Sex role stereotyping is hard to kill: A field experiment measuring social responses to user characteristics and behavior in an online multiplayer first-person shooter game

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A B S T R A C T

Sex role stereotyping by players in first-person shooter games and other online gaming environments may encourage a social environment that marginalizes and alienates female players. Consistent with the social identity model of deindividuation effects (SIDE), the anonymity of online games may engender endorsement of group-consistent attitudes and amplification of social stereotyping, such as the adherence to gender norms predicted by expectations states theory. A $2 \times 3 \times 2$ virtual field experiment ($N = 520$) in an online first-person shooter video game examined effects of a confederate players' sex, communication style, and skill on players' compliance with subsequent online friend requests. We found support for the hypothesis that, in general, women would gain more compliance with friend requests than men. We also found support for the hypothesis that women making positive utterances would gain more compliance with friend requests than women making negative utterances, whereas men making negative utterances would gain more compliance with friend requests than men making positive utterances. The hypothesis that player skill (i.e., game scores) would predict compliance with friend requests was not supported. Implications for male and female game players and computer-mediated communication in online gaming environments are discussed.

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1. Introduction

One of the most popular video game genres is the *first-person shooter* (FPS) game (Entertainment Software Association, 2012). FPS games typically allow players to take part in fast-paced virtual shootouts with either computer-controlled opponents or real players from all over the world through the Internet. Although a large body of research has examined the motivations and gratifications that predict the uses of online games from the massively multiplayer online role playing (MMORPG) genre (e.g., Yee, 2006), less research has examined the nature of online interactions between game players in the extremely popular genre of online first person shooter (FPS) games. It is important to study online FPS games not only due to their commercial popularity and increasing pervasiveness as a form of "third place" (Steinkuehler & Williams, 2006), but also because studying the nature of player behavior allows online

FPS games to be verified as a research tool for unobtrusive observation of human interaction. For example, scholars have argued that online games can serve as "petri dishes" (Castronova, 2006) for experimentation without the common threats to ecological validity traditionally associated with controlled, lab-based research (Bainbridge, 2007; Williams, 2010), but these arguments have mostly been limited to the MMORPG genre to the omission of the popular FPS genre.

While research investigating behavior in online FPS games is limited, there have been studies exploring a range of responses to FPS games not played online. For instance, Colzato, van den Wildenberg, Zmigrod, and Hommel (2013) examined whether experience with FPS games generalizes to other cognitive control tasks. Holz Ivory and Kaestle (2013) examined profanity used by protagonist and antagonist characters in an FPS to examine effects on players' hostile expectations, accessibility of aggressive thoughts, aggressive feelings, and other responses. Barlett, Harris, and Baldassaro (2007) examined effects of playing FPS games on physiological arousal, state hostility, and aggressive response to hypothetical scenarios. Behavioral research focused on online FPS

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games is needed to complement this previous work and inform its application to the increasingly typical online FPS format.

Experimentation in online games provides the opportunity for researchers to identify new settings suitable for conducting unobtrusive research and to test the predictions of theories previously tested in artificial settings or with largely homogenous samples. Attempts to determine the sex of others are generally among the first judgments made by others in computer-mediated communication (Savicki, Kelley, & Oesterreich, 1999), so replicating the results of previous theories related to sex norms and stereotyping is a natural first step for validating the utility of FPS games as a medium for research. Given that online games are generally an inherently masculine space (Salter & Blodgett, 2012), it is likely that offline norms and stereotypes related to sex potentially guide players' interactions with others. Indeed, some early research has indicated that online gaming spaces offer markedly different experiences for male and female players (Fox & Tang, 2014; Gray, 2012). The salience and interpretation of cues about sex remain understudied in online games, however, and research has yet to manipulate sex and stereotypical behavior to explore these processes in a natural gaming environment.

In terms of computer-mediated communication in general, the social identity model of deindividuation effects (SIDE) has been applied widely to predict how individuals behave under conditions of online anonymity. This theory is relevant to FPS games as anonymity is often fostered by the use of generic avatars and pseudonymous user names. SIDE has been criticized, however, for the use of artificial experimental procedures and for relying on homogenous student samples whose behavior may not be generalizable to the wider population (Lee, 2004a; Postmes, Spears, & Lea, 1998). Given the natural setting of online games and the diverse demographic population of online game players (Yee, 2006), the use of virtual worlds is an ideal experimental setting to address these limitations of SIDE in a novel, previously under-examined setting.

It is also necessary to study the effects of player behavior in online games because available research on how game players communicate with others is not consistently explained by preexisting CMC theories. For example, although SIDE predicts that players (who are predominantly male in online FPS games; Jansz & Tanis, 2007) are more likely to conform to the suggestions of other males due to the salience of a shared group identity, surveys of game players suggest that female avatars are actually more likely to receive help than male avatars in predominately male settings (Hussain & Griffiths, 2008; Wang & Wang, 2008). These outcomes illustrate that the behaviors observed in the laboratory or in one specific type of online setting cannot be generalized to alternatively themed virtual settings without replication (Williams, 2010). Thus, to verify the validity of FPS games as a research setting and test the assumptions of sex and gender norms and SIDE in a natural context, a large-scale field experiment involving 520 players was conducted that employed a 2 (player sex: male vs. female) × 3 (utterance type: positive vs. negative vs. no utterances) × 2 (player skill: high vs. low) between-subjects design.

2. Sex and gender stereotyping online

The types of behavior that men and women are expected to exhibit are often guided by sex stereotypes learned and socially reinforced over time. Common sex and gender stereotypes communicate that whereas men are dominant and are concerned with agentic goals, women are submissive and are oriented toward communal goals (Eagly & Steffen, 1984; Holz Ivory, Gibson, & Ivory, 2009). Although much early research on computer-mediated communication (CMC) purported that diminished face-to-face cues

might limit the operation of social stereotypes, this has not been the case (Yates, 2001). In fact, Sierpe (2005) argues that CMC merely recreates existing practices and norms.

Sex roles that suggest that women should be unassertive and submissive appear to dictate interactions in online environments. In asynchronous CMC such as online newsgroups and discussion lists, Herring (2000) explains that males are more likely to post longer messages, begin and close discussions, assert their opinions, and use crude language. On the other hand, females are more likely to post short messages, qualify their statements, apologize, and express support of other people. Although males and females appear to participate more equally in synchronous CMC in terms of message number and length (although much of this is determined by buffer size and real-time interaction constraints), they use different discourse styles—men tend to be oppositional and adversarial, whereas women tend to be aligned and supportive. Many females receive disproportionate attention, particularly of a sexual nature, such that gendered differences may function as cues to attract predatory attention from men (Herring, 2000).

Use of gendered language in online CMC may also affect online interactions. Lee (2007) examined how language differences in women and men influence reactions to their partners in anonymous, text-based CMC. She found that participants who did not receive personalizing information about their partner were more likely to make gender inferences about their partner via language cues than those who did. Furthermore, depersonalized, gender-typed participants behaved according to gender stereotypes, as individuals conformed more to masculine- versus feminine-comment partners and gender-typed men showed less conformity than women.

Simple group membership cues such as the sex of a character can also affect the inferences that people make about an anonymous partner in CMC. Lee (2004b) found that individuals' perceptions of an anonymous CMC partner are affected by the sex of a randomly assigned character that represents the partner. Specifically, after playing a trivia game on a gendered topic, individuals classified their partner based on the character's sex, women conformed more to male-character than female-character partners on masculine topics, and men conformed more to male-character than female-character partner on feminine topics, potentially indicative of men's resistance to influence by women.

3. Theoretical frameworks

3.1. Expectation states theory

Expectation states theory suggests that diffuse status characteristics such as sex help people anticipate how others will behave in social interactions (Berger, Fisek, Norman, & Zelditch, 1977; Ridgeway, 2001). Cultural norms have shaped how the sexes "should" and "should not" behave, and people seek cues about sex to prescribe cultural norms to interactants and judge them accordingly. Traditionally, men are seen as more competent and of higher status than women, whereas women are considered lower status and thus expected to behave in a submissive manner. When women violate this expectation by interacting in an assertive or aggressive manner, the legitimacy of their behavior is questioned and they are often socially punished (Ridgeway, 2001; Ridgeway & Bourg, 2004).

Expectation states theory is an appropriate framework for examining men's and women's interactions in online games. Because video games are popularly perceived and reiterated as a male space (Hartmann & Klimmt, 2006; McQuivey, 2001; Salter & Blodgett, 2012), male gamers are afforded higher status and higher perceived competence than female gamers. Although women are often able to remain hidden or anonymous in gaming