

Dude Looks Like a Lady: Gender Swapping in an Online Game  
by Searle Huh and Dmitri Williams

Scholars have long recognized the importance of identity in online communication (Bessiere, Seay, and Kiesler 2007; Nakamura 2001; Valkenburg and Peter 2008). With fewer cues than face-to-face communication (Walther, Loh, and Granka 2005), people in online relationships can both benefit and suffer from the relative anonymity – benefit because the space allows for more experimentation and freedom, and suffer because the relationships can become empty without the commitment that identity offers (Turkle 1995). “Knowing the identity of those with whom you communicate is essential for understanding and evaluating an interaction” (Donath 1999: 29). Online games are an especially important area to examine these trends because of their popularity and their fundamental features. Western-based virtual worlds claim over 47 million subscriptions in 2008 (White 2008), with more growth expected. Within these worlds, identity is marked primarily by a character, which is a visual representation of the player. In an MMO (Massively Multiplayer Online game), players control this character, or “avatar,” that moves through a 3D virtual world, interacting with the characters of other players (DiGiuseppe and Nardi 2008). These avatars are created and altered by the players. The flexibility of such literal identity construction provides extraordinary freedom for players to deviate from, or alter their offline identities. Perhaps the most dramatic example of how people exercise this freedom and control is the case of online gender switching (or “swapping”). In a virtual world there is no rule that the players must use their offline gender for their character. Either sex may use plural, indeterminate, or non-gendered identities.

It is evident that gamers frequently practice character gender-swapping (e.g. DiGiuseppe and Nardi 2008), yet there is little understanding of how often or why this occurs. The anonymity of the Internet was initially hailed as a leveling mechanism – without the persistence of identity cues, discrimination would become pointless. However, this early optimism was met quickly by the reality of the human condition. Racism, sexism, ageism, and a host of category-based discriminations have persisted online (Nakamura 2001). Identity cues have become both sources of discrimination, and opportunities for deception and experimentation (Donath 1999; Donath and Boyd 2004; Zinman and Donath 2007). Exploring this deception and experimentation is the task of this chapter.

The chapter will review the literature on online identity construction and then offer an empirical account of online gender swapping in an online virtual world. By using a novel combination of survey data and game-generated behavioral logs, the chapter examines who the gender swappers are, why they engage in the practice, and what they do when swapped.

## **Gender and Identity, Offline and On**

*Sex* is a biological term that defines a person as male or female based on his/her inherent genes (Mintz and O'Neil 1990). On a daily basis, both sexes face different messages, expectations, resources, and opportunities (Cook 1990). Biological sex also triggers differentiated ways of perceiving and behaving toward the self and others (Cook 1990; Deaux 1984).

On the other hand, *gender* is “a multi-dimensional construct that encompasses many ways our society is differentiated on the basis of sex” (Cook 1990: 371). In contrast to sex, gender is less deterministic and more mutable. Several studies have claimed that gender is socially constructed (Bohan 2002; Kimmel 2000). Yet much of the sex differences literature has focused on individuals rather than on the larger social context (Cook 1990; Deaux 1984). Similarly, Baber and Tucker (2006) argued that how we assess gender attitudes need to assume that “gender and our beliefs about appropriate roles for both men and women” (p. 460) does not originate from individuals, or their sex, but is produced in social and historical contexts. Therefore, gender does not refer a static, but a changeable characteristic.

Gender had been traditionally modeled in research through “the artificial dichotomization of masculine and feminine” (Murphy 1994: 22) until the 1970s, when masculinity and femininity were repositioned as two endpoints on a continuum. However, this clear-cut categorization did not offer any explanation for any deviations from its mutually exclusivity, such as someone who has both high femininity and masculinity. More recently, some theorists have suggested bi or multi-dimensionality of gender, such as the Sex Role Inventory approach (Bem 1974) and the Personal Attributes Questionnaire (Spence and Helmreich 1978). These bi-dimensional models regard masculinity and femininity as separate constructs on different continua, therefore the concept of androgyny (Bem 1981; Murphy 1994) with both high masculine and high feminine characteristics simultaneously or neither (Bem 1981) became possible. Although the multi-dimensional models make the concept of gender more complex and lack predictive validity (Cook 1985), one key contribution is that they help to overcome “overly deterministic assumptions such as biological essentialism, bio-psychological equivalence, or gender polarization” (Korabik and McCreary 2000: 666).

Although biological sex is one of “the first things noticed and encoded during social interaction” (Skitka and Maslach 1996: 53), gender is one of “the most salient features we use to categorize and process social stimuli” (Bartini 2006: 233). “The belief that men and women are fundamentally different is often linked to the idea that there are particular social roles for which men and women are best suited” (Ruble and Martin 1998; cited in Barber and Tucker 2006: 459). A social role refers “a comprehensive pattern of behavior and attitudes, constituting a strategy

for coping with a recurrent set of situations, which is socially identified – more or less clearly – as an entity” (Turner 1990: 87). Particularly, gender roles are defined as “behaviors, expectations, and role sets defined by society as masculine or feminine which are embodied in the behavior of the individual man or woman and culturally regarded as appropriate to males or females” (O’Neil 1981: 203).

