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Gamer Girl vs. Girl Gamer: Stereotypical Gamer Traits Increase Men's Play Intention

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Abstract

The present study utilized two theories (the common ingroup identity model; expectation states theory) to examine male players' intention to play video games with a female player. Consistent with the common ingroup identity model, male participants who were exposed to a pseudo Xbox profile presenting a woman as a stereotypical gamer showed stronger identification with the gamer category compared to those who saw a profile presenting her as a stereotypical female player. These male participants in turn showed stronger intention to play video games with the woman in the Xbox profile. Results also supported expectation states theory, suggesting that viewing the profile which represents a woman as a stereotypical gamer was related to men's stronger intention to play a competitive rather than a casual video game with her. These results shed light on the positive influence of presenting female video game players with counterstereotypical traits to reduce discrimination against women in gaming.

Keywords: gaming; gender; female player; male player; gamer identity; play intention

Highlights

- The Common Ingroup Identity Model and Expected States Theory were tested

- Exposure to a woman with stereotypical gamer traits increased men's play intention

- Exposure to a woman with stereotypical gamer traits increased men's gamer identity

- Gamer identity is associated with men's play intention with a woman

Gamer Girl vs. Girl Gamer: Stereotypical Gamer Traits Increase Men's Play Intention

Sexism has long been an issue within the gamer community (Fox & Tang, 2014). Female players tend to be evaluated as less competent than their male counterparts and are perceived as only capable of playing casual video games (Kafai et al., 2008; Shen et al., 2016). There are incidents where male players openly discriminate against female players (e.g., derogative language; harassment; Kuznekoff & Rose, 2013; Tang & Fox, 2016; Tang et al., 2020), while in other cases male players are simply reluctant to play video games with women (Delamere & Shaw, 2008). The present study sought to address sexism in the gaming context by examining the processes that influence men's intention to play video games with a woman.

Maleness has long been part of the privileged default gamer in video game culture (Gray, 2012; Shaw, 2012). A more diverse gamer profile may have evolved in reality, in which women now comprise nearly half of all gamers (Entertainment Software Association, 2019), but the prevalent stereotype[1] still primarily associates gamer identity with being a man (Shaw, 2012; Paaßen et al., 2017). The stereotypical gamer traits highlight gaming competence and skill (Paaßen et al., 2017; Taylor, 2012; Salter & Boldgett, 2012), which are consistent with stereotypical male traits (Bem, 1974). Women who play video games, on the other hand, are not considered "true gamers" (Paaßen et al., 2017, p. 76). That is, the stereotype of female players holds that women do not play complex or competitive video games on computers or consoles like a "true gamer" would, instead they are perceived as only casually playing simple, "inferior" games (e.g., *The Sims*, *Candy Crash Saga*) on "inferior" platforms (e.g., smartphones; Vanderhoef, 2003; Shaw & Chess, 2016).

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[1] Based on social identity research (e.g., Turner et al., 1987), in the present study *stereotype* is defined as perceived traits of a social category without consideration for individuating information.

Additionally, the representation of women in video game culture has been unbalanced. In the video game industry, it is reported that women are underrepresented as core developers (Weststar & Legault, 2016). Similarly, women are underrepresented as characters in video games (Waddell et al., 2014). Female characters in video games are typically consistent with stereotypes of being cute and innocent, a love interest, or a victim who needs to be saved by male characters (Gestos et al., 2018), and this underrepresentation and unidimensional portrayal is mirrored in the negative treatment of female players in the gamer community (e.g., Vermeulen et al., 2017; Yücel & Rızvanoğlu; 2019). Empirical research has found that voices of female players in a multiplayer video game received three times more negative comments (e.g., derogatory gendered language) compared to voices of male players (Kuznekoff & Rose, 2013). Research in sexual harassment in gaming has also found evidence that women are disproportionally more often the target of harassment compared to men (Tang & Fox, 2016; Tang et al., 2020). In the present study we sought to understand the mechanisms of men's play intention with a woman by utilizing the common ingroup identity model (CIIM) and expectation states theory (EST).

1.1 Common Ingroup Identity Model

According to self-categorization theory, people tend to categorize both other people and themselves into social categories (Turner et al., 1987). After categorization, members of the ingroup tend to favor other ingroup members to maintain a positive self-evaluation in intergroup comparisons (i.e., ingroup favoritism; for review, see Turner & Reynolds, 2011). Extending self-categorization theory and social identity theory (Tajfel & Turner, 1979), the CIIM theorizes that ingroup favoritism can be adopted to reduce intergroup disparities (e.g., sexism) through a recategorization process (Gaertner et al., 1993; Gaertner & Dividio, 2000). The model suggests

that changes in environmental or perceptual cues can alter cognitive representations of groups (e.g., recategorizing people as members of one group ["we"] instead of members of separate groups ["we/they"]). When individuals recategorize their ingroup and the immediate outgroup ("we" vs. "they") into one superordinate group (e.g., the higher-order "we"), the former in- and out-group members all become part of this larger group. As a result, ingroup favoritism is expected to extend to all members of the new, more inclusive group. The former, lower-level ingroup members are now expected to treat the former outgroup members with favorable evaluations and interaction intentions. An example of how recategorization can increase group members' perceptions of the similarities between in- and out-groups is intergroup contact (Allport, 1954; Schiappa et al., 2005). In the video gaming context, an example of forming a common ingroup identity would be male players, after a certain level of contact with the female player group, recognizing the similarities between the two groups and recategorization both themselves (i.e., "we") and female players (i.e., "they") as gamers (i.e., the superordinate "we"). Consequently, these male gamers will be expected to treat all female players as their fellow members of the new, superordinate ingroup.

