

Women Keep it Real: Avatar Gender Choice in *League of Legends*

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Abstract

This paper examines avatar gender choice within a competitive avatar use context in which avatar gender is not equivalent across avatar functions. In data from the game *League of Legends* ($N = 15,392$) reflecting over 5 million avatar gender choices, women were found to have stronger preferences for avatar gender consistency than men. Further, women tended to choose female avatars at twice the available rate offered by the game, while men chose male avatars at a rate approximately the same as the proportion offered. These findings support the argument that women experience more pressure than men do to perform their gender identities overtly, even in competitive games where avatar choice is mostly functional and avatar gender is fixed within specific characters. A practical implication is that by offering a wider range of female avatar and character options, game designers could likely attract greater female audiences without significant loss of male players.

Keywords: Avatars, avatar gender, log-data analysis, League of Legends

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Although no one is able to choose their birth gender, online environments offer us the opportunity to swap, experiment, or maintain. The freedom and fluidity of avatar gender choice (treated here as using a male or female avatar)^A has titillated the public and fascinated media researchers for years, though large-scale testing of the concept is a relatively recent development. Studies on this phenomenon have illuminated the myriad possible reasons behind avatar gender choice, from identity expression to social influence. Findings from such research suggest that women choose consistently gendered (i.e., female) avatars more frequently than men, who are more likely to use gender-swapped (i.e., female) avatars. Previous research has examined these choices in environments where actual avatar abilities are, in effect, controlled (i.e., despite gendered appearances, avatars have equal abilities)^{1,7-13}. In this examination, we offer a test with two differences. First, the present test uses data at large scale, combining both survey and behavior logs. Second, we conducted the test in a much noisier environment where avatar choice is relatively functional and avatar gender is fixed within specific characters. If we find the same patterns of gender choice in this context at large scale, it offers strong support that avatar gender choice has less to do with the environment and more to do with the gender-related socialization players bring to the game.

^A The present research considers avatar gender as a binary characteristic, consistent with previous research on games in which gender is an explicit choice between two options (i.e., male/female).¹⁻³ Avatars are taken at face value and are presumed to represent typical associations between sex (e.g., female) and gender (e.g., woman, girl), though we recognize that the term gender may refer to non-binary identity characteristics in other contexts⁴⁻⁶.

Identification Contributes to Avatar Gender Choice

Identification with an avatar, defined here as the perceived merger between the user and avatar's identity, goals and experience¹⁴, has been cited as a significant motivator of avatar use¹⁵ and is associated with enjoyment and a sense of flow^{16,17}. This helps explain why people often choose avatar gender to be consistent with their own gender identity^{7,8,18-20}. People are generally better able to self-identify with a consistently-gendered avatar, and self-identification is an important element of gameplay that contributes positively to the experience²¹⁻²³. Further, previous research suggests that using a consistently-gendered avatar may contribute positively to online social interaction because it helps reduce uncertainty and feelings of deceptiveness when people engage in social interactions^{18,21}.

Many studies have found that women are more likely to choose consistently gendered (i.e., female) avatars than men, who use gender-swapped (i.e., female) avatars more often^{1,7,9,20}. One potential reason for this pattern is that women tend to feel more pressure to identify with their avatars, while men feel freer to choose avatars for reasons besides gender identification. Consistent with this, women and girls tend to be encouraged to overtly perform their gender through somewhat self-objectifying external adornments such as makeup and dresses²⁴. In contrast, boys and men are encouraged to express their gender identity more through masculine behaviors than appearances²⁵. Such gendered double-standards are especially prevalent in the context of video games, possibly because many are considered masculine, competitive environments²⁶⁻²⁹. Hence, because women and girls experience greater pressure than men and boys to perform their gender overtly, it follows that female avatar users would feel more

compelled to choose consistently gendered (i.e., female) avatars than male avatar users.

Hypothesis 1: Women display a stronger preference for using consistently-gendered avatars than men.

The majority of previous research on the topic of avatar gender choice was conducted in mediated contexts where avatars of different genders are functionally equivalent. There is an open question of whether such differences between men and women in avatar gender choice persist within contexts in which nearly every avatar has its own gender and set of functional abilities, such as *League of Legends* or the *Street Fighter* series.

Within *League of Legends*, players select “champions” with different abilities and functions that cater to a wide variety of play preferences, such as damage dealers, protectors, and supporters. Unlike in titles studied previously, in *League of Legends*, avatars are not mirrored by gender (i.e., you cannot select a male or female version of the same avatar). Each character is unique and is pre-determined to be male or female. Champions fill out all of the prototypical player roles between gender, so it is not the case that only male or female avatars are supporters, for example. In other words, despite gender being fixed within specific champions, players are still able to choose both male and female champions within all in-game roles.

In such contexts, avatar gender is only tangentially related to the avatar use experience, which is heavily influenced by the avatar’s functional abilities. Further, the choice of avatar in these contexts is relatively ephemeral, with each session of avatar use lasting for a short duration (e.g., a 10 to 40-minute match), followed by the opportunity to choose a new avatar for the next session of use. This might suggest that players treat their avatars more functional tools than self-

representations, which is consistent with previous research suggesting that avatars used primarily for combat and competition tend to be treated as objects³⁰. However, as the reasoning for H1 suggests, women and girls experience greater pressure than men and boys to perform their gender overtly. Given that such gender norms have been found to persist in games like *League of Legends*³¹, the social pressure on women and girls to perform gender overtly likely extends even into contexts where avatar choice is ephemeral and functional. Hence, women are expected to generally prefer using female avatars relative to the proportion of female avatars available, while men's avatar gender choice is expected to display no gender preference, instead reflecting the avatar gender proportion available.

Hypothesis 2a: Women display a general preference for using female avatars.