Simply put, people have role-related expectations for men and women (Geis 1993; Hall and Briton 1993). Not conforming to these gender roles can result in negative perceptions and evaluations (Mahalik 2000). Therefore, men and women who violate injunctive norms concerning gender role behavior are likely to experience social disapproval (Harrison and Lynch 2005). Similarly, Sirin, McCreary, and Mahalik (2004) claim that “even though men and women internalize and display both masculine and feminine characteristics, people still expect men to be masculine and women to be feminine and reward and punish them accordingly” (McCreary 1994: 120). Therefore, men are expected to fulfill the masculine gender role that reflects self-determination and women are expected to be more communally oriented (Wood and Eagly 2002). In an online space, it is therefore possible that the players who keep their gender are more likely to act their gender-typed behaviors.

Early research on online gender focused on the interpersonal dimensions of computer-mediated communication (CMC) with a tendency to analyze language use in order to better understand the power relationships between the genders online (Shade 2003). Men and women tend to use language in different ways, presumably unconsciously, online as well as offline (Herring 1995; Herring 2003; Kendall 1998). Similarly, Lee (2007) uses the Social Identity model of Deindividuation Effects (SIDE) in claiming that “if the paucity of personalizing information in CMC leads people to think and behave in terms of social categories, it might as well make them more vigilant to the gender-linked language styles their interactants display” (p. 518). This line of thinking is also supported by Walther’s (1996) hyper-personal theory, which claims that online communicators tend to make strong attributions about the characteristics of others online from minimal amount of cues.

In addition to the inherent malleability of online identity, theorists have suggested that, in the technological age, new media lead people to become more flexible in constructing self-identities (Gergen 1991; Kuhn 2006; Turkle 1995). With rapidly changing technology, the self is constantly shifting and adapting to new contexts online (Anderson and Buzzanell 2007). For example, Castells (2004) says that a network society enables people’s identities to be more malleable by de-centering identities based on previous physical constraints such as local and national communities. Without the strong enforcement of identity, online life provides more room for identity exploration.

## **Identity in the Context of MMOs**

MMOs are rich three-dimensional worlds with millions of players (Hussain and Griffiths 2008). Just as no one lives in complete isolation in the real world, other players in MMOs are necessary, unlike stand-alone console games which do not need other players. Put in other words, “social interaction in MMOs is almost obligatory, as players must collaborate with other players in the game to succeed in ever more complex goals” (Hussain and Griffiths 2008: 47). These collaborations force the issue of identity in MMOs into a social context. Offline, individuals may struggle to adapt to the static and universal identity labels offline (Stone 1995). In contrast, MMOs provide gamers a rich range for altering identities by allowing players to choose gender, race, profession, and morality of their character. Each social interaction is therefore between characters with most of these choices made visible.

There are two contrasting views of the effects of this flexibility online. One is that the online world maintains and even extends the gender inequality that exists offline (Anderson and Buzzanell 2007; Kendall 2002; Perry and Greber 1990; Slouka 1995). From this perspective, identity flexibility cannot rise above the constraints of offline life. Perry and Gerber (1990) argue that “if science reflects at least some of a society’s value, then technology developed from it must also embody these values” (p. 76). Kendall (2002) also claimed that online interaction merely reinforces gender-based social status, reinforcing women’s marginalization through “masculine” ways of doing work (Anderson and Buzzanell 2007). Another negative aspect to gender swapping is that it may be dysfunctional to develop an online identity that is different from one’s “real” offline identity (Slouka 1995).

The contrasting view is that the online-world – and especially game-based worlds – is a place for relieving gender gaps, or positive exploration. Haraway (1991) noted that communications technologies like virtual worlds are important tools for re-crafting bodies, especially for women who can benefit from the new social relationships that makes possible. In her view, online worlds could be utopias without restrictive or imbalancing gender binaries. Plant (2000) also argued that digital culture provides a space beyond existing patriarchal structures. Similarly, Turkle (1995) suggests that gender swapping is merely a natural extension identity exploration.

If gender can be flexible offline, the online world makes it even more so. Gender swapping occurs when “one presents a gender that is different from his or her biological sex” (Roberts and Parks 1999: 522). Some cases highlight gender swapping by males (Van Gelder 1991), while others have commented on gender switching by both males and females (Bruckman 1993). These cases were noticed early on in text-only MUD environments (Rheingold 2000), where deceptive gender play was treated as something needing to be banned.

There is little existing research on the prevalence or reasons for the practice. One study (Hussain and Griffiths 2008) reported that 54 percent of male and 70 percent of female virtual world gamers have experimented with gender swapping. The main reason for males to gender swap was for competitive advantage. By posing as attractive females and interacting with other male players, these swappers sought to gain extra money or weapons and avoided being targeted (and therefore attacked) by fellow gamers. The female gamers swapped for the opposite reason – to avoid such solicitations, and so that they would be treated as equals by the predominately male player base. However, this study was completed with a convenience sample survey, with participants gathered from non-representative forums where the most serious players tend to congregate. While survey research is an acceptable tool, our understanding of the practice can increase with the use of unobtrusive behavioral data. In other words, in an anonymous survey we can ask them about who they are offline with reasonable certainty, but might get less insight into how they behaved while online. This could happen due to either social desirability or simply recall issues.

The larger context of video game play is important to note as well. Despite many early hopes, gender inequality persists online, especially in male-oriented video game spaces (McQuivey 2001). Video game characters still reflect offline gender inequalities. Dill and Thill (2007) reported that “stereotypes of male characters as aggressive and female characters as sexually objectified” (p. 851). Female characters are commonly sexualized while male characters are not. This is also related to the presence of scantily clad characters; females are much more likely than males to be sexually under-dressed. Players seem to self-select into these stereotypical roles. DiGiuseppe and Nardi (2008) explored the popular online video game *World of Warcraft* (WoW). They found several common gender stereotypes about users’ character choice in the game, such as females being more likely to choose certain groups of characters that are associated with supportive roles, especially dedicated to healing (e.g. Priest) and ranged combat (e.g. Mage), while males are more likely to play characters that commonly involve in more physical warfare (e.g. Warrior).