1.2 Expectation States Theory

Expectation states theory explains interpersonal interaction between members of different social groups (e.g., male and female video game players). The theory is concerned with the ways in which status hierarchies are formed and maintained and how these status hierarchies influence expectations of people's performance (Berger et al., 1977; Berger & Zelditch, 1998; Correll & Ridgeway, 2003). The theory was originally developed to explain the status structures within a homogeneous social group, but now is commonly used to study the interaction between people from groups with salient social differences. According to EST, people differ in diffuse status

characteristics (defined as individuals' socially significant attributes) such as gender. These diffuse status characteristics are associated with widely held stereotypical beliefs regarding competence with one category (e.g., male video game players) over another (e.g., female video game players). As a result, these characteristics serve as the basis for people to develop expectations on how well an individual performs a given task.

Additionally, diffuse status characteristics not only guide people's expectations on overall competence but also contribute to forming expectations on particular tasks. In the gaming context, this means a stereotypical male player may be expected to be generally more skilled at playing video games than a stereotypical female player, but regarding specific types of video games there are different competence expectations for men and women. Based on research on stereotypes of gamers, expectation states theory would predict that men are expected to have stronger interest in playing competitive video games (e.g., *Call of Duty*) than playing casual video games (e.g., *The Sims*), and thus are expected to be more competent at competitive than casual video games. In contrast, women are stereotypically expected to have stronger interest in playing casual video games than playing competitive video games, and thus are expected to be more competent at casual than competitive video games.

1.3 Present Study and Hypotheses

The present study explores the effect of two factors (i.e., player profile, type of game) in a test of self-identified male video game players' intention to play with a woman. The player profile manipulation uses an Xbox profile of an example individual who is female and plays video games (referred to as the "actor" subsequently). The profile represents the actor either as a

stereotypical gamer or a stereotypical female player (see Appendix for an example[2]). As

mentioned earlier, in the gaming world the stereotypical default gamer is a man, and female

players are profiled as having different traits than the default gamer due to gender differences

(Gray, 2012; Shaw, 2012). Consequently, although the superordinate gamer identity includes all

women and men who play video games, the stereotypical gamer profile in the study still

primarily features male player traits (Paaßen et al., 2017). On the other hand, the profile of a

female player features stereotypical traits of a woman who plays video games. The second factor

uses a hypothetical, new video game to manipulate the type of game (competitive vs. casual) that

the participants were asked to test with the actor. In the present study a competitive game is a

video game that requires frequent practice and high involvement, while a casual game is a video

game that players can enjoy without frequent practice or high involvement (Taylor, 2012; Paaßen

et al., 2017). A competitive game would be the expected choice for a stereotypical gamer and a

casual game would be the expected choice for a stereotypical female video game player.

     1.3.1 Testing Common Ingroup Identity Model Processes. The CIIM predicts that

perceived similarities between the lower-level in- and out-groups are positively associated with

ingroup members' identification with the superordinate group (Gaertner et al., 1993; Gaertner &

Dividio, 2000). In the present study male and female players are considered as lower-level in-

and out-groups, while gamer identity is the superordinate group that is inclusive of all male and

female players. According to the CIIM, if male gamer participants recognize the similarities

between themselves and the female actor portrayed in the Xbox profile, they are more likely to

identify with the common ingroup identity of gamers. However, stereotypical male players and

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[2] A complete set of stimuli can be found online.
https://osf.io/m9zwp/?view_only=51bd6f67e6b542bca735524a9f31f356

stereotypical female players have relatively distinct traits regarding video game preference (e.g., male players prefer competitive video games and female players prefer casual video games; Paaßen et al., 2017), consequently when the actor is described with stereotypical female player traits in the profile, male participants are more likely to recognize the differences between themselves and the female portrayed in the profile and identify her as a member of a distinct group. In contrast, because stereotypical gamer traits and stereotypical male gamer traits overlap extensively (Paaßen et al., 2017), the male participants are expected to recognize the similarities between the actor and themselves when the actor profile primarily contains gamer traits. Such recognized similarities should contribute to male gamers' recategorization from the "we/they" distinction between male and female video game players to one of "gamers" as the relevant ingroup and non-gamers as the relevant outgroup. Therefore, we hypothesize that:

H1: Male video game players will report stronger identification with the superordinate gamer identity when the female profile actor is presented as a stereotypical gamer as compared to a stereotypical female video game player.

Previous research on the CIIM has found positive intergroup interactions after recategorization into the superordinate identity (e.g., Van Ryn et al., 2011; Nier et al., 2001; Peltokorpi, 2020). In the present study, male players are expected to have more positive interaction intentions toward the player featured in the female profile when they recategorize themselves as the superordinate category of a gamer. Because one prevalent form of gender discrimination in the gaming context lies in men's reluctance to play with women (Thornham. 2008), we chose play intention with the female player in the profile as our behavioral outcome. Additionally, according to the CIIM, identifying with the superordinate group is the hypothesized mechanism through which lower-level ingroup members recognize the similarities

between in- and out-groups and exhibit favoritism to all members who belong to the new common ingroup (Gaertner et al., 1993; Gaertner et al., 2000). Thus, identification with the superordinate gamer identity will be tested as a mediator predicting intention to play a game with the female player.