Hypothesis 2b: Men display no gender preference for choosing avatars.

Method

This study utilized *League of Legends*, one of the most popular online games in the world, to recruit participants and collect data. *League of Legends* is a multiplayer online battle arena (MOBA). The game provides unique pre-built characters (i.e., avatars).

The research team and the game operator, Riot Games, who provided access to a dataset that unobtrusively linked players' behavioral logs with data from a privacy-protected and anonymous survey conducted in November 2010, collaboratively conducted this study. A set of 113,579 players, randomly selected from the North American League server, received the survey link and were offered a short-term "boost" in the rate of accruing points as incentive for participation. This form of compensation appealed to players across gender, experience level,

and avatar role preferences. Within seven days, 22,521 players completed the survey, with 18,627 non-duplicate responses considered valid (i.e., sufficient time—12 minutes minimum—spent on the survey), leading to a response rate of 16.4%. The final sample, restricted to participants who reported being a woman or man at least 18 years of age, included 15,392 players, 14,526 men (96%), 653 women (4%), age = 23.04 ($SD = 4.87$), with an average of 332 matches played each ($SD = 243.71$, min = 1, max = 1680). Thus, the dataset reflected over 5 million distinct choices of avatar gender.

Measures

Player gender was taken from the answer to the single question “what is your gender?” While gender is a non-binary, continuous and even multi-categorical characteristic ⁶⁵⁴, for the purposes of this research, only the common man/woman gender categories were used.

Avatar gender was assessed — as male or female (reasons described above) — by two members of the research team based on knowledge of the game. These gender classifications were unanimous.

Avatar gender choice preference was operationalized as the percentage of all matches played with either a male or female avatar. This metric was derived from the log data records of the number of matches played with each avatar. For example, if an individual played 100 matches total, and out of these matches played 30 with avatar X (female), 50 with avatar Y (female), and 20 with avatar Z (male), then the individual’s avatar gender choice preference would be 80% female.

Preference for consistently gendered avatar was calculated as the ratio of the avatar

gender choice preference for the player's gender to the proportion of avatars of that gender available in the game. For example, if a woman played with female avatars in .58 of matches, and given that .29 of all avatars offered were female, then her preference for consistently gendered avatars would be calculated at $.58/.29$, or 2.0. In other words, she uses consistently gendered avatars at a rate double to the proportion offered by the game, which could be considered a strong preference.

Results

Given the large difference in sample sizes (14,526 men, 653 women) as well as the lack of equality of variances according to Levene's test ($F = 7415.33$, $p < .001$), Hypothesis 1 (women display a stronger preference for using consistently-gendered avatars than men) was tested with Welch's t-test, which is robust to homogeneity of sample size and variance violations.³² Supporting Hypothesis 1, women displayed a higher preference for using consistently-gendered avatars ($M = 1.82$, $SE = .01$) than men ($M = 1.03$, $SE = .003$), $t(634.02) = 18.14$, $p < .001$, Cohen's $d = .99$ (large effect size). Supporting Hypothesis 2a (women display a general preference for using female avatars), a single-sample t-test found that compared to the proportion of female avatars offered by the game (.29), women chose a greater proportion of female avatars in their matches ($M = .53$, $SD = .32$), and this difference was significant $t(630) = 18.85$, $p < .001$, $d = 1.50$ (large effect size). Testing Hypothesis 2b (men have no gender preference), a single-sample t-test showed that compared to the proportion of male avatars offered by the game (.71), men chose a slightly greater proportion of male avatars in their matches ($M = .73$, $SD = .21$), and this difference was significant, $t(14118) = 12.00$, $p < .001$, d

= .20. These results are substantively meaningless given the small effect size and the likely inflation of statistical significance given the large sample size, and so men can be said to choose with no particular preference for avatar gender.

Discussion

This paper examines avatar gender choice in a noisy environment where avatars are not all equal in terms of ability or role, but instead are pre-designed to be of only one specific gender. Because the environment forces players to use some degree of functional choice, it is a more stringent test of the notion that players will pick avatars based solely on identification. Consistent with the hypotheses, the results suggest that women preferred using female avatars (reflecting identification motivations) while men did not. These findings suggest that gender identification guides avatar choice more for women than men – possibly because women experience more pressure than men do to perform their gender identities overtly – even within contexts where avatar choice is relatively functional and avatar gender is fixed within specific champions.

This research offers important practical implications. Because preference for gender identification in avatar choice is generally higher for women than men, game developers could offer more female avatar choices to attract women to their games without alienating male players, who seem highly willing to use gender-swapped avatars. Although the need for more equal gender representation in avatars/game characters is well studied³³, this point may not have been quite so obvious with respect to games that lack functional equivalence across avatar gender. In other words, if an avatar with a specific functionality only comes in one gender —

male — then women will be less likely to choose that avatar, regardless of functionality. Hence, by offering more female avatar options, game designers could augment their player base as a whole, gaining female players while retaining male players, thereby contributing to their financial bottom line while also promoting gender diversity in this stereotypically male-dominated space.

Future research should address this study's limitations. The data was collected in 2010 and thus the game, *League of Legends*, has changed in ways that are potentially relevant to the present observations (e.g., more avatars are now available). Further, the hypotheses were tested in only a single game, thus limiting generalizability. As with all research using digital games, general patterns observed should be corroborated with other platforms. Future research should also explicitly measure identification with avatars as a possible mediator of avatar gender choice differences. This was not possible in the present study given the nature of the data acquisition, while previous studies on identification with avatars have not had access to this type of data, but future research would benefit from merging both approaches if logistically possible. The present study's treatment of gender as a binary characteristic is also a limitation that future research could address by examining masculinity and femininity on continua for avatars and users.

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