These studies highlight the fact that online worlds often reproduce our existing offline social and power distributions. Women have less power within society offline, and in these more male-centric spaces, the gaps appear to be larger still; in contrast, men, show more self-determination and dominant behaviors (Athenstaedt, Haas, and Schwab 2004). With this inequality, it is more likely that women want to alter their identity to male in large, social, male-centric game worlds:

*H1a) Female players are more likely to change their online character gender to male.*

Sexual preference can also affect whether people want to manipulate their gender online. Heterosexual men often remain within their socially based gender roles to avoid opprobrium and hassle (Bosson, Prewitt-Freilino, and Taylor 2005). Therefore, “the desire to avoid such misclassification serves as a powerful psychological mechanism that promotes rigid adherence to the male gender role” (Bosson, Taylor, and Prewitt-Freilino 2006: 13). Potential gender swappers are confronted with a powerful need to belong, which may be put at risk if their swapping becomes public (Baumeister and Leary 1995). This will likely limit heterosexuals from swapping more often. A gender swapper’s discomfort may also come from attacks on their psychological coherence (Bosson et al. 2006). Thus, if a homosexual player more closely identifies with a different psychological gender than their genetic sex, they will be more likely to swap. These twin forces—heterosexuals being hesitant to swap and homosexuals being more willing to swap yield the following hypothesis

*H1b) Homosexuals are more likely to change their biological gender in online games.*

### **Motivations for Swapping**

Reinecke, Trepte and Behr (2007) list three major reasons why people play video games: challenge and competition, social interaction, and fantasy and escapism. Some studies have found that female gamers seem to be less interested in competitive situations (Hartmann and Klimmt 2006; Lucas and Sherry 2004), while male gamers play to complete tasks and maintain high standards for performance (Rojahn and Willemsen 1994). One of the reasons for this difference stems from gender role theory. Eagly and Karau (1991) suggest that gender differences are rooted in peoples’ role consistency. That is, peoples are more likely to behave consistently within the gender roles that are already formed in their lives. Both genders are socialized from an early age into two distinctively collective categories of behavior: task activity for men and social activity for women. But for those individuals who would prefer to break from these strictures, the online gaming world presents an opportunity to “play” the other gender’s role. Therefore, we would expect that those who gender swap will be motivated to play for the cross-stereotypic reason from their biological gender:

*H2) Gender-swapping gamers will adhere to the opposite gender’s stereotypical reasons for play.*

We would expect this attitudinal orientation to also lead to behavioral differences as well. Those gender-typed behaviors can be predicted by gender schema theory (Bem 1981). “Being schematic” in the theory refers “having a readiness to sort information into categories on the

basis of a particular dimension, despite the availability of other possible and reasonable alternative dimensions” (Skitka and Maslach 1996: 55). Thus, being gender schematic means spontaneously sorting attributes and behavior into categories related to sex, despite the availability of viable alternative categories unrelated to sex. According to this theory, “people who describe themselves in conventionally sex-typed ways are thought to be gender schematic” (Skitka and Maslach 1996: 55). However, people who swap their gender can also be gender schematic because they swap gender based on their own concept of what are male or female activities. Thus, gender swappers are possibly performing guesswork in their portrayals of the other gender. The ability to swap may therefore lead many players to misestimate those behaviors and be prone to over-exaggeration (Cook 1990). In this sense, virtual worlds can become a place for “hyper-masculinity” and “hyper-femininity” (Scharrer 2004: 397). According to Scharrer, hyper-masculinity refers to the exaggeration of “macho” characteristics, specifically a desire for action and danger, and the acceptance of physical violence as a part of male nature. Meanwhile, hyper-femininity means the amplification of female stereotypes, with an emphasis on dependence, submissiveness, and sexuality as the basis of a woman’s value. This mis-estimation and over-exaggeration will lead to hyper-gendered behaviors among the swappers:

*H3a) Male players who play female characters are more likely to do more hyper-feminine activities than male users who play male characters.*

*H3b) Female players who play male characters are more likely to involve in hyper-masculine activities than female users who play female characters.*

## **Methods and Measures**

The data used for this study come from a combination of survey and game-generated computer logs. 6,122 players of the game *EverQuest II* took part in a survey operated from within the game world. The survey took place on January 12-13, 2007, and offered the players an in-game item as a reward for participation (Williams, Yee, and Caplan 2008). Under an agreement with the firm Sony Online Entertainment (SOE), we were also able to extract behavioral indicators from the game’s operating logs. Chiefly, these included the gender of the players’ avatars and selected game activities matching gender-stereotypical behaviors (see below). Because players can maintain multiple avatars, we restricted the sample to only the avatars played most often. This avatar gender variable was then matched up with the survey data, providing an unobtrusive link between their offline and online lives. All data were anonymized and unable to be linked to real-world identities.

Gender swapping players were identified based on their survey data crossed with their primary character's gender. Female gamers who played male characters in the game were categorized as F-M players, those who played females as F-F, etc. the resulting four categories yield a 2 (game character gender) x 2 (real gender) factorial design.