H2: The strength of male video game players' identification with the superordinate gamer identity will mediate the effect of male players' exposure to the actor profile on their intention to play video games with the actor.

  1.3.2 Testing Expectation States Theory. According to EST, people form performance expectations based on the target individual's status characteristics (Berger et al., 1977; Berger & Zelditch, 1998; Correll & Ridgeway, 2003). The theory predicts that diffuse status characteristics such as gender provide the basis for people to develop general expectations on performance. In the present context, this means that men, compared to women, are perceived as being more interested in practicing and becoming skilled at playing video games. In addition, because the stereotypical default gamer is a man (Paaßen et al., 2017; Taylor, 2012), when comparing a stereotypical gamer with a stereotypical female player, the former is expected to exhibit stronger competence in gaming.

  Additionally, in the present study we sought to understand a behavioral outcome of play intention. Past research has identified winning (e.g., advancement in comparison with other players) as one of the major goals of video gaming (Heeter et al., 2011; Taylor, 2012). In order to excel in playing the given video game, male video game players are expected to exhibit stronger play intention with a stereotypical gamer compared to a stereotypical female player. Thus we hypothesize that male gamer participants would show stronger play intention with the actor when

she is presented as a stereotypical gamer compared to when she is presented as a stereotypical female video game player.

H3: Male video game players will report stronger intention to play with the actor when she is presented as a stereotypical gamer as compared to a stereotypical female video game player.

After being exposed to a profile which represents the actor either as a stereotypical gamer or a stereotypical female video game player, participants were asked their intention to play an example competitive or a casual video game with her. According to EST, diffuse status characteristics (e.g., gender) help people develop assumptions for general competence as well as performance on specific tasks (Berger et al., 1977; Berger & Zelditch, 1998; Correll & Ridgeway, 2003). In the present study, the actor represented with a gamer identity, which is stereotypically associated with a man, is expected to be more interested in playing and to excel in competitive video games than casual video games. As a result, the actor with stereotypical gamer traits is expected to exhibit greater competence in competitive video games compared to casual video games. On the other hand, a stereotypical female video game player is expected to be more interested in casual video games than competitive video games, and thus is expected to exhibit greater competence in casual compared to competitive video games. Therefore, participants who were exposed to the stereotypical gamer profile should assume that the actor is more competent in playing competitive than casual video games, and thus prefer to play a competitive game more than a casual game with her. Conversely, with a profile featuring a stereotypical woman who plays video games, participants are hypothesized to form a performance expectation that she is better at casual than competitive video games, and as a result exhibit stronger preference to play a casual game with her.

H4: There will be an interaction effect of exposure to the actor profile and type of game on male video game players' play intention with the female actor. Male players will report stronger intention to play a competitive video game than a casual video game with the actor when she is presented as a stereotypical gamer compared to as stereotypical a female video game player.

2. Method

2.1 Participants

Participants (n=440) were male video game players recruited from Qualtrics Panels. Because part of the purpose of the study was to test the CIIM among male game players, only self-identified male gamers were selected in the sample. Participants were included in data analysis if they choose "male gamer" for the question "Which of the following category would you identify yourself with?" (other options included "female gamer", "female non-gamer", "male non-gamer", and "none of the above"). Subjective identification with a group is argued to be a better predictor of intergroup evaluation compared to objective measures (e.g., gaming frequency; Turner, 1984). Additional qualification questions included sex (male only) and age (18 years or older). To maintain data quality, a number of attention check questions were utilized and participants who started the survey but failed at the attention check questions were terminated from the survey and none of their information was recorded. With participants who failed at the attention check questions removed, missing data was not an issue as every remaining participant (n=440) completed all measures in the survey.

Participants' age ranged from 18 to 85 (M=34.84, SD=11.45). The racial breakdown was 78% White, 12% Black, 4% Asian, 4% participants selected more than one race, and 3% participants selected "other". Additionally, 2% participants identified as Hispanic. Participants who completed the 15-minute online experiment were compensated according to their agreement

with Qualtrics. The study procedure was conducted in accordance with the principles of the

Declaration of Helsinki and was determined exempt by the Institutional Review Board at

[University].”

2.2 Design

The present study used a 2 (female actor profile: stereotypical gamer vs. stereotypical

female video game player) by 2 (type of video game: competitive vs. casual) between-subjects

factorial design with participants randomly assigned to one of the four conditions. The actor

profile was manipulated using an Xbox profile that represents her either with gamers' stereotypic

traits or with female video gamer players' stereotypic traits (see Appendix for an example

profile). There were three versions of actor profile for each condition, all of which were pilot

tested (see "Pilot testing of actor profile" for more detail). Type of video game was manipulated

by asking participants about their intention to play a *Call-of-Duty*-like video game or a *Sims*-like

video game with the actor. We chose *Call of Duty* and *The Sims* as an example of a competitive

and casual video game for two reasons. First, in video game culture *Call of Duty* is argued as one

of the most popular competitive video games (Carroll, 2021) and *The Sims* one of the most

popular casual games (Huguenin, 2008). Second, these two games are selected to be consistent

with the actor profile manipulation. The actor profile with gamer traits presented the actor as in

favor of competitive video games, which used *Call of Duty* as an example. The actor profile with

female gamer traits highlighted the actor's preference of *The Sims*, which was an example of

casual video games[3].

