

“I Play So I Am?”

A Gender Study into Stereotype Perception and Genre Choice of Digital Game Players

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Abstract

Over the past decade, a growing number of women have started playing digital games. However, stereotypes are still prevalent in game culture. This study aims to gain insight into these practices by looking at gaming stereotypes on two different, yet interrelated, levels. First, we inquire into perceptions of gamers regarding gender-related and general gamer stereotypes and how these relate to playing frequency. Second, game genre choice is investigated in light of player's gender and how this is associated with playing motivations. Results of a survey study ($N = 962$) suggest that high frequency male players hold the least stereotypical ideas about digital gamers, while high frequency female players disagree the most with gender-related stereotypical beliefs. Additionally, we found that high frequency female players are more strongly drawn towards specific game genres, suggesting that playing motives of these gamers are higher than their beliefs that gaming is a typically male pursuit.

Keywords: digital games, game genres, game motivations, gender, stereotypes

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As digital games become more widespread in the lives of many people, game culture persists to hold and distribute several stereotypical beliefs about who counts as a gamer and who does not (Shaw, 2011). Many of these stereotypical practices, in which differences are articulated and thus re-produced, are based on the player's gender (Hayes, 2005). This is rather odd given that gaming as a pastime is now more or less equally distributed across gender. The annual report of the Entertainment Software Association (2013), for example, demonstrates that the American gamer population consists of 47% female and 53% male players. The Interactive Software Federation Europe (2012) further notes that 43% of all women aged 16 to 64 are playing digital games. What these growing numbers do not explicate, however, is how cultural and social contours of game culture are defining the game experience of female players. Throughout this paper, we discuss how and which stereotypes are limiting women to play digital games, and look at so-called gender differences in playing styles and preferences from a social constructionist stance. Moreover, we look at the interplay between gender and motivations for playing games. The aim of this study is thus twofold: first, we explore player's gender and playing frequency in relation to perception of gender stereotypes in game culture. Concretely, we argue that stereotypical beliefs about gaming not only depend on player's gender but interact with playing frequency. Second, stereotypical gender preferences are investigated in light of playing motivations and game genre frequencies. We specifically aim to provide a nuanced understanding of gender effects on intrinsic playing motivations for determining game genre frequencies. This further allows us to investigate whether women who often play “masculine” game genres have higher motivational scores because of their atypical gender play. Hence, this study explores stereotypical gender beliefs across high and low frequency players and examines how gender and motivations are related for choosing game genres based on a quantitative approach.

Gender Stereotyping in Digital Games

Stereotyping is a signifying practice that reduces people to some essential characteristics and abilities (Hall, 2003). Although stereotypes commonly generate negative connotations, it is also an ordering process in which people make sense of the world (Dyer, 1977; Jacobson, 2005). This process of meaning making is better understood in terms of *typing*, which is necessary in order to assign people to wider categories such as group membership based on gender, age, class etc. (Dyer, 1977; Hall, 2003; Van Damme, 2013). According to Hall (2003), stereotyping is different from typing in that it naturalizes differences and deploys a strategy of “splitting”. Put differently, it serves the maintenance of symbolic boundaries between those who belong and those who are excluded. This point makes clear that stereotyping is related to symbolic power “since only those with such power can exercise and enforce the practice of stereotyping” (Van Damme, 2013, p. 12). When looking at gender, most societies generate inequality whereby men exert power over women (Siann, 2013). Gender stereotyping, then, functions as a mechanism to exercise symbolic power by making assumptions based on someone’s gender (Jacobson, 2005). These assumptions, albeit socially constructed, can have detrimental consequences for women being “threatened” by negative stereotypical beliefs. Literature on stereotype threat, for example, showed that the risk of confirming a negative stereotype about one’s group is enough to impair task performance (Steele & Aronson, 1995), lower performance expectations (Cadinu, Maass, Frigerio, Impagliazzo, & Latinotti, 2003), and entail negative emotional responses (Keller & Dauenheimer, 2003). It is argued that such practices could eventually lead to disidentification with a particular domain or field (Steele & Aronson, 1995).

Gender stereotyping is a common practice in and around digital game culture. Carr (2005) talks about “the alignment of gaming technology with one gender” (p. 468) as a result of historical practices and economic decisions contributing to the association between masculinity and digital games. Although recent studies report higher numbers of female players (e.g., Entertainment Software Association, 2013), the discourse of game culture is still stereotypically male, young, heterosexual, and white (Nakamura, 2012; Schut, 2006; Shaw, 2013). This creates a symbolic boundary between those legitimate of claiming gamer identity and those denied doing so. This is not to say that the