Motivations for play were measured using Yee's condensed MMO motivations scale (Yee 2007). The scale uses 10 component questions to generate three factors labeled "sociability," "achievement," and "immersion." Sociability matches the feminine stereotypical motivation for play, while achievement matches the male stereotypical one. The behavioral logs supplied four main measures of gender-stereotypical in-game behaviors. Primarily male stereotypical behaviors were engaging in combat with computer-generated monsters, completing quests, and engaging in player vs. player combat (PvP). All of these are related to either physical violence (Scharrer 2004) or task completion or performance (Rojahn and Willemsen 1994). Combat with monsters was measured by the number of monster encounters per month. For quests, the number of quests completed was used. The number of player vs. player encounters was calculated by adding the frequency of killing other players and that of being killed by other players. Primarily female stereotypical behavior was measured with the rate of personal text chatting as communal activities are regarded as one of feminine gender roles (Wood and Eagly 2002). This was reported as an intensity variable, i.e. the number of text chats sent per month. Lastly, sexual orientation was measured with the survey question "Do you consider yourself a) straight/heterosexual, b) bisexual, c) homosexual, d) prefer not to answer."

## Results

Hypothesis 1a predicted that female players are more likely to change their gender online. To examine the categorical differences, a chi-square test was run, which yielded significant differences ( $\chi^2 = 62.54, p < .001$ ). However, as Table 1 shows, the results were in the opposite direction of expectations, with the proportion of female players who changed their online gender (8.2 percent) smaller than the male players (17.4 percent). An incidental, but important finding was that gender swapping is not very common in general, with only 15.5 percent of players overall engaging in it.

**Table 1. Frequencies of Gender Swapping**

Game Character Gender	Real Gender		
	Male	Female	Total

Male	4065	82.6%	98	8.2%	4163	68.0%
Female	855	17.4%	1104	91.8%	1959	32.0%
Total	4920	100.0%	1202	100.0%	6122	100.0%

Hypothesis 1b predicted more gender swapping from homosexual players. A chi-square test again yielded significant results ( $\chi^2 = 8.42, p = .005$ ), this time in the expected direction. Homosexual players were more likely to change their online gender (22.0 percent) than straight users (16.8 percent). Therefore, hypothesis 1b was supported.

**Table 2. Frequencies of Gender Swapping According to Sexual Preference**

Gender Swapping	Sexual Preference					
	Straight		Gay		Total	
No	3678	83.2%	128	78.0%	3806	83.0%
Yes	742	16.8%	36	22.0%	778	17.0%
Total	4420	100.0%	164	100.0%	4584	100.0%

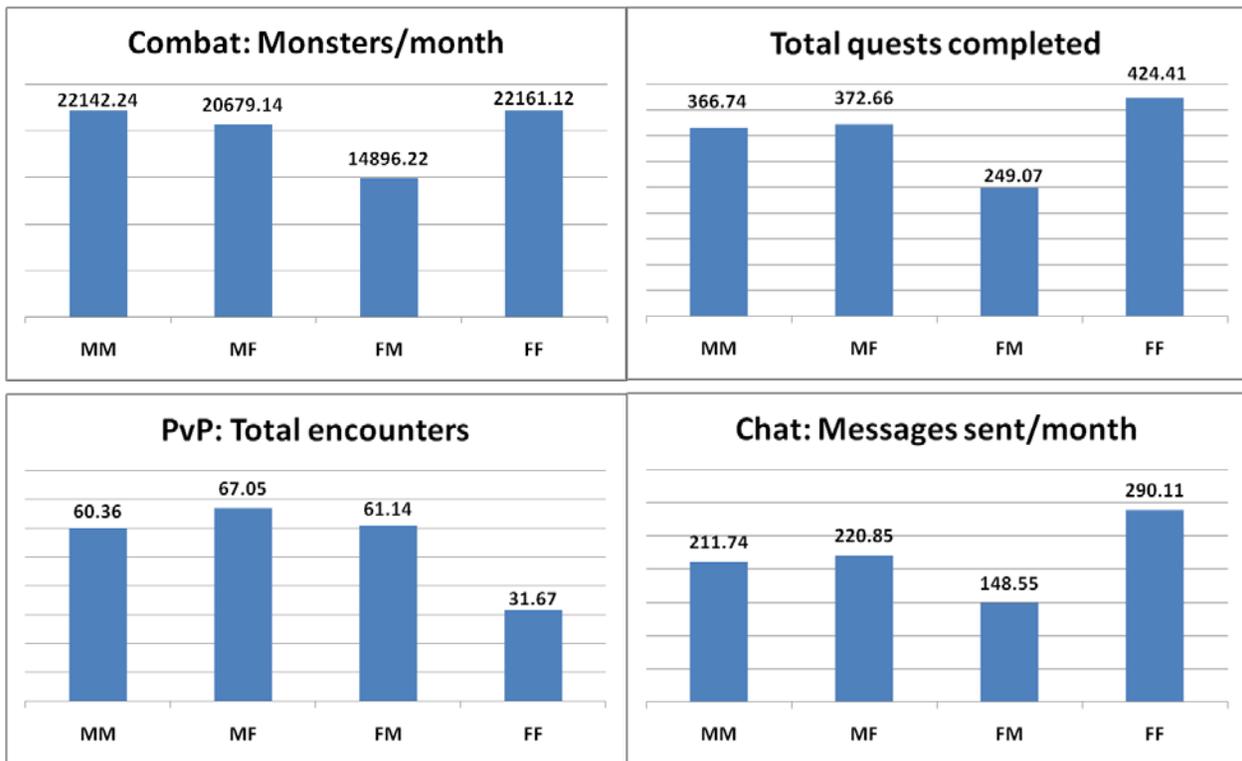
Hypothesis 2 predicted different motivations among the gender swappers. Three t-tests were performed, comparing the gender swappers with the non-swappers. First, the achievement motivation did not show a significant difference between the two groups,  $t(6006) = .817, p = .414, \eta^2 < .001$ . That is, gender swappers ( $M = 3.42, SD = .91$ ) did not differ from non-swappers ( $M = 3.44, SD = .88$ ) in terms of motivation for performance. Second, a t-test for the socialization motivation also did not show a significant difference,  $t(5979) = .716, p = .474, \eta^2 < .001$ . That is, those who swapped their gender ( $M = 3.15, SD = .96$ ) did not have different degree of motive for socializing from those who did not ( $M = 3.18, SD = .93$ ).

Hypothesis 3a predicted that men who play female characters online are more likely to engage in stereotypically female acts than men who play male characters. First, the number of battle encounters with monsters was tested for differences between the swapping and non-swapping male players. The test did not show a significant result,  $t(4918) = -1.593, p = .111, \eta^2 < .001$  (male gender swappers  $M = 20679.14, SD = 23817.43$ ; male non-swappers  $M = 22142.24, SD = 24522.21$ ). Second, the number of quests was examined, but also did not show a significant result,  $t(4918) = -.684, p = .494, \eta^2 < .001$  (male gender swappers  $M = 372.66, SD = 269.88$ ; male non-swappers  $M = 355.74, SD = 285.85$ ). Third, as an opposite indicator, the number of PvP encounters was compared. The test also failed to produce a difference,  $t(4918) = .684, p = .494, \eta^2 < .001$  (Male gender swappers  $M = 67.05, SD = 301.75$ ; male non-swappers  $M =$

60.36,  $SD = 268.85$ ). Lastly, the rate of text chatting was tested and also did not show a significant result,  $t(2845) = .625, p = .532, \eta^2 < .001$  (Male gender swappers  $M = 220.85$  text chats sent/month,  $SD = 307.08$ ; male non-swappers  $M = 211.74, SD = 290.55$ ). In sum, male players did not differ in their in-game behaviors based on the gender of their avatar.

Hypothesis 3b predicted that women who play male characters online are more likely to engage in stereotypically male behaviors than women who play female characters. First, the t-test for the frequency of combat showed a significant result,  $t(1200) = -2.980, p = .003, \eta^2 = .007$ , but the results were in the opposite direction of expectations. Female non-swappers ( $M = 22161.12, SD = 23225.54$ ) fought more monsters than female gender swappers ( $M = 14896.22, SD = 22015.43$ ). Second, a t-test for the number of quests also showed a significant result,  $t(1200) = -5.614, p < .001, \eta^2 = .026$ . However, female non-swappers ( $M = 424.41, SD = 301.64$ ) completed more quests than female gender swappers ( $M = 249.07, SD = 227.04$ ). Third, the test of PvP combat also showed a significant result,  $t(1200) = 2.733, p = .006, \eta^2 = .003$ , this time in line with expectations. Female gender swappers ( $M = 51.14, SD = 126.57$ ) took part in more PvP combat than female non-swappers ( $M = 31.67, SD = 166.07$ ). Lastly, chatting behaviors supported the hypotheses. Female gender swappers engaged in significantly less text chatting than the non-swappers,  $t(776) = -2.136, p = .033, \eta^2 = .003$  (Female gender swappers  $M = 148.55$  text chats sent/month,  $SD = 307.08$ ; female non-swappers  $M = 290.11, SD = 455.74$ ). Whereas the same-gendered female players conformed to gender expectations by chatting more than any other group, it was notable that the gender swapping female players sent the fewest chats of any group in the analysis, including the men. This suggests that they were engaging in hyper-masculine behavior, in direct contrast to the male swappers who exhibited no notable differences.

### **Figure 1. Comparison of Combat, Quest, PvP, and Chat Among Groups**



*Note:* MM refers to males playing male characters, MF to males playing female characters, etc.

## Conclusion

This study tested gender swapping in an online game, focusing on who the swappers are, what their motivations are, and what behaviors they engage in within the game world. Contrary to expectation, females were not more likely to change their gender online than males. Consistent with expectation, homosexual users were more likely to change their online gender than straight users. Motivations for play yielded no differences; Gender swappers and non-swappers are playing for the same reasons. The behavioral measures did show some intriguing differences, and suggested that there may well be differences between the genders playing the game. These findings are discussed below.

The most obvious takeaway point from the study is that few players engage in gender swapping. Contrary to Haraway or Turkle's notions of vibrant identity exploration, this appears to be a fairly small phenomenon. And given that the motivations for play had no relationship to swapping, there may be little of the identity exploration or challenging of gender norms that some had expected. One reason could simply be that players find their avatars to be chiefly instrumental. They may not identify strongly with the character on the screen, perhaps regarding it more the way a consumer might choose a toothbrush or car color. Indeed, many male players have quipped that they play a female avatar because it is a pleasing visual object, not a source of

identification. However, there may be something else at play among the female players. As noted in a related project studying gender differences among this population, there is a very high degree of masculine-oriented female players in *EQII* (Williams, Consalvo, Caplan, and Yee in press). That project found that while male players had about the same level of homosexuality as the general population, female players had three times the bisexuality rate. They were also among the most “hard core” players in terms of time spent within the game. How can we reconcile this with the very feminine behaviors among the non-swapping, very chatty female players? One strong possibility is that the female population of players is in fact bi-modal, and made up of very stereotypically female and male-leaning subgroups. Future research on gender in virtual worlds should pay special attention to measuring and predicting such bi-modal tendencies.

The in-game behaviors provide the most interesting insight into this issue of female exceptionalism. Male players did not perform differently whether they played their own gendered characters or swapped gendered characters. Neither gender showed differences on the basic tasks of completing quests and attacking monsters. This may simply be due to the fact that these two measures are the main components of MMO play, and so are not sensitive enough to detect gendered differences. However, the female players did behave differently when they gender swapped, showing a more masculine behavioral pattern than even the men in one case. These players chatted in the game far less frequently than female non-swappers, or even the men. In this sense, these women were “out-manning” the male players. Similarly, the two female groups showed a large difference what is arguably the most hyper-masculine activity in MMOs, PvP play. While all players must attack monsters, PvP is an optional activity that some players gravitate towards while others avoid it. As a particularly confrontational act, it is more associated with stereotypically masculine traits.

Although the study uses a novel data set, it has some limitations. First, these data are not informed by the cultural context of the game. There may be sociocultural reasons for the results that would only be obvious to a long-term player of the game. Future research should therefore incorporate an anthropological component to better inform the results. Also, although the data here are longitudinal, they do not offer causal inferences. However, because the online game world is relatively new, it is likely that the play patterns here represent some of the first such exposures in the population to this kind of setting. Different methods might eventually control and untangle whether the game enables or creates the differences shown here.

On the one hand, the online world offers immense freedom to people by allowing them to experiment with their identity. On the other hand, it is clearly not a utopian gender-free space. Whether people change their gender online or not, they still keep their offline gender roles in mind. In a sense, the virtual game world is more an extension of the real one than a separate

place. It is possible that being someone else online (e.g. playing opposite gender roles online) may make players more conscious of their offline identity. Men being men or women being women does not require any extra planning and evaluation of behaviors. Swapping, however, may require frequent self-evaluation behaviors to maintain a socially comfortable gender role. For some female players, gender swapping clearly represents some deeper identity-based behavior. Yet for the men, the general rule appears to be that he can be a dude who looks like a lady, but he still acts like a dude.

### **Acknowledgement**

This work is supported by grants from the National Science Foundation (Grant #IIS 07-29505) and the Army Research Institute (Grant #PROJ0001029).

### **References**

- Anderson, Wendy. and Patrice Buzzanell. 2007. "Outcast among Outcasts: Gender and Leadership in a Mac Users Group." *Women and Language* 30:32-45.
- Athenstaedt, Ursula, Elisabeth Haas, and Stephanie Schwab. 2004. "Gender Role Self-Concept and Gender-Typed Communication Behavior in Mixed-Sex and Same-Sex Dyads." *Sex Roles* 50:37-52.
- Baber, Kristine M., and Corinna Jenkins Tucker. 2006. "The Social Roles Questionnaire: A New Approach to Measuring Attitudes Toward Gender." *Sex Roles* 54:459-467.
- Bartini, Maria. 2006. "Gender Role Flexibility in Early Adolescence: Developmental Change in Attitudes, Self-perceptions, and Behaviors." *Sex Roles* 55:233-245.
- Baumeister, Roy F. and Mark R. Leary. 1995. "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation." *Psychological Bulletin* 117:497-529.
- Bem, Sandra L. 1974. "The Measurement of Psychological Androgyny." *Journal of Consulting and Clinical Psychology* 41:856-865.
- , 1981. "Gender Schema Theory: A Cognitive Account of Sex Typing." *Psychological Review* 88:354-364.
- Bessiere, Katherine, A. Fleming Seay, and Sara Kiesler. 2007. "The Ideal Elf: Identity Exploration in *World of Warcraft*." *Cyberpsychology and Behavior* 10: 530-535.
- Bohan, Janis S. 2002. "Sex Differences and/in the Self: Classic Themes, Feminist Variations,

- Postmodern Challenges.” *Psychology of Women Quarterly* 26:74-88.
- Bosson, Jennifer K., Jennifer L. Prewitt-Freilino and Jenel N. Taylor. 2005. “Role Rigidity: A Problem of Identity Misclassification?” *Journal of Personality and Social Psychology* 89:552-565.
- Bosson, Jennifer K., Jenel N. Taylor and Jennifer L. Prewitt-Freilino. 2006. “Gender Role Violations and Identity Misclassification: The Roles of Audience and Actor Variables.” *Sex Roles* 55:13-24.
- Bruckman, Amy S. 1993, “Gender Swapping on the Internet,” retrieved Oct 22, 2008 (<http://www.cc.gatech.edu/elc/papers/bruckman/gender-swapping-bruckman.pdf>).
- Castells, Manuel. 2004. *The Power of Identity*. Malden, MA: Blackwell Publishers.
- Cook, Ellen Piel. 1985. *Psychological Androgyny*. New York: Pergamon.
- , 1990. “Gender and Psychological Distress.” *Journal of Counseling and Development* 68:371-75.
- Deaux, Kay. 1984. “From Individual Differences to Social Categories: Analysis of a Decade.” *American Psychologist* 39:105-116.
- DiGiuseppe, N., and B. A. Nardi. 2008, “Real Genders Choose Fantasy Characters: Class Choice in *World of Warcraft*.” *First Monday* 12(5-7); ([http://www.firstmonday.org/issue/issue12\\_5/digiuseppe/index.html](http://www.firstmonday.org/issue/issue12_5/digiuseppe/index.html)).
- Dill, Karen E., and Kathryn P. Thill. 2007. “Video Game Characters and the Socialization of Gender Roles: Young People’s Perceptions Mirror Sexist Media Depictions.” *Sex Roles* 57:851-864.
- Donath, Judith. 1999. “Identity and Deception in the Virtual Community.” Pp. 29-59 in *Communities in Cyberspace*, edited by M. A. Smith and P. Kollock. New York: Routledge.
- Donath, Judith, and Danah Boyd. 2004. “Public Displays of Connection.” *BT Technology Journal* 22:71-82.
- Eagly, Alice H. and Steven J. Karau. 1991. “Gender and the Emergence of Leaders: A Meta-Analysis.” *Journal of Personality* 60:685-710.
- Geis, Florence L. 1993. “Self-Fulfilling Prophecies: A Social Psychological View of Gender.” Pp. 9-54 in *The Psychology of Gender*, edited by A. E. Beall and R. J. Sternberg. New York: Guilford.
- Gergen, Kenneth J. 1991. *The Saturated Self: Dilemmas of Identity in Contemporary Life*. New York: Basic Books.
- Hall, Judith A. and Nancy J. Briton. 1993. “Gender, Nonverbal Behavior, and Expectations.” Pp. 276-295 in *Interpersonal Expectations: Theory, Research, and Applications*, edited by P. D. Blanck. New York: Cambridge University Press.
- Haraway, Donna J. 1991. *Simians, Cyborgs, and Women: The Re-Invention of Nature*. New York:

Routledge.

- Harrison, Lisa A. and Amanda B. Lynch. 2005. "Social Role Theory and the Perceived Gender Role Orientation of Athletes." *Sex Roles* 52:227-236.
- Hartmann, Tilo, and Christoph Klimmt. 2006. "Gender and Computer Games: Exploring Females' Dislike." *Journal of Computer-Mediated Communication* 11.
- Herring, Susan C. 1995. "Men's Language on the Internet." Pp. 1-20 in *Proceedings of the 2nd Nordic Language and Gender Conference (Nordlyd)*, edited by I. Brock, T. Bull, and T. Swann. Tromso, Norway: University of Tromso.
- Herring, Susan C. 2003. "Gender and Power in On-line Communication." Pp. 202-228 in *The Handbook of Language and Gender*, edited by J. Holmes and M. Meyerhoff. Oxford: Blackwell.
- Hussain, Zaheer, and Mark D. Griffiths. 2008. "Gender Swapping and Socializing in Cyberspace: An Exploratory Study." *CyberPsychology and Behavior* 11:47-53.
- Kendall, Lori. 1998. "Meaning and Identity in Cyberspace: The Performance of Gender, Class, and Race Online." *Symbolic Interaction* 21:129-153.
- . 2002. *Hanging Out in the Virtual Pub: Masculinities and Relationships Online*. Berkeley, CA: University of California Press.
- Kimmel, Michael S. 2000. *The Gendered Society*. New York: Oxford University Press.
- Korabik, Karen, and Donald R. McCreary. 2000. "Testing a Model of Socially Desirable and Undesirable Gender-Role Attributes." *Sex Roles* 43:665-685.
- Kuhn, Timothy. 2006. "A 'Demented Work Ethic' and a 'Lifestyle Firm': Discourse, Identity, and Workplace Time Commitments." *Organization Studies* 27:1339-1358.
- Leary, Mark R., Ellen S. Tambor, Sonja J. Terdal and Deborah L. Downs. 1995. "Self-Esteem as an Interpersonal Monitor. The Sociometer Hypothesis." *Journal of Personality and Social Psychology* 68:518-530.
- Lee, Eun-Ju. 2007. "Effects of Gendered Language on Gender Stereotyping in Computer-Mediated Communication: The Moderating Role of Depersonalization and Gender-Role Orientation." *Human Communication Research* 33:515-535.
- Lucas, Kristen and John L. Sherry. 2004. "Sex differences in video game play: A communication-based explanation." *Communication Research* 31:499-523.
- Mahalik, James R. 2000. "Men's Gender Role Conflict as Predictors of Self-Ratings on the Interpersonal Circle." *Journal of Social and Clinical Psychology* 19:276-292.
- Martin, Carol Lynn. 1990. "Attitudes and Expectations about Children with Nontraditional and Traditional Gender Roles." *Sex Roles* 22:151-166.
- McCreary, Donald R. 1994. "The Male Role and Avoiding Femininity." *Sex Roles* 31:517-531.
- McQuivey, James. 2001. "The Digital Locker Room: The Young, White Male as Center of the

- Video Gaming Universe.” Pp. 183-214 in *The Gender Challenge to Media: Diverse Voices from the Field*, edited by E. T. L. Aldoory. Cresskill, New Jersey: Hampton Press.
- Mintz, Laurie B. and James M. O’Neil. 1990. “Gender Roles, Sex, and the Process of Psychotherapy: Many Questions and Few Answers.” *Journal of Counseling and Development* 68:381-387.
- Murphy, Patricia. 1994. “Gender Differences in Pupils’ Reactions to Practical Work.” *Teaching Science*, edited by Ralph Levinson. New York: Routledge
- Nakamura, Lisa. 2001. “Race in/for Cyberspace: Identity Tourism and Racial Passing on the Internet.” Pp. 226-235 in *Reading Digital Culture*, edited by D. Trend. Malden, MA: Blackwell.
- O’Neil, James M. 1981. “Patterns of Gender Role Conflict and Strain: Sexism and Fear of Femininity in Men’s Lives.” *Personnel and Guidance Journal* 60:203-210.
- Perry, Ruth, and Lisa Greber. 1990. “Women and Computers: An introduction.” *Signs: Journal of Women in Culture and Society* 16:74-101.
- Plant, Sadie. 2000. “On the Matrix: Cyberfeminist Simulations.” Pp. 265-275 in *The Gendered Cyborg: A Reader*, edited by G. Kirkup, L. Janes, K. Woodward, and F. Hovenden. New York: Routledge.
- Reinecke, Leonard, Sabine Trepte and Katharina-Maria Behr. 2007. “Why Girls Play: Results of a Qualitative Interview Study with Female Video Game Players.” *Hamburger Forschungsberichte zur Sozialpsychologie* 77. Hamburg, Germany: University of Hamburg.
- Rheingold, Howard. 2000. *The Virtual Community*. Cambridge, MA: MIT Press.
- Roberts, Lynne D. and Malcolm R. Parks. 1999. “The Social Geography of Gender-Switching in Virtual Environments on the Internet.” *Information, Communication and Society* 2:521-540.
- Rojahn, Krystyna, and Tinneke M. Willemsen. 1994. “The Evaluation of Effectiveness and Likability of Gender-Role Congruent and Gender-Role Incongruent Leaders.” *Sex Roles* 30:109-119.
- Ruble, Diane N., and Carol Lynn Martin. 1998. “Gender Development.” Pp. 933-1016 in *Handbook of Child Psychology*, edited by W. Damon. New York: John Wiley and Sons.
- Scharrer, Erica. 2004. “Virtual Violence: Gender and Aggression in Video Game Advertisements.” *Mass Communication and Society* 7:393-412.
- Shade, Leslie Regan. 2003. “Review Essay: Gender and the Internet.” *Canadian Journal of Communication* 28: 359-364.
- Sirin, Selcuk R., Donald R. McCreary, and James R. Mahalik. 2004. “Differential Reactions to Men and Women’s Gender Role Transgressions: Perceptions of Social Status, Sexual

- Orientation, and Value Dissimilarity.” *Journal of Men’s Studies* 12:119-132.
- Skitka, Linda J., and Christina Maslach. 1996. “Gender as Schematic Category: A Role Construct Approach.” *Social Behavior and Personality* 24:53-74.
- Slouka, Mark. 1995. *War of the Worlds: Cyberspace and the High-Tech Assault on Reality*. New York: Basic Books.
- Spence, Janet T., and Robert L. Helmreich. 1978. *Masculinity & Femininity: Their Psychological Dimensions, Correlates, and Antecedents*. Austin, TX: University of Texas Press.
- Stone, Allucquère Rosanne. 1995. *The War of Desire and Technology at the Close of the Mechanical Age*. Cambridge, MA: MIT Press.
- Swann, William B. 1996. “To Be Adored or to Be Known?” Pp. 408-448 in *Handbook of Motivation and Cognition*, volume 3, edited by R. M. Sorrentino and E. T. Higgins. New York: The Guilford Press.
- Swann, William B., Peter J. Rentfrow, and Jennifer S. Guinn. 2002. “Self-Verification: The Search for Coherence.” Pp. 367-383 in *Handbook of Self and Identity*, edited by M. R. Leary and J. P. Tangney. New York: Guilford.
- Turkle, Sherry. 1995. *Life on the Screen: Identity in the Age of the Internet*. New York: Simon and Schuster.
- Turner, Ralph H. 1990. “Role Change.” *Annual Review of Sociology* 16:87-110.
- Valkenburg, Patti, and Jochen Peter. 2008. “Adolescents’ Identity Experiments on the Internet.” *Communication Research* 35:208-231.
- Van Gelder, Lindsay. 1991. “The Strange Case of the Electronic Lover.” Pp. 364-375 in *Computerization and Controversy: Value Conflicts and Social Choices*, edited by C. Dunlop and R. Kling. Boston: Academic Press.
- Walther, Joseph B. 1996. “Computer-Mediated Communication: Impersonal, Interpersonal, and Hyperpersonal Interaction.” *Communication Research* 23:1-43.
- Walther, Joseph B., Tracy Loh and Laura Granka. 2005. “Let Me Count the Ways: The Interchange of Verbal and Nonverbal Cues in Computer-Mediated and Face-to-Face Affinity.” *Journal of Language and Social Psychology* 24:36-65.
- White, Phil. 2008. “MMOGData: Charts;” <http://mmogdata.voig.com/>.
- Williams, Dmitri, Mia Consalvo, Scott Caplan, and Nick Yee. in press. “Looking for Gender (LFG): Gender Roles and Behaviors Among Online Gamers.”
- Williams, Dmitri, Nick Yee, and Scott Caplan. 2008. “Who Plays, how Much, and Why? A Behavioral Player Census of a Virtual World.” *Journal of Computer Mediated Communication* 13:993-1018.
- Wood, Wendy, and Alice H. Eagly. 2002. “A Cross-Cultural Analysis of the Behavior of Women and Men: Implications for the Origins of Sex Differences.” *Psychological Bulletin*

128:699-727.

Yee, Nick. 2007. "Motivations of Play in Online Games." *CyberPsychology and Behavior* 9:772-775.

Zadro, Lisa, Kipling D. Williams, and Rick Richardson. 2004. "How Low Can You Go? Ostracism by a Computer Is Sufficient to Lower Self-Reported Levels of Belonging, Control, Self-Esteem, and Meaningful Existence." *Journal of Experimental Social Psychology* 40:560-567.

Zinman, Aaron, and Judith Donath. 2007. "Is Britney Spears Spam?" in *CEAS 2007 – Fourth Conference on Email and Anti-Spam*, vol. 7. Mountain View, California USA.