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[3] To summarize, each participant was randomly exposed to one of the four conditions: (1) an actor profile that
represents her with gamer traits and the possibility of playing a hypothetical *Call-of-Duty*-like video game with her;
(2) an actor profile that represents her with gamer traits and the possibility of playing a hypothetical *Sims*-like video
game with her; (3) an actor profile that represents her with female player traits and the possibility of playing a

2.3 Procedure

The survey was posted on Qualtrics Panels. At the beginning of the survey, it was

emphasized that this was a study of their opinions and there were no right or wrong answers. To

avoid stimulus sampling issues (Wells & Windschitl, 1999), multiple avatars were used for each

actor's profile condition. Each participant was exposed to one avatar of the actor out of a

possible three avatars that represent her as a gamer and three that represent her as a female video

game player, dependent upon which condition the participant was in. For the type of the game,

there was only one version for each of the casual and competitive game conditions.

2.4 Pilot Testing of the Female Actor's Profile

The female actor's profile was manipulated to highlight the actor with either gamer traits

or traits of female video game players, to make her easily categorized as a gamer or a female

player. Previous literature has identified both stereotypical gamer traits and stereotypical female

player traits as multi-faceted (e.g., Shaw, 2012; Stone, 2019; Yao et al., 2018), thus in the profile

of each condition we wanted to capture the overall stereotypes rather than specific parts of the

identities. There were three parts of the profiles that differ between the gamer condition and the

female player condition including an avatar (located at the top left corner of the profile; see

Appendix), a bio (located at the bottom right corner of the profile), and a gametag

(i.e., "COD4Life3062" for the stereotypical gamer condition, "itsIcecream4595" for the

stereotypical female player condition). Avatars had six versions for each condition with the

female player condition featuring a casual video game (i.e., *The Sims*) and the gamer condition

featuring a competitive video game (i.e., *Call of Duty*). There was one version of the actor's bio

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hypothetical *Call-of-Duty*-like video game with her; (4) an actor profile that represents her with female player traits
and the possibility of playing a hypothetical *Sims*-like video game with her.

and gametag for each condition, which were grouped with each of the six versions of avatars to form a total of six profiles per condition. The actor's bio and gametag were drafted by the first author after reviewing stereotypical gamer traits and stereotypical traits of women who play video games from the existing literature (see, for example, Paaßen et al., 2017) and online forums (e.g., GirlGamers on reddit.com). Thus, we pilot tested six actor's profiles with female player traits and six actor's profiles with gamer traits.

Participants (n=188; age ranged from 17 to 85; M_{age}=38.45, SD_{age}=14.69) in the pilot study were self-identified male video game players (same threshold as the main study) recruited from Qualtrics Panels and randomly assigned to be exposed to one of the six actor profiles with stereotypical female player traits and one of the six actor profiles with stereotypical gamer traits. The order of the two profiles that were rated was randomized. Thus, each profile was evaluated by approximately 30 participants (range=27 to 35). After viewing the profile, participants were asked to rate the actor's typicality as a female player (i.e., "The profile owner is like a typical female gamer.") and as a gamer (i.e., "The profile owner is like a typical gamer.") on a 11-point Likert scale (0=*strongly disagree*, 10=*strongly agree*).

Three out of the six actor profiles with gamer traits and three out of the six actor profiles with female video game player traits were selected. Typicality ratings of the selected actor profiles with gamer traits and female player traits were averaged to form a gamer typicality index and a female player typicality index. Rating differences between gamer typicality and female player typicality of these profiles were significant. The three versions of profiles with gamer traits on average had higher gamer typicality ratings ($M_{female\ gamer}$=5.78, $SD_{female\ gamer}$=3.43; M_{gamer}=7.30, SD_{gamer}=2.58; t(182)=3.54; p<.001) and the three versions of profiles with female player traits on average had higher female player typicality ratings ($M_{female\ gamer}$=7.18, SD_{female}

$_{gamer}$=2.91; M_{gamer}=6.08, SD_{gamer}=2.84; $t(188)$=-2.62; p=.01). Additionally, a one-way ANOVA was performed to test the potential issue of message heterogeneity (Jackson, 1992; Slater, Peter, & Valkenburg, 2015) between the stimuli within each condition. Results showed no significant difference in ratings of gamer typicality ($F(2, 96)$=.004, p=.996) or female player typicality between the three versions of gamer profiles ($F(2, 96)$=.45, p=.64). Similarly, results showed no significant difference in ratings of gamer typicality ($F(2, 92)$=.13, p=.88) or female player typicality between the three versions of female player profiles ($F(2, 92)$=.98, p=.38).