disciplinary power of discourse cannot be resisted or subverted however (van Zoonen, 2000). Countermoves such as Grrl Gamers, Riot Grrls, and Frag Dolls have proven successful all-female game communities, resisting a male hegemony of play (Jenson, de Castell, & Fisher, 2007). Nonetheless, woman gamers are frequently reminded of their unconventional position within a digital game culture. One argument is that much game content draws on masculine (heterosexual) fantasy by portraying stereotypical and sexualized images of women (Schut, 2006). In addition, the vast majority of female game characters are unplayable or supplemental, often depicted in helpless and innocent roles (Miller & Summers, 2007). Another argument is that women engaging in game play frequently suffer from banter and comments on their identified presence; whether they are in a virtual environment, a domestic space, or a public setting (Bryce & Rutter, 2003; Consalvo, 2012; Ross, 2010). These issues give rise to the stereotypical belief by both men *and* women of digital gaming being a particularly masculine pastime (Selwyn, 2007). Related stereotypical gender ideas are concerned with perceptions of men being better at playing games and women having to spend their time on other, more productive activities such as household chores (Enevold & Hagström, 2009; Selwyn, 2007; Williams, Consalvo, Caplan, & Yee, 2009). Moreover, it is argued that women experience a “double stereotyping” while engaging in game culture. Not only do they encounter discrimination based on their gender, they also suffer from the low pop culture status of digital gaming (Gyongran, 2008; Yates & Littleton, 2001). Being an active gamer is socially disvalued because there are a lot of negative connotations about gamers such as “geeky” or “socially inept” (Kowert, Festl, & Quandt, 2013; Shaw, 2013). These stereotypes position game culture as peripheral to mainstream media culture and frame it as a relatively unimportant leisure activity (Kowert, Griffiths, & Oldmeadow, 2012; Shaw, 2011). However, in the study of Royse, Lee, Undrahbuyan, Hopson, and Consalvo (2007), it was asserted that high frequency female players do not epitomize the stereotypical beliefs attributed to gamer identity. For these players, digital games were not a problematic technology as previously mentioned. Non-gamers, on the other hand, held the most critical and negative perceptions of gaming, giving priority to other, “real-world” activities. While the female players looked at game culture as fairly androgynous, the non-gamers refuted it as a completely masculine

domain. These findings suggest that attitudes towards digital gaming are being negotiated among women with different game playing experiences.

The first goal of our investigation is therefore to examine the role of playing frequency and player's gender in relation to reporting stereotypical perceptions of digital gaming. Although various studies have investigated game players' stereotypical attributes (e.g., Griffiths, Davies, & Chappell, 2003; Kowert et al., 2013), few studies have looked at the attitudes of players themselves towards gaming stereotypes. Moreover, given that these studies mostly deploy a qualitative approach (e.g., Hayes, 2005; Royse et al., 2007), we are interested to provide a quantitative empirical account of internalized general and gender-specific gaming stereotypes by players. Concretely, this study will contribute to the field of gender game research by exploring intra- and inter-gender differences in attitudes towards gaming between low frequency and high frequency players. We therefore propose the following research question:

RQ1: How do player's gender and playing frequency relate to perception of gamer stereotypes?

A Social Constructionist Perspective on Gaming and Gender

To gain insight in gender differences and associated stereotypes, we need a solid understanding of what "gender" is. The pioneering work of social constructionists West and Zimmerman (1987) is particularly interesting in this respect. From their perspective, gender is "the activity of managing situated conduct in light of normative conceptions of attitudes and activities appropriate for one's sex category" (p. 127). In other words, they suggest that gender is rather something people *do* than the property of individuals; we *are* not male or female but we are doing maleness or femaleness. It is also a social doing; gender is recurrently performed in interactions and assessed by others based on normative conceptions of femininity or masculinity (West & Fenstermaker, 1995; West & Zimmerman, 1987). Accordingly, Butler (1990) talks about the concept of "gender performativity" stating that there is no natural substance to being a man or a woman. Gender only seems natural because of the "stylized repetition of acts through time" (p. 141), which "enables, produces, and regulates the discursive notion of woman" (Duits, 2008, p. 39). This constructs a compulsory binary

gender system in which there are ostensibly essential differences between men and women. This binary then produces and sustains stereotypical opposites of what is perceived as typically feminine and masculine while doing gender (Brickell, 2006; Van Damme, 2013).

Gendered Game Preferences

In this socially constructed reality, there are several gender stereotypes with regard to playing styles and preferences of male and female gamers. Many studies indicate a pattern in which women are discouraged by violent and competitive gaming environments while men seem to embrace such game-play mechanics (e.g., Kafai, Heeter, Denner, & Sun, 2008). Attractive games for women seem to be focused on social interaction, non-purposeful exploration, and collaborative instead of competitive gaming elements (Hartmann & Klimmt, 2006; Ray, 2004; Schott & Horrell, 2000). These stereotypical ideas about female game preferences have led to the development of typical “girl games”, following female themes such as appearance, fashion, and relationships (Kafai et al., 2008). Although these games likely presented an introduction to the medium for many female players, some authors have criticized them for creating a disparity between games for girls and games for “real”, male players (De Castell & Jenson, 2003; Dickey, 2006). According to Shaw (2011), targeted marketing of groups based on stereotypical notions of gender further promotes the marginalization of women as gamers. She argues that “marking ‘girl gamers’ as a market, whether women feel adequately appealed to by those attempts or not (often not), makes gender a salient category when talking about games” (Shaw, 2011, p. 39). In other words, although the game industry aims to be more inclusive, its efforts seem to reproduce stereotypical ideas about womanhood enhancing boundaries between those who have the right to claim gamer identity and those who do not.

Several authors have argued that the constructed gender binary in game culture has taken on a new form with the rise of the “casual game genre” (e.g., Consalvo, 2012; Vanderhoef, 2013). This genre, characterized by its positive fiction, short play time, and low complexity, seems to be especially popular with a non-traditional gamer audience such as female and older players (De Schutter, 2011; Winn & Heeter, 2009). Casual game players have often been described against a group of “hardcore

players”, referring to players who prefer stereotypical masculine themes, enjoy difficult games, play large numbers of games, and invest much time and resources in their hobby (Juul, 2012). As this definition already shows, there is something distinct about membership of either groups. Whereas the discourse of casual play is mostly associated with femininity and trivial, easy-fun, hardcore play stands for masculinity and is “celebrated as the authentic and superior game design and experience” (Vanderhoef, 2013, para. 1). Consequently, a new binary in which one side is privileged (i.e., “masculine hardcore gamers”) over the other (i.e., “feminine casual gamers”) gets installed and reproduces seemingly obsolete gender inequalities in game culture (Vanderhoef, 2013). Casual games are then “deemed outside gamer subcultural capital”, and its players, mainly women, are denied or even self-refusing gamer identity (Shaw, 2013, Performing subcultural capital, para. 6).

In other words, many shared ideas (i.e., stereotypes) about what women or men like in digital games are based on social constructions, situated in interaction with others and (re-)producing gendered differences in game genre preferences. Previous studies into these game genre preferences have confirmed playing behavior conform gender prescriptions, showing that women prefer casual, soft game genres and men core, action-based genres (Entertainment and Leisure Software Publishers Association, 2004; Pew Internet & American Life Project, 2008). In line with these findings, we expect that gender will be an important predictor of game genre preferences. In this study, however, we do not limit ourselves to single game genres. Instead, we look at genre choice conceptualized as genre components, accounting for the variety of content that is played and the time spent with this content. Our first hypothesis is:

H1: Player's gender will predict game genre playing frequencies of digital gamers

Motivations as Moderators for Gendered Preferences

Simplistic and stereotypical ideas about gamers as addicts or aggressors ignores the fact that people play digital games for a wide range of reasons and motives (Yee, 2006). Game playing motivations have been proven to be important determinants for digital play (e.g., Olson, 2010; Ryan, Rigby, & Przybylski, 2006; Sherry, Lucas, Greenberg, & Lachlan, 2006). Moreover, research has indicated that

content is important when considering game playing motivations (Schneider, Lang, Shin, & Bradley, 2004). As people choose to play games with various types of content, gaming motives seem to differ depending on game genre preferences (Scharnow, Festl, Vogelgesang, & Quandt, 2012). Tanis and Jansz (2008), for example, found that players of role-playing games (RPGs) and massively multiplayer online role-playing games (MMORPGs) scored lowest on the competition motive, but highest on the challenge motive, while the opposite applied to people playing first-person shooters. These findings show that, besides gender, people are likely to choose a variety of game genres based on their motivational layout. In line with this argument, we argue that play motives are crucial when considering game genre frequencies. Our second hypothesis is:

H2: Game motivations will predict game genre playing frequencies of digital gamers

Based on the literature, it can be argued that digital games as a technology is gendered and that its production is based on stereotypical beliefs about distinct male and female gaming preferences. We have also argued that game culture, consciously or not, keeps women out by constructing specific (superior) game genres for men. And yet, women are playing digital games and continue to do so. Taylor (2008) even talks about “one of the most dedicated player demographics around” (p. 54), indirectly stating that women’s motivations for playing transcend the experienced cultural and social thresholds. But is this actually true? Some studies found, for example, that women are less motivated than men to play digital games (e.g., Hartmann & Klimmt, 2006). Lucas & Sherry (2004) showed that women scored lowest on all investigated gaming motivations, including challenge, arousal, diversion, fantasy, competition, and social interaction. However, although they controlled for amount of game play, little attention has been paid to look at how genre frequencies are determined by the interplay between playing motivations and player’s gender. This study attempts to fill this gap and investigates how playing motivations of both men and women (differently) define the amount of genre play. It could be, for instance, that traditional differences between male and female preferences are modulated by motivations for playing. Moreover, given the gender bias in genre play, we are interested to know whether women who play more stereotypical “masculine” genres (e.g., action-based games) are more motivated to do so than their male peers. Concretely, the second research question is:

RQ2: What is the relationship between player's gender and playing motivations in predicting game genre frequency?

Method

Sampling and Procedure

In this study, we drew upon a sample of 962 Flemish game players, recruited on a broad range of online (game) forums and websites to fill out an online survey. Flyers with the questionnaire URL were also distributed on the University Campus [name left out for review integrity]. Given that this study focused on people who have some experience with digital games, we had to omit those respondents who indicated they never played games (2%). Nine percent of the subjects indicated that they rarely played games, 12% played regularly, 31% played often, and 46% played games on a daily basis. Overall, the sample comprised more male (64.20%) than female respondents (35.80%). The mean age of our respondents was 24 years ($SD = 6.49$), with a range from 11 to 65.

Measures

Stereotypical beliefs about gamers and attitudes towards gaming were measured by five Likert-scale items ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items were “All gamers are nerds” or “Boys are better at gaming than girls”.

Gaming frequencies of 16 different kinds of game genres were measured using a five-point ordinal scale with a range from 1 (*never*) to 5 (*every day*). In order to reduce these game genres to a more reasonable number of categories, we made use of principal component analysis (PCA, varimax rotation), using the raw-data matrix of polychoric correlations for categorical variables as input (Kolenikov & Angeles, 2009). Five components were found for 14 game genres: (1) casual genres (e.g., puzzle games, card games); (2) heavy action genres (e.g., survival horror games, shooting games); (3) growth genres (e.g., MMORPGs, strategy games); (4) linear progression genres (e.g., adventure games, platform games); and (5) sports genres (e.g., sports games, racing games). The total variance explained was 61.26% and all factor loadings were greater than 0.6. Statistical differences in

playing frequencies were found between men and women concerning these genres. Concretely, men played more heavy action genres ($U = 60193$, $p < .001$), growth genres ($U = 75684$, $p < .001$), and sports genres ($U = 85421$, $p < .001$). Women, on the other hand, played more casual game genres ($U = 80479$, $p < .001$). No significant differences were found for playing linear progression genres ($U = 104521$, $p = .618$).

We also looked into motivations for playing games by using the *Video Game Intrinsic Motivation Questionnaire* of Van Looy (2010). This five-point Likert motivation scale is based on the previous work of Van Looy, Schuurman, De Moor, De Marez, and Courtois (2010), who in turn revised the original gameflow heuristics of Sweetser and Wyeth (2005). By means of PCA (varimax rotation) on 31 items, we distinguished between five intrinsic game motivation components: (1) Immersion ($\alpha = .86$); (2) Challenge ($\alpha = .78$); (3) Competition ($\alpha = .73$); (4) Social contact ($\alpha = .84$); and (5) Freedom/Control ($\alpha = .71$). All components had eigenvalues greater than 1.0 and the total variance explained was 57.74%. Three items were removed because of factor loadings smaller than 0.5 (“I like to have control over the game”, “Gaming is nothing more than a means to pass the time”, and “I always game against the computer”) whereas the remaining 28 items had factor loadings greater than 0.5. Two items constituted an unexpected factor with regard to playing games against the computer (“I get bored quickly when playing against the computer” and “I like to win against the computer [rec]”), but this factor was not taken up due to low internal consistency ($\alpha = .51$).

Data Analysis

A 2 (gender: male versus female) x 2 (playing frequency: low versus high frequency players) factorial ANOVA was used to examine the effects of gender and playing frequency on stereotypical beliefs about digital gaming. In this study, low frequency gamers were considered as players who play less than once a week and high frequency gamers as players who play at least once a week. Post-hoc tests were calculated using the Bonferonni correction, which guards against Type I error rate. Statistical significance for these tests was set at $p < .05$.

Additionally, binary logistic regression was conducted to predict game genre frequency components (i.e., dependent variables) using gender, game motivations, and interactions between gender and game motivations as predictors. Dependent variables were recoded into dichotomous variables to facilitate interpretation as well as to better meet assumptions for subsequent analyses. Concretely, based on a median split, cases were divided into low versus high frequency players of specific game genre components (e.g., a value of zero refers to a low frequency player of casual game genres while a value of one points to a high frequency player of casual game genres).

Results

Stereotypical Beliefs

Factorial ANOVA was deployed for measuring players' attitudes towards general gamer stereotypes and gender-related gaming stereotypes. As shown in Table 1, there were only two significant main effects of gender for the items "Gaming is equal to any other form of pastime" ($M_{\text{men}} = 4.11$ vs. $M_{\text{women}} = 3.61$) and "Games cause violent behavior" ($M_{\text{men}} = 1.83$ vs. $M_{\text{women}} = 2.45$). Both items also displayed main effects of playing frequency, showing that high frequency players agree more ($M = 4.17$) with gaming being equal to other hobbies than low frequency players ($M = 3.55$), but less ($M = 1.82$) with gaming causing violent behavior compared to low frequency players ($M = 2.47$).

As further displayed in Table 1, playing frequency had a significant main effect on all other items, showing that low frequency players agreed more than high frequency players on gamers being nerds ($M_{\text{low}} = 1.85$ vs. $M_{\text{high}} = 1.39$), gaming being a pastime for boys ($M_{\text{low}} = 2.31$ vs. $M_{\text{high}} = 1.85$), and boys being better at gaming than girls ($M_{\text{low}} = 2.64$ vs. $M_{\text{high}} = 2.25$).

Three significant interaction effects were found between player's gender and playing frequency (see Figures 1-3). First, for the item "Games cause violent behavior", post-hoc tests demonstrated that low frequency female players ($M = 2.88$) agreed significantly more compared to all other groups, while high frequency male players ($M = 1.61$) had significantly lower ratings than other types of players. No significant differences were found between high frequency female players ($M = 2.03$) and low frequency male players ($M = 2.06$). Second, an interaction was found for the item "Gaming is a

pastime for boys”. Significant post-hoc tests exposed that high frequency women ($M = 1.72$) disagreed the strongest with the statement compared to all other player groups. While Figure 2 illustrates a reversed pattern for low frequency female players ($M = 2.47$), they only significantly differed from high frequency male ($M = 1.98$) and female players and not from low frequency male players ($M = 2.16$). A third statistically significant interaction was found for the gender stereotype that boys are better at gaming than girls. Again, Figure 3 displays an opposed pattern, showing that high frequency female players ($M = 2.03$) have the lowest ratings while low frequency female players ($M = 2.78$) have the highest scores compared with every other group. Pairwise comparisons revealed that high frequency female players significantly differed from other players, yet only marginally significant from low frequency male players ($M = 2.51$, $p = .05$). Whereas the scores of low frequency female players were significantly higher compared to high frequency male ($M = 2.47$) and female players, they did not differ from low frequency male players.

(Table 1 and Figures 1-3 go here)

Gender, Game Motivations, and Game Genre Choice

Table 2 summarizes the results of a logistic regression on gender, game motivations, and their interactions for predicting game genre frequency (low vs. high). In what follows, we describe the main effects of gender and game motivations separately from the interaction effects even though both were included in the executed regression models.

(Table 2 goes here)

Main effects. Regarding main effects of gender, only the regression models of growth genres and linear progression genres revealed significant gender effects, showing that men were more likely to be high frequency players of these genres than women. Concretely, the odds ratios tell us that as gender changes from male (0) to female (1), the change in the odds of being a high frequency player compared to being a low frequency player is 0.04 for growth genres and 0.07 for linear progression genres. Or put differently, the odds of a man being a high frequency player compared to not being a high frequency player are for growth genres ($1/0.04 =$) 25 times and for linear progression genres

($1/0.07 \Rightarrow$) 14 times more likely than for a woman. Additionally, our results showed a marginally significant main effect of gender on heavy action genres ($p = 0.05$), indicating that men were more likely to be high frequency heavy action players than women. No other main effects of gender were found.

Furthermore, the analyses revealed significant main effects of several game motivations for each game genre component. For casual game genres, the positive regression coefficient indicated that an increase of one unit in the control motive produces a change in the odds of being a high frequency casual game player is 1.44. Frequencies of heavy action genres were significantly predicted by higher values on competition, challenge, and social contact motives. Also, the odds of being a high frequency growth genre player rise when scores are increasing on the motivations control, challenge, social contact, and immersion. Interestingly, people who scored higher on the competition motivation were less likely to be high frequency growth genre players. This is in line with Tanis and Jansz' study (2008) which revealed that players of RPGs and MMORPGs scored lowest on this motivation. A similar result was found for linear progression genres, further showing that an increase in challenge and immersion produced a higher probability of being a high frequency player of this genre. Higher scores on the competition motive significantly predicted higher odds for being a high frequency sports genre player, while people who had higher ratings on the immersion motive were less likely to play this genre frequently.

Interaction effects. Some of the aforementioned effects should be interpreted with caution, however, given that some findings were superseded by the interaction between gender and game motivations. Besides heavy action genres, interactions were found for the remaining four game genre components. Of all eight statistically significant interactions, six showed that, as a specific motivation score increased, women were more likely to be high frequency players than men. Concretely, for casual game genres, the interaction between gender and immersion indicated that as gender changes from male (0) to female (1) in combination with immersion increasing, the change in the odds of being a high frequency casual player compared to being a low frequency casual player is 1.88. Similar significant interactions were found for the probability of being a high frequency growth genre player,

linear progression genre player, and sports genre player. Furthermore, there were significant interactions between gender and the social contact motivation for determining growth genre and linear progression genre play. In both cases, higher ratings on social contact had a larger effect on women compared to men for being high frequency players. The only significant interactions indicating a stronger effect for men were those associated with the control motivation. Specifically, as scores on the control motive increase, men were more likely to be high frequency casual and sports genre players than women.

Discussion

This paper contributes to the field of gender and games studies by investigating stereotypical practices in digital game culture based on a quantitative survey study. In a first stage, we looked at how player's gender and general playing frequency determine stereotypical (gender) beliefs about gaming. In a second phase of this study, genre preferences were examined in light of player's gender and intrinsic playing motivations. This allowed us to better understand gendered patterns of playing styles and how these are modulated by playing motivations of particular game genres. Overall, this study provides novel evidence that frequent female players resist gender stereotypes in games and that some of their motivations for playing certain genres surpass those of male players.

The first research question concerned the relationship between player's gender and playing frequency for the perception of general and gender-related gamer stereotypes. Generally, we found that most investigated stereotypical beliefs depend on the intersection between gender and playing frequency. While high frequency male players disagreed the most with general gamer stereotypes, high frequency female players held the least gender-related stereotypical beliefs. This is in accordance with the study of Royse et al. (2007) who observed that frequent female players construct a gendered self that does not reflect a traditional masculine/feminine binary. On the contrary, as demonstrated in our study, these players seem to resist the dominant gender discourse in and around digital game culture. This is not unsurprising given the fact that high frequency female players invest heavily in their hobby and therefore may try to refute the allegations directed at their group. Findings further

suggested that female low frequency players, though not always significantly different from male low frequency players, held the most stereotypical beliefs with regard to gaming. A possible explanation for this could be that these players suffer from “double stereotyping” as explained in our literature review (Gyongran, 2008). While high frequency female players employ a kind of “fight response” towards stereotypical ideas, low frequency female players may choose to distance themselves from a gamer identity and thus from its negative associated beliefs. This response act is similar to a phenomenon described in stereotype threat literature as “opting out”, referring to a coping strategy whereby “threatened” individuals eschew the negative qualities of one’s group identity (Cohen & Garcia, 2005). Moreover, given the gender bias in gaming, it could be that these women are more concerned with “performing gender” in accordance with normative conceptions of leisure activities instead of putting themselves in a vulnerable position (Butler, 1990).

Furthermore, we expected that gender (H1) and playing motivations (H2) would predict game genre frequencies. These hypotheses were only partly supported. Although not all identified game motivations accounted for genre play, each genre component could be predicted by one or more playing motivations. Whereas this study did find stereotypical gender genre preferences, only two main effects of gender were significant when controlling for motivations and interactions between player’s gender and motivations, showing that men were more likely than women to be high frequency players of growth genre games and linear progression genre games. No gender differences were found for casual genres, sports genres, and heavy action genres. These findings suggest that assumed gender differences in playing styles are often based on socially constructed ideas of male/female preferences and do not necessarily reflect what, where, and how individuals are really playing. For example, previous research has indicated that “gendered preferences” are often based on assumptions that disregard previous playing experience and acquired access to certain game types (Carr, 2005; Hayes, 2005). It must be noted, however, that people enjoying typical genres allied to their gender should not be dismissed as this would re-install a hierarchical distinction between games that belong to gamer subcultural capital and those that do not (Shaw, 2013; van Zoonen, 2000).

Finally, a second research question focused on the relationship between player's gender and playing motivations to predict game genre playing frequencies. Interestingly, we found rather non-stereotypical game play habits of both men and women. Our results revealed significant interactions showing that the effect of motivations on genre playing frequency were larger for female players than for male players. Whereas the control motivation did affect men in a stronger sense to play casual and sports genres, women were more strongly drawn towards casual genres, growth genres, linear progression genres, and sports genres on the basis of social contact and/or immersion motives. These findings could signify that high frequency female players' motivations for playing these genres exceed stereotypical beliefs of gaming being a male pastime. Given the gender bias in game culture, it is possible that frequent female players have to be strongly motivated to pursue their hobby. Our previous findings already indicated that high frequency female players are reluctant towards gender-related stereotypes and this is further reflected in their motivations for playing digital games. As previously stated by Taylor (2008), these results seem to confirm that women are a highly motivated player group despite of social and cultural thresholds in game culture.

Some limitations of this study should be mentioned however. First, we should note that player's gender is just one dimension to take into account when discussing gaming stereotypes. Other demographic variables such as ethnicity, social class, and age could provide us with a more thorough understanding of stereotypical practices in game culture. Second, this study may not represent the whole gamer population because individuals were recruited based on respondents' self-selection. Third, using a cross-sectional research design prevented us from making causal inferences. To make up for this flaw, it is suggested to further explore gaming stereotypes by means of qualitative in-depth research. This will not only allow to further elaborate on contextual factors but also to provide a clear account of which gamer stereotypes are prevalent nowadays. We are aware that this study only provides a glimpse of stereotypical gamer perceptions and that many other common ideas, including positive ones, may be circulating in contemporary society.

Despite of these limitations, the present study has elucidated the interplay between stereotypical gamer beliefs, playing frequency, and playing motivations with focus on player's gender. We believe

that the research findings provide more insight into female game play and how woman gamers themselves negotiate and deal with stereotypical beliefs in game culture. Moreover, results could be particularly interesting for game designers aiming to reach a more inclusive audience; for example by implementing more immersive content elements or offering extensive possibilities for social contact in digital games.

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Table 1

Factorial ANOVA: 2 (Gender: Male vs. Female) x 2 (Playing Frequency: Low vs. High) Design

Five-point likert items	Player's gender		Playing frequency		Two-way interaction	
	<i>F</i> (1, 958)	<i>r</i>	<i>F</i> (1, 958)	<i>r</i>	<i>F</i> (1, 958)	<i>r</i>
Gaming is equal to any other form of pastime	37.44**	.19	57.81**	.24	n.s.	
All gamers are nerds	n.s.		49.88**	.22	n.s.	
Gaming is a pastime for boys	n.s.		27.53**	.17	10.82**	.11
Boys are better at gaming than girls	n.s.		14.03**	.12	11.06**	.11
Games cause violent behavior	51.30**	.23	55.93**	.23	5.18*	.07

Note. *r* = Pearson's correlation effect size; n.s. = not statistically significant

* $p < .05$. ** $p < .001$.

Table 2

Results Logistic Regression for Expected Game Frequency (Low vs. High) of Genres on Gender and Game Motivations

	Casual Genres			Heavy Action Genres			Growth Genres			Linear Progression Genres			Sports Genres							
<i>Variable</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>B</i>	<i>SE</i>	<i>OR</i>					
Gender (base = male)	.77	1.18	2.17	-3.02	1.55	.05	-3.36	*	1.51	.04	-2.65	*	1.25	.07	-1.66	1.21	.19			
Competition	-.11	.14	.90	.48	***	.15	1.62	-.54	***	.15	.59	-.38	**	.14	.68	.59	***	.14	1.81	
Control	.37	**	.15	1.44	-.05	.15	.96	.43	**	.15	1.54	.14		.15	1.15	.23		.15	1.26	
Challenge	.06		.16	1.06	.37	*	.17	1.45	.51	**	.16	1.67	.41	**	.16	1.51	-.21		.16	.81
Social Contact	-.04		.12	.96	.48	***	.12	1.61	.35	**	.12	1.41	-.19		.11	.83	.07		.11	1.07
Immersion	-.14		.13	.87	.17		.13	1.19	.47	***	.13	1.60	.28	*	.12	1.32	-.36	**	.12	.70
Gender*Competition	-.22		.24	.81	-.30		.28	.74	-.51		.29	.60	-.11		.25	.90	-.32		.24	.73
Gender*Control	-.63	**	.25	.53	-.24		.31	.79	-.39		.30	.67	-.34		.26	.71	-.67	**	.26	.51
Gender*Challenge	.16		.26	1.17	.44		.34	1.55	.41		.33	1.50	.02		.28	1.02	.51		.28	1.67
Gender*Social Contact	.19		.18	1.21	.20		.22	1.22	.70	**	.22	2.02	.48	**	.19	1.62	.27		.19	1.30
Gender*Immersion	.63	**	.21	1.88	.35		.26	1.42	.64	**	.26	1.89	.84	***	.24	2.30	.48	*	.22	1.62
Nagelkerke pseudo R^2	11%			36%			32%			14%			11%							
Chi-square	$\chi^2 = 80.60$, df= 11, $p < .001$			$\chi^2 = 297.82$, df= 11, $p < .001$			$\chi^2 = 264.90$, df= 11, $p < .001$			$\chi^2 = 105.01$, df= 11, $p < .001$			$\chi^2 = 82.85$, df= 11, $p < .001$							

Note. B = regression coefficient; SE = standard error; OR = odds ratio (Exp[B])

* $p < .05$. ** $p < .01$. *** $p < .001$.

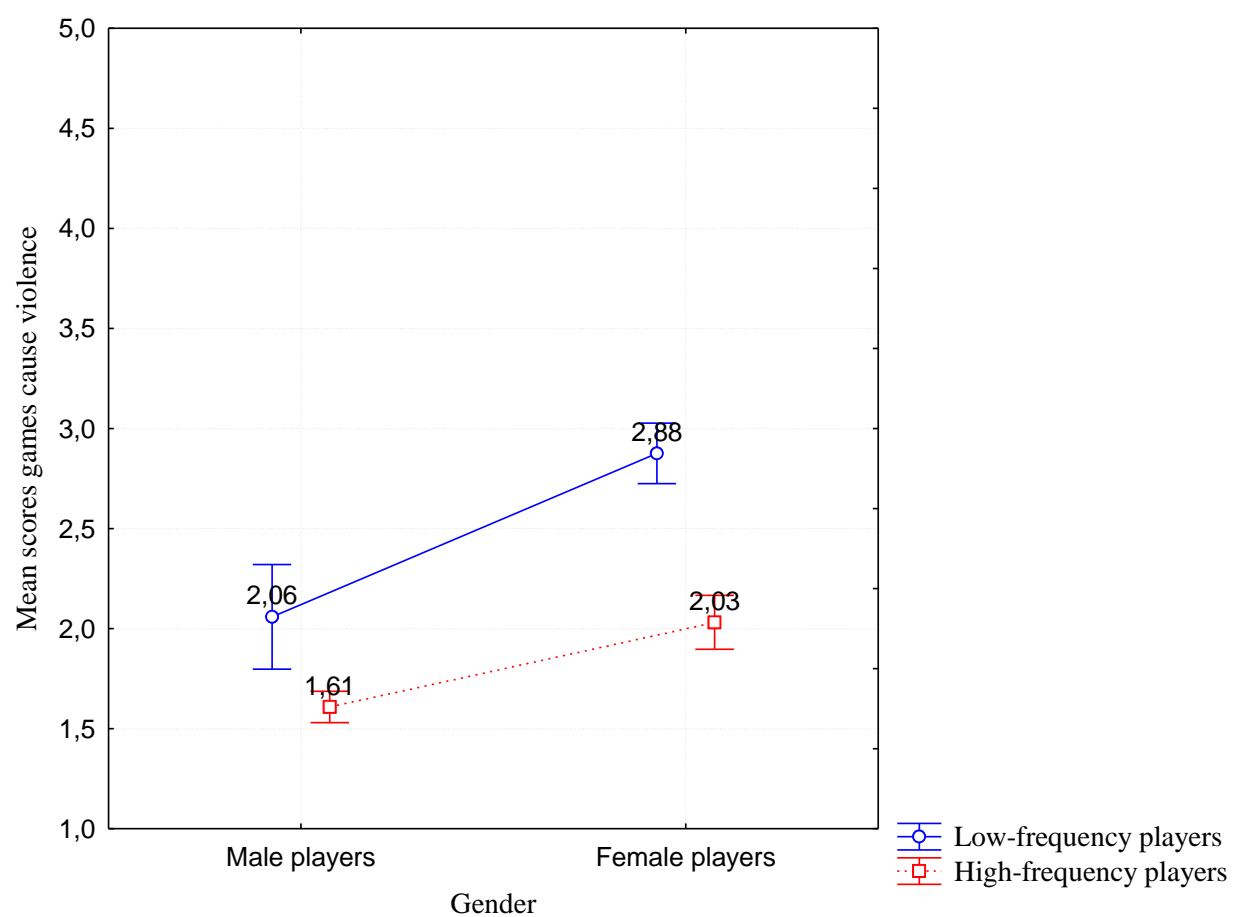


Figure 1. Interaction between gender and playing frequency on “Games cause violent behavior”.

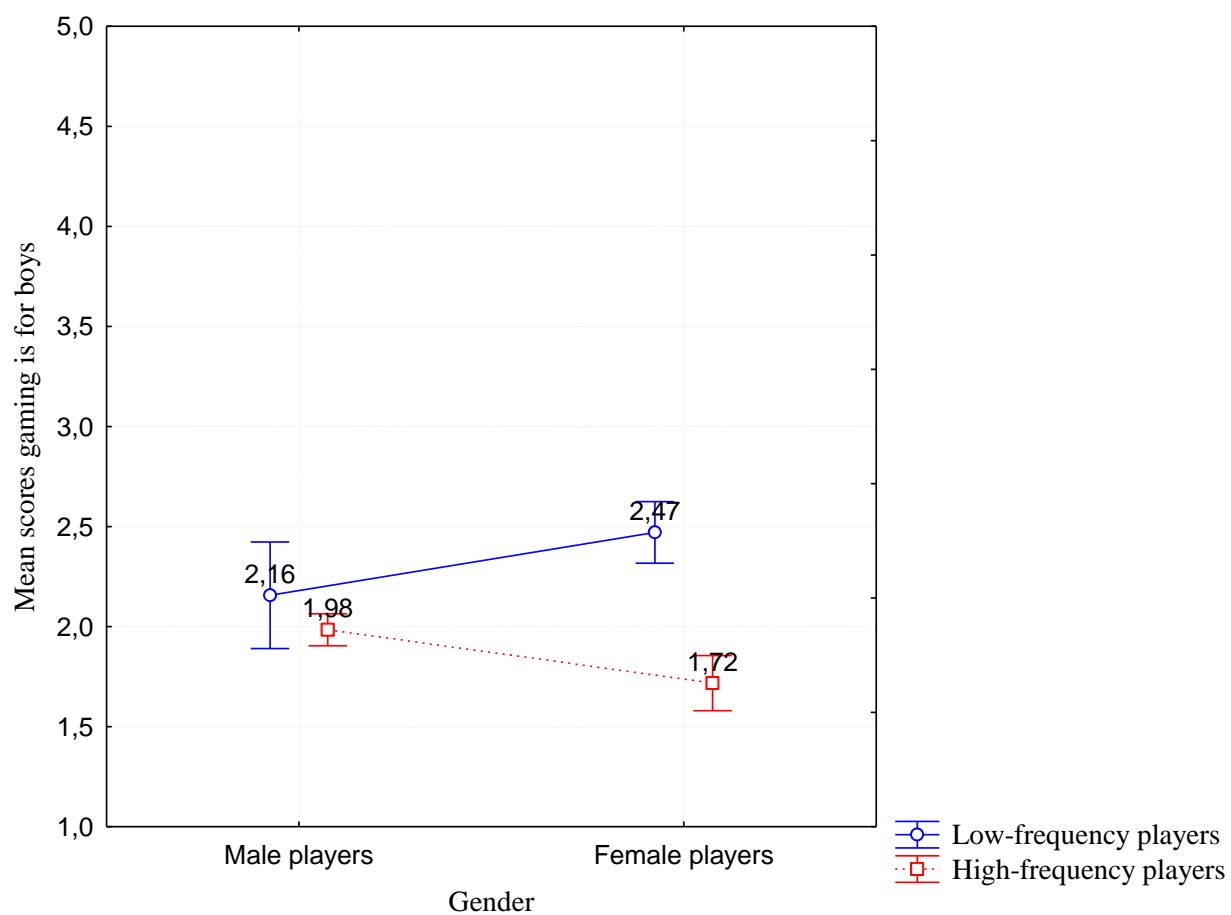


Figure 2. Interaction between gender and playing frequency on “Gaming is a pastime for boys”.

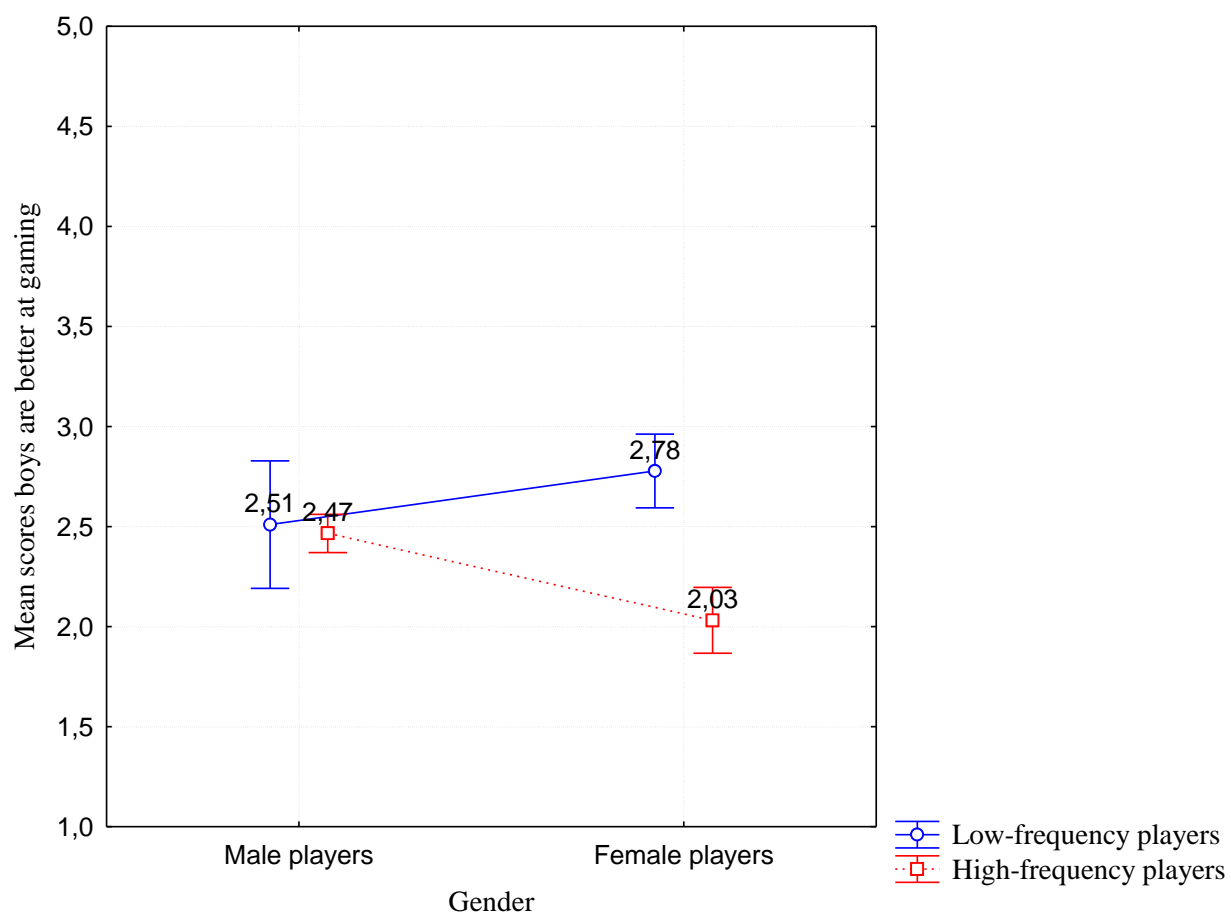


Figure 3. Interaction between gender and playing frequency on “Boys are better at gaming than girls”.