations.

The invisibility of women holds true in online game spaces as well. Lenhart and colleagues (2015) report that only 28 % (n approx. 45) of female adolescents use voice chat in online games, whereas 71 % (n approx. 285) of male adolescents do. As a result, female players who *are* performing the role of gamer are unlikely to be identified as female. Rather, other players are likely to default to the norm and presume they are male (Cote 2015). Further, because women are often introduced to a game by male friends or romantic partners, they are often perceived as fulfilling not the role of a gamer, but of a romantic partner (Ratan et al. 2015; Williams et al. 2009a).

The same argument holds for the public performance of the gamer identity in forms of fandom (Grooten and Kowert 2015; Shaw 2012, 2013). The most visible expression of fandom are gaming conventions such as *E3* in the United States, the different *PAX* installments in the United States and Australia, or *Gamescom* in Germany. Although statistics on the demographics of convention visitors are unavailable to us, we have qualitative accounts such as those provided by Huntemann (2012), who mentions an overwhelming male majority at such conventions. Other arenas for fandom are on-site e-sports tournaments and large scale LAN parties (events where players connect their computers in a local area network, or LAN, to play together), where fans may cheer on e-sports athletes. Superdata (2016) reports that 15 % of e-

sports viewers are women ($N=430$), while Gera (2014) suggests that this figure is closer to 30 %. However, she also proposes that these women may not self-identify as gamers; they are presumed, instead, to be the family or friends of professional players who take part in the event for their partner's sake. Similarly, Taylor et al. (2009) note the role of pro-gamers' mothers in organizing their sons' intensive game play activity and travel to gaming events. Two other female roles in e-sports they highlight are "booth babes" (female promotional models) and so called "halo hoes," a derogatory term referring to a (probably more imagined than real) group of young women who attend professional gaming events just to flirt with and "pick up" successful male gamers. However, we note a single exception to the dominance of male fandom practices. *Cosplay* is the practice of dressing up as a character from a video game (Lamerichs 2011). It is mostly regarded as a female practice (Hjorth 2009), but is also highly visible, given that cosplay is predominantly featured at gaming conventions and other similar public spaces.

Overall, we see that visible performers of the gamer role are overwhelmingly male. As such, social role theory would predict an association between the male gender and gaming. Thus, social role theory helps to explain the persistence of the male gamer stereotype. We note that this implies a vicious cycle. If gaming is associated with the male gender, women who display their gamer identity face a social cost; for example, women who reveal their gender in multiplayer games are likely to be challenged over their legitimacy and competence (Fox and Tang 2014). In turn, fewer women visibly perform their role as a gamer.

Moreover, the lack of visibility of female gamers might impact gendered gaming behavior (e.g., reduced participation of women in domains which are highly visible and professional) by influencing the availability of role models. Role models have been shown to impact motivation, goals, and behavior by making respective domains, goals, and behaviors both more attractive and attainable (see Morgenroth et al. 2015). Importantly, research shows that only role models whom individuals believe they could resemble have this positive effect. This is particularly the case for women in male-dominated fields, where other women are more attainable, and in turn more effective, role models (Lockwood 2006; Stout et al. 2011). The lack of visible female role models in gaming may thus be an additional obstacle which keeps female gamers from visibly performing the role of a gamer.

Additionally, if women are less likely to perform their gamer identity visibly, it is less likely that the video game industry will view them as their target audience. Indeed,

the lack of aspirational female characters compared to male characters in current video games may indicate that the target audience is assumed to consist mostly of young men (Behm-Morawitz and Mastro 2009; Burgess et al. 2007; Dill and Thill 2007; Downs and Smith 2010; Martins et al. 2009; Ogletree and Drake 2007; Soukup 2007; Williams et al. 2009b). Although it can be argued that this lack of female representation in video games does not deter women from playing (Daviault and Schott 2013; Reinhard 2009), it might still limit identification with the gamer label and thus negatively influence women's willingness to perform their gamer identity visibly (Burch and Wiseman 2015).

Aside from these subtle structural effects, we also want to highlight the active factors that might limit women's visibility in video game culture. In online games, players are confronted with an overall hostile environment ("trash-talking" or "flaming"; e.g., Elliott 2012; Lenhart et al. 2015). This hostile environment is even more pronounced for females. Research shows female gamers are more likely to be targeted for sexual harassment (Barak 2005; Bucholtz 2002; Cote 2015). In one experiment, utilizing pre-recorded male and female voices in a violent multiplayer video game, the female voice received three times as many negative comments as the male voice did (Kuznekoff and Rose 2013).

Such hostile reactions may be explained by masculine identity and norms. Kilianski (2003) proposes the notion of an "exclusive male identity," which is fundamentally opposed to both femininity and homosexuality. Men whose ideal selves are more masculine, as well as less feminine, are those most likely to hold negative attitudes towards women. This negativity might be particularly strong when women are viewed as threatening a male space by their intrusion. Fox and Tang (2014) suggest that gaming, by virtue of being a space where boys and men typically bond and interact, is viewed as a highly masculine environment. The interplay between this environment and men's own sense of masculine identity can result in these spaces becoming hostile to women. Highly masculine environments can increase adherence to masculine norms, such as those that result in the sexual harassment of women (Mahalik et al. 2003). Women might therefore hide their gender in online gaming spheres to limit hostile reactions, which in turn negatively affects their visibility (Cote 2015). Finally, we once again note the hostile reaction of a small, but vocal minority in video game culture towards high profile women in gaming (such as video game reviewers or developers), which might deter women from aspiring towards such positions (Consalvo 2012).

Overall, theories developed in social psychology, combined with the active discrimination women face in (online) gaming spaces, provide a plausible model for

the persistence of the male gamer stereotype, despite its arguable lack of accuracy. However, we acknowledge that the empirical support for the applicability of the theories we mentioned in the specific domain of video game culture is still rather thin. Here, further research would be beneficial.

The Consequences of the Male Gamer Stereotype

We have discussed the accuracy of the male gamer stereotype and put forward explanations for why the stereotype might be so pervasive. But what are the consequences of this stereotype? As considered in the previous section, the first effect of the male gamer stereotype is its own persistence via feedback loops. The association between gaming and the male gender leads to less visibility of female gamers—due to a reduced feeling of fitting in, reduced self-identification, prescriptive stereotyping, and active discrimination—which in turn leads to a stronger association between gaming and the male gender. We have also seen that the mechanics of the male gamer stereotype lead to a marginalization of women in video game culture. This might lead to negative psychological outcomes such as feeling unwelcome, isolated, or like a misfit in a hobby that is otherwise appealing. Even stronger than that are the direct negative psychological effects of verbal and sexual harassment directed at women, including rape and death threats (Barak 2005).

As a consequence, women might choose not to play at all or not to play certain classes of games. This channeling may preclude them from a range of affective, behavioral, perceptual, cognitive, and physiological benefits (Boyle et al. 2016). Indeed, some research suggests women might benefit more than men do from playing video games. Feng et al. (2007) found that the gender gap in spatial attention was greatly reduced after playing an action game. Further, video game play is associated with positive social outcomes, such as increased social status for teenagers (Burch and Wiseman 2014) as well as making and maintaining friendships via (online) gaming (Lenhart et al. 2015). Finally, several studies have shown that video game play might provide easier access to technological fields of study and work, such as computer science, engineering, and math (STEM fields). Mayo (2009) lists evidence showing that games can close learning gaps between D-grade and B-grade students in science and are associated with higher enjoyment and motivation compared to regular lectures (Mayo 2009). Daviault (2010) describes an intervention engaging female adolescents in game design, which increased participant's self-efficacy in computer subjects (Daviault 2010). Finally, Cheryan et al. (2015) note that video game play is a part of the computer

science stereotype and that women who do not play video games may feel like misfits. Thus, more women engaging in video game play and identifying as gamers might help to alleviate the gender imbalance in some STEM fields (Cheryan et al. 2015; Daviault 2010).

The male gamer stereotype also informs the perceived audience for game developers (Shaw 2012, 2013), leading to game content and marketing that panders to a clichéd young male audience, most notably with violent game play and hyper-sexualized depictions of female characters. The effect of such game content, in turn, is disputed. Whereas some authors suggest that such content might repel women (e.g. Hartmann and Klimmt 2006; Vermeulen et al. 2011), others argue that no such effect exists (e.g. Daviault and Schott 2013; Reinhard 2009). It can be argued that violence and hyper-sexualization are problematic for other reasons. For example, Soukup (2007) suggests that most video games are in their very nature masculine and even patriarchal because they promote an idea of mastery that is equivalent to skillfully subjugating and dehumanizing one's opponent. Behm-Morawitz and Mastro (2009) found that hyper-sexualized depictions of women affect female players, resulting in lower self-efficacy in women, and they are associated with less favorable attitudes towards women's cognitive and physical abilities in both male and female participants.

Finally, we can also consider the effects of the male gamer stereotype on the research literature itself. Jenson and De Castell (2010) found that a whole branch of scientific literature on gender and gaming has sought to discover innate play preferences of girls and women in order to create games that might appeal to females. This corresponds to the now infamous era of "girl games," which were presumed to be more appropriate for women and girls, but may have instead served to reinforce gendered stereotypes (Harvey and Fisher 2015; Jenson and De Castell 2010).

Changes in Video Game Culture

We have demonstrated that the male gamer stereotype has a whole host of (often negative) effects for women and for gaming in general. This range of issues leads us to our final discussion of whether the male gamer stereotype is likely to disappear in the future and what interventions might help support such a development. Video game culture is not at all static. Games and gamers change rapidly, and video game culture changes in response. Technology has certainly played an important part in these changes, most notably via the omnipresence of smartphones as mobile gaming platforms and the proliferation of broadband internet. Digital game distribution using App Stores or platforms such as *Steam*

has become normal. In his book *Casual Revolution*, Juul (2009) describes the introduction of casual gaming to mainstream culture—arguably the biggest change to occur in video game culture in recent years. Recent estimates indicate that up to 97 % of American teens play video games, suggesting that almost everyone will be a game-player in the future (Lenhart et al. 2008).

This ubiquity of video game playing has already affected the gamer stereotype, eroding the belief that the typical gamer is unpopular, unattractive, idle, and asocial (Kowert et al. 2014). One could even argue that the identity conflict between gaming as a nerd or geek practice and traditional masculinity has nearly vanished. Burch and Wiseman (2014) suggest that playing popular games is no longer maligned, but rather considered “cool,” and can lead to higher social status without any challenge to masculine identity. Taylor (2012, p. 128–129) similarly argues that the patriarchal hierarchy might slowly re-incorporate male nerds. However, the situation is less clear for female players.

It is certainly the case that the debate regarding female representation in games has become livelier in recent years. Gaming companies are increasingly engaged with issues of gender representation in games. For instance, Rich Vogel (executive producer of *Bethesda*, a popular game development company) has stated that the company is taking a conscious approach to creating “aspirational” female characters with appropriate combat outfits and reduced sexualization (Batchelor 2015, para. 1). However, female representation is far from being the only issue with regards to gender and gaming (Davialt and Schott 2013). Social role theory predicts that more women need to be visible in performing the gamer role in order for the gamer stereotype to change. A more visible representation of women in gaming would likely lead to a higher number of female role models being available to girls and women.

In e-sports, female-only leagues exist, but they have not yet reached an audience similar to the almost exclusively male tournaments (Taylor 2012). Although female-only tournaments might lead to greater visibility for women players, it might also reinforce ideas about women and men having different “innate” skill levels, comparable to prevailing notions of different upper-body strength in physical sports where female-only leagues are common. As such, female-only leagues might serve to reinforce, rather than challenge, gendered gamer stereotypes.

It seems, however, that the more important underlying issue is the invisibility and marginalization of women in the private sphere of video gaming where female players are still not recognized beyond their roles as mothers, girlfriends, and casual gamers and have to face (or avoid) gender-specific harassment. Recent findings, however, give reason to hope. Burch and Wiseman (2015) found

that between 70 and 85 % of U.S.-American male adolescents want to see more female adolescents playing video games (N approx. 1400). Moreover, males already believe that females are playing all different kinds of games. For all genres in question, including those considered hardcore, at least 40 % of about 700 males in their survey agreed that females do play such games. It seems that—similar to the findings of Kowert and colleagues (2014) regarding other properties of the gamer stereotype—U.S.-American male adolescents do not endorse the male gamer stereotype anymore.

Conclusion

In the present paper, we investigated the male gamer stereotype in terms of its accuracy, persistence, consequences, and future prospects. Looking at the available body of research on games and gender, we have argued that many women play in the same way their male counterparts do. Thus, the male gamer stereotype is only partially, if at all, accurate. Numerous mechanisms, however, perpetuate the stereotype of gaming as a male activity. Men are more likely to identify as gamers and visibly perform their identity, professionally as well as privately. Conversely, a feminine identity is incongruent with the gamer identity. As a result, female gamers can only be seen as female *or* as a gamer, reinforcing the belief that being a woman and gaming are fundamentally incompatible. Finally, we have noted that video game culture is actively hostile towards women in the private as well as the professional spheres. Taken together, women are precluded from positive outcomes that are associated with being seen and accepted as true gamers, despite their objectively similar gaming behavior.

In line with social role theory, we predict that this pattern is likely to change if more women are visible in performing their role as gamers. Indeed, first evidence suggests that U.S.-American male adolescents do not endorse the male gamer stereotype anymore. This finding gives reason to hope that the gamer stereotype can be diversified and transformed in order to make video game culture a more welcoming and inclusive space for players across all gender expressions.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Appendix

Table 1 Overview of games mentioned in the present paper

Title	Release date	Publisher	Critic rating	Player rating	Description
Call of Duty	2003	Activision	91 %	85 %	The game is set in World War II, where the player assumes the role of a soldier in the U.S., the British, or the Soviet army, taking part in various historic battles of the war. Sequels of the game also feature a fictional contemporary warfare setting (the <i>Modern Warfare</i> titles), secret military operations in different time periods (the <i>Black Ops</i> titles) and science fiction settings (the <i>Advanced Warfare</i> and <i>Infinite Warfare</i> installment). Beyond the single-player campaign the games also include extensive competitive as well as co-operative multiplayer modes.
Candy Crush Saga	2012	King.com Limited	79 %	28 %	In each level of the game, the player is presented with a 2D grid of candies. Adjacent candies can be swapped to form rows of three of the same color, which are then cleared from the board.
Counter-Strike	1999	none	88 %	93 %	In each match of <i>Counter-Strike</i> , players are distributed into two teams, terrorists and counter-terrorists. These teams are pitted against each other in different game modes. The most common mode is bomb defusal, where the terrorist team tries to plant a bomb and defend it until it explodes, before the counter-terrorist team can defuse it.
Dragon Age: Origins	2009	Electronic Arts	91 %	86 %	<i>Dragon Age: Origins</i> is a single-player game set in a medieval fantasy world, where the player assumes the role of a member of a military order defending the world against demons. Compared to other role playing games, <i>Dragon Age: Origins</i> appears more “adult”, covering topics such as racism, religious fanaticism, political intrigue and sexuality, as well as depicting violence rather graphically.
Everquest 2	2004	Sony Online Entertainment	83 %	73 %	Players create an avatar which they steer through an extensive medieval fantasy world, working on tasks provided by non-player characters. Finishing such tasks or killing opponent is rewarded with in-game money as well as experience points, which enable players to level up their avatar until a maximum level is reached. Challenges remaining at maximum level include combat against other player-controlled avatars (player versus player or PvP) or large scale group efforts (with up to 24 players) to progress through a dungeon guarded by particularly strong non-playable characters.
Farmville	2010	Zynga	74 %	13 %	Players are assigned to a 2D parcel in the game world to manage a farm, i.e. grow crops and herd animals. The friends of the player can visit her parcel to help and receive rewards for doing so.
Guitar Hero	2005	RedOctane	91 %	87 %	The game is accompanied by a e-guitar shaped controller representing frets by five colored buttons and providing an additional button for strumming. The game play consists of performing songs using the controller and receiving points for precise execution. Difficulty can be adjusted resulting in an increase or decrease in the amount of notes to play; likewise, the use of frets can be increased/decreased.
Halo	2001	Microsoft Game Studios	97 %	86 %	<i>Halo</i> takes place in a science-fiction setting, where the player assumes the role of the Master Chief, a cybernetically enhanced supersoldier, to fight aliens which attack human colonies on other planets. The game also features several multiplayer modes where players either co-operatively play the campaign or battle each other.
League of Legends	2009	Riot Games	78 %	55 %	As is genre-typical, each match of <i>League of Legends</i> is about the conflict between two factions, which try to destroy the enemy’s main base. Five players are assigned to each fraction and control one avatar each to turn the conflict in favor of their fraction. The players pick their respective avatar, which differ in their abilities, prior to the match from a pre-defined pool. Similar to a role playing game, avatars gain experience and gear during the match and thus increase in strength.
World of Warcraft	2004	Blizzard Entertainment	93 %	73 %	With respect to setting and game play, <i>World of Warcraft</i> is similar to <i>Everquest 2</i> .

For each game we provide the release year (for the U.S. market), the publisher, a short description of content, as well as a game critic rating and a player rating. Both ratings have been retrieved from *metacritic.com*, a site accumulating game reviews from players as well as video game journalism outlets. Critic ratings are on a 0–100 % scale, where 100 % indicates perfect quality. Player ratings have been multiplied by 10 so as to map them to the same scale. Note that player ratings on the page are *not* obtained via representative surveys but result from votes on the page itself, which are likely subject to selection bias. This possibility is reflected by the unusually low ratings for *Candy Crush Saga* and *Farmville*, both regarded as prototypical casual games

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