2.5 Measures

2.5.1 Strength of Gamer Identity. The extent to which male video game players identify with the superordinate gamer identity was measured with a four-item scale (Doosje et al., 1995; Spears et al., 1997). Participants' agreement with these statements ("I identify with all other gamers," "I see myself as a gamer," "I am pleased to be a gamer," "I feel strong ties with other gamers") was measured on a 11-point Likert scale from 0 (strongly disagree) to 10 (strongly agree; M=7.79, SD=1.98; Cronbach α=.88).

2.5.2 Play Intention. Play intention was measured by participants' intention to play a hypothetical video game with the actor. Participants were prompted that:

> "We are developing a new video game that is similar to *The Sims/Call of Duty* (*The Sims* was used for the casual game condition; *Call of Duty* was used for the competitive game condition). At this time, we are ready to start play testing this new *Sims*-like/*Call-ofDuty*-like game with a multiplayer mode. Based on your impression of the profile owner, if you were asked to test this new game with the profile owner, how would you feel about engaging in the following behaviors?"

Participants then rated their play intention with four items ("playing this *Sims*-like/*Call of Duty*like video game with the profile owner on the same team," "talking about this *Sims*-like/Call of Duty-like video game with the profile owner," "learning this *Sims*-like/*Call of Duty*-like video game from the profile owner," "practicing this *Sims*-like/*Call of Duty*-like video game with the profile owner") on a 7-point Likert scale (1=dislike a great deal; 7=like a great deal; *M*=5.33, *SD*=1.51; Cronbach α=.94).

2.5.3 Frequency of Video Game Play. Participants' frequency of playing video game during the past week was measured by the question "how often did you play video games during the past week?". Participants were instructed to select one of the following options: "almost never", "one time", "a couple times", "every other day", "daily". Responses were recoded into five consecutive numbers from one (almost never) to five (daily), *M*=4.13, *SD*=.99.

3. Results[4]

The actor profile variable was recoded as (1) for the stereotypical gamer condition and (0) for the stereotypical female video game player condition. The type of game variable was recoded as (1) for the competitive video game condition and (0) for the casual video game condition. See Table 1 for the correlation matrix of zero-order correlations between key variables. Frequency of video game play was included in all tests as a covariate[5].

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[4] All results and the dataset can be found online.
https://osf.io/m9zwp/?view_only=51bd6f67e6b542bca735524a9f31f356
[5] We also ran all analyses without frequency of video game play as a covariate. Results are the same with or without the covariate. Results with the covariate are reported here in the manuscript. SPSS outputs of analyses without the covariate are shared on OSF.

Table 1

Correlation Matrix

	Actor Profile	Type of Game	Strength of Gamer Identity	Play Intention
Actor Profile	-	-	-	-
Type of Game	-.01	-	-	-
Strength of Gamer Identity	.10	-.04	-	-
Play Intention	.18	.01	.38	-

H1 and H2 were tested using Model 4 in SPSS PROCESS (Version 3.5; Hayes, 2018). Regression coefficients are unstandardized. Unbiased sample covariance was used for maximum likelihood estimation. The reported confidence intervals (CIs) are 95% CIs with 5,000 bias-corrected bootstrap samples. The model and path results can be found in Figure 1 (R^2=.16, F(3, 436)=28.31, p<.001). H1 was supported (B=.46, SE=.18, t=2.51, p=.03, 95%CI[.10, .83]). Male gamer participants reported stronger identification with the superordinate gamer identity after seeing the profile presenting the actor as a stereotypical gamer compared to those who saw the profile presenting her as a stereotypical female video game player. H2 predicted that the strength of participants' gamer identity would mediate the effect of exposure to the actor profile on their intention to play with the actor. This hypothesis was also supported (B=.13, SE=.05, 95%CI[.03, .24]). Compared to the actor profile with stereotypical female player traits, participants who were exposed to the profile with stereotypical gamer traits showed stronger identification with the superordinate gamer identity, and in turn stronger intention to play video games with the actor, regardless of game type.

Figure 1

Model Outcomes
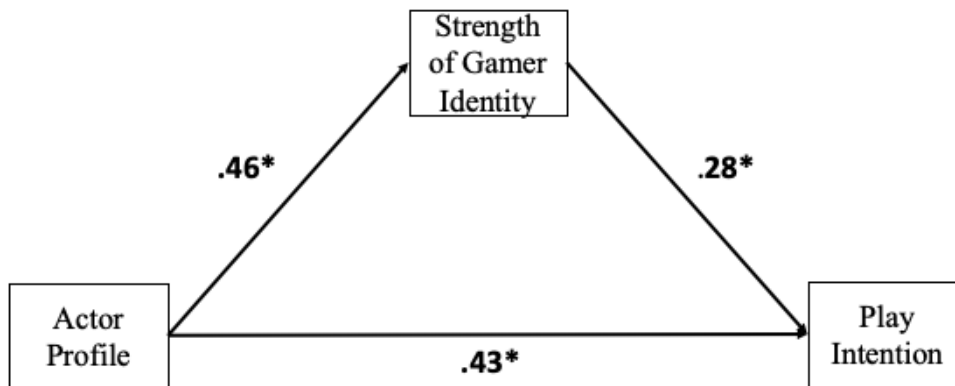
A 2 (actor profile) × 2 (type of game) between-subjects ANOVA with male players' play intention with the actor as the dependent variable was conducted to test H3 and H4. H3 predicted that participants would intend to play video games with the actor more when she is presented with a gamer profile compared to a female player profile. This hypothesis was supported. The simple main effect of the two-way ANOVA indicated that the actor profile significantly predicted male player's play intention with the actor ($F(1, 435)=15.34$, $p<.001$). Exposure to the actor profile with gamer traits increased participants' intention to play video games with the actor regardless of whether it is a casual or competitive video game. H4 predicted a two-way interaction between actor profile and type of game on participants' play intention with the actor. This hypothesis was supported ($F(1, 435)=6.10, p=.01$). As seen in Figure 2, participants reported higher intention to play a casual video game with the actor compared to a competitive video game when they were exposed to the stereotypical female player profile, but a higher intention to play a competitive video game with her compared to a casual video game when they were exposed to a stereotypical gamer profile. The main effect of type of game on play intention was nonsignificant ($F(1, 435)=.05, p=.85$).

Figure 2

*Significant Interaction between Actor Profile and Type of Game on Play Intention*
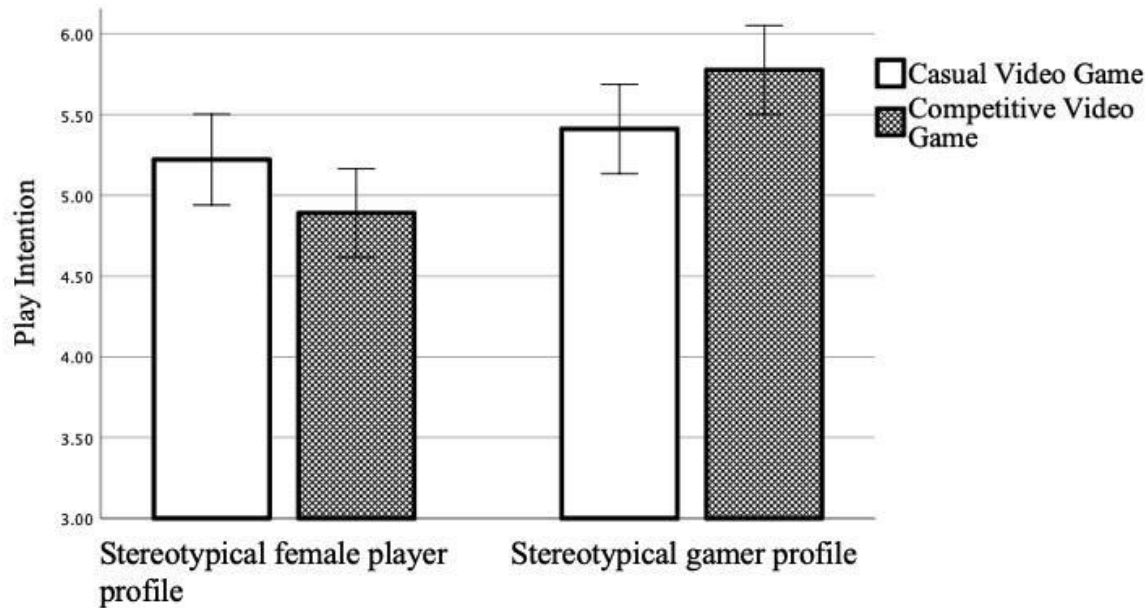
To test all hypotheses in one model, Model 5 was used in SPSS PROCESS (Version 3.5; Hayes, 2018). Per Hayes' recommendation to test statistical interaction in PROCESS, the actor profile variable was recoded as (-0.5) for the female player profile condition and (+0.5) for the gamer profile condition. The type of game variable was recoded as (-0.5) for the casual video game condition and (+0.5) for the competitive video game condition. Regression coefficients were unstandardized. Unbiased sample covariance was used for maximum likelihood estimation. The reported confidence intervals (CIs) were 95% CIs with 5,000 unbiased bootstrap samples. The model and path results can be found in Figure 3 (R^2=.18, $F(5, 434)$=18.96, p<.01). H1 was supported, indicating that male players showed stronger identification with the superordinate gamer identity after being exposed to the actor profile with stereotypical gamer traits compared to the profile with stereotypical traits of female video game players (b=.46, SE=.18, t=2.51, p=.01, 95%CI[.10, .83]). H2 was also supported, demonstrating that strength of gamer identity

significantly mediated the effect of actor profile on interaction intention ($b=.13$, $SE=.06$, 95%CI[.03, .25]). Compared to the actor profile with stereotypical female player traits, participants who were exposed to the profile with stereotypical gamer traits showed stronger identification with the superordinate gamer identity, and in turn stronger intention to play video games with the female actor. Strength of gamer identity was also significantly and directly associated with play intention ($b=.28$, $SE=.03$, $t=8.23$, $p<.01$, 95%CI[.21, .35]). H3 was also supported by the significant direct effect of actor profile on play intention ($b=.42$, $SE=.13$, $t=3.20$, $p<.01$, 95%CI[.16, .68]). Exposure to the actor profile as a stereotypical game increased male gamer participants' intention to play video games with the actor, regardless of the type of video. Lastly, H4 was supported as a significant two-way interaction was found between actor profile and type of game on participants' play intention with the actor ($b=.76$, $SE=.26$, $t=2.88$, $p<.01$, 95%CI[.24, 1.27]). The main effect of type of video game on play intention was nonsignificant ($b=.07$, $SE=.13$, $t=.50$, $p=.62$, 95%CI[-.19, .32]).

Figure 3

Model Outcomes
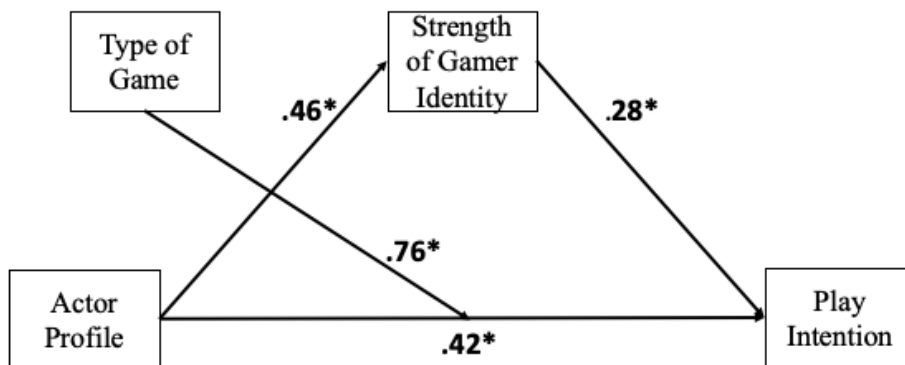
4. Discussion

The present study utilized the CIIM (Gaertner et al., 1993; Gaertner & Dividio, 2000) and EST (Berger et al., 1977; Berger & Zelditch, 1998; Correll & Ridgeway, 2003) to address the issue of sexism among video game players. The findings suggest that both common ingroup identity and performance expectation are key mechanisms of male players' intention to play video games with a woman. We found that male players intended to play both competitive and casual games with the actor after their gamer identity was made salient, supporting CIIM. We also found male players' stronger intention to play a competitive game than a casual game with the actor after viewing her profile as a stereotypical gamer. However, male players had a stronger intention to play a causal game than a competitive game with the actor after viewing the stereotypically female player profile. This result supports EST.

The findings regarding both the CIIM and EST clearly indicate the important role of messaging in combatting gender inequity within the video gaming context. When exposed to a woman with a gamer profile which highlights her gaming competence, male players expected more competence from that woman and indicated a stronger intention to play video games with her. Unfortunately, in today's video game culture women are rarely represented as skillful, competent players. A typical female player is still perceived as lacking skills in gaming and preferring to play casual video games (Gestos et al., 2018; Yao et al., 2018). To promote gender equity in the gaming community, messages that represent women as skilled gamers with diverse interests in video games are needed. Indeed, a handful of studies have tested the influence of presenting female players with counterstereotypical traits and found that these counter-stereotypical images contribute to reduce stereotypes toward female video game players (Yao et al., 2020) and to increase positive attitudes toward these women (Yao & Rhodes, 2021).

Researchers are encouraged to apply various theories in the context of gender and gaming to develop effective messages that challenge the current video game culture's unidimensional representation of female players. Additionally, results from previous research (e.g., Ellithorpe et al., 2018) as well as the present study showed mediated intergroup contact to be effective in reducing prejudice, thus prosocial messaging in future research may continue to focus on *showing* competent women in gaming rather than *telling* male players the negative consequences of gender discrimination.

As predicted in the CIIM, male players were more likely to identify themselves as a typical gamer after seeing a woman's Xbox profile with gamer traits. This result indicates that recategorization into the superordinate gamer category plays a critical role in men's intention to engage in game play with women. When participants' gamer identity was made salient, their intention to interact with a former outgroup member (i.e., a female player) increased. Viewing a female player who embodied the traits of a stereotypical gamer led to male players' recategorization into the superordinate gamer identity. Thus, one effective way for the video game community to stimulate male players to recategorize into the superordinate and more inclusive gamer category is to present more women as skilled, competent video game players.

There are other predictors proposed by the CIIM for recategorization that can be applied to the gaming context, such as encouraging in- and out-group members to play cooperatively instead of playing competitively (e.g., Velez et al., 2014) or highlighting similarities over differences in physical appearance between the in- and outgroups (e.g., Ellithorpe et al., 2018). Future research is recommended to test these CIIM propositions in the context of gender and gaming. Members of the video game industry could also benefit from these findings. For example, instead of sexualized female characters, video game developers may apply CIIM in

video game design and develop more female characters who share similar physical features with male characters. We also recommend researchers test whether recategorization into a superordinate, inclusive identity may reduce misogyny and other forms of hateful messages both within and beyond gaming activities. Indeed, sexism in other male-dominant fields also exists (e.g., STEM), which has inspired research using the common ingroup identity approach to promote gender equity (e.g., Klar, 2018). More research examining the recategorization process to reduce gender discrimination in non-gaming contexts is needed to cross-validate CIIM and test boundary conditions of the model.

Despite the positive outcome of reducing gender discrimination in gaming, it is important to note that the intergroup contact presented in the current study may potentially have negative consequences. In our study the female actor in the Xbox profile was treated more favorably by men when she was presented with stereotypical gamer traits, which overlap extensively with stereotypical male gamer traits. This could mean that male players, through identifying with the superordinate gamer category, show stronger interaction intention with a woman when she possesses traits of their own subgroup level ingroup (i.e., male gamers). This finding echoes with the CIIM proposition that members of the subgroup with higher social status; (e.g., male gamers, as compared to female gamers) tend to view the characteristics of the superordinate identity (e.g., gamer) as reflecting the dominant values and beliefs of their own subgroup level ingroup (e.g., male gamer; Devos & Banaji, 2005; Waldzus et al., 2004). Thus, it is possible that male players' identification with the superordinate identity as well as their favoritism toward the female actor is triggered by the overlap between her traits and the stereotypical traits of the male gamer group. This could potentially be harmful for women in gaming as they may need to present themselves as stereotypical male gamers to be accepted as part of the gaming community (see Wolsko et al.,

2006). CIIM identified a dual identity approach to combat this potential harm to the lower-status group, where members of the lower-status group can choose to have both the common ingroup identity and their subgroup level ingroup identity salient (e.g., simultaneously salient gamer identity and female gamer identity; Gonza´lez & Brown, 2006). To further promote an inclusive gender dynamic in the gaming community, future research should focus on the perspective of women who play video games and test how the dual identity process works with these women.

The tested outcome of the present study is male players' play intention with a woman. It is critical to acknowledge that men's increased play intention could indicate both male players' friendly (e.g., positive relationship) or hostile interaction intention (e.g., brigading, harassment) with female players. Indeed, previous research has demonstrated situations where intergroup contact can exacerbate rather than reduce prejudice (e.g., Paolini et al., 2010; Tajfel & Turner, 1979). Because the goal of our study is to promote positive gender dynamics in gaming, we focused on positive interaction intention and the items used to measure interaction intention were all positive (e.g., "practicing this *Sims*-like/*Call of Duty*-like video game with the profile owner"). However, what remains unknown in our study is whether there is hostility in addition to positivity when male players express their intention to play with the example female player. Thus, future research is encouraged to measure both positive and negative outcomes of intergroup contact in the focal context. Another recommendation for future research lies in testing the long-term effect of contact on intergroup relations. Research in CIIM has recognized the difficulty of sustaining a common ingroup identity beyond the initial intergroup contact (Hewstone, 1996). Therefore, it is of interest that future research seeks ways to sustain the potential positive impact of identifying with the superordinate gamer identity on reducing gender prejudice in gaming.

The CIIM has been tested extensively through communication channels such as face-to-face (e.g., Gaertner et al., 1989), and one of the present study's contributions to CIIM research lies in using video gaming as the platform to test the common ingroup identity process. According to the Social Identity Model of Deindividualization (SIDE), social cues are restricted in computer-mediated communication (e.g., playing video games; Spears & Postmes, 2015). When social cues are limited, individuals tend to rely on salient group memberships to guide their behaviors. Consequently, compared to face-to-face interaction which is rich in social cues, in video game play male players may be more inclined to act upon male gamer stereotypes when their gender identity is salient. With heightened gender identity, a male player may be less likely to view a female player as a woman with individuating characteristics but more like a prototypical member of the female gamer group. Despite the different features between communication channels, we found support for CIIM in the present study, however we are unsure whether the channel itself plays a role in the tested mechanism. It would be interesting to see empirical research examining the role of communication channels in the processes proposed by CIIM.

Based on the intersectionality perspective, female gamer identity includes traits from the female identity, the gamer identity, and the intersectional female gamer identity (Hancock, 2017; McCall, 2005). Additionally, intersectionality research has found that evaluation and behavioral intention toward people with an intersectional identity reflect their separate identities (e.g., female; gamer) and their intersectional identity (e.g., female gamers). Thus our results related to the interaction intention toward the actor with the female player profile could be in fact targeting one or more of the three components (i.e., female, gamer, female gamer) of the female gamer identity. Understanding the impact of different identity components of an intersectional identity

is important because each component may represent a specific aspect of the identity and further lead to differed cognitive and behavioral outcomes. Unfortunately, the current design does not allow us to differentiate the effects of these three identity components of a female gamer. To deepen our understanding of the female gamer category, we encourage researchers to design studies that parse out the effects of each identity component of this intersectional identity.

Despite the interesting findings, this study has limitations. *The Sims* and *Call of Duty* were used as example video games for both the Xbox profile manipulation and type of game manipulation. We made this choice because preferred type of video games is part of the overall stereotypes of gamers and female players (i.e., stereotypical gamers prefer competitive video games and stereotypical female players prefer casual video games). Additionally, among the large number of available video games today, the two selected example games can be easily recognized as a stereotypical game for gamers and a stereotypical game for female players. However, with this design we cannot exclude the possibility that male gamer participants may report stronger intention to play one type of game with the actor not only because of the recognized similarities between themselves and the actor, but also because of her interest in playing the same game. For example, a male gamer may report strong intention to play *Call of Duty* with the actor partially due to her experience in playing this game. Therefore, future research is encouraged to adopt experimental designs which parse out the effects between a woman's identity traits and her gaming experience on male gamers' interaction intention.

Additionally, our outcome variable is male video game players' intention to play video games with a woman, which reflects an interpersonal level of communication between people from different social groups. Based on the generalization perspective (Gaertner & Dovidio, 2000) from the CIIM, after recategorizing with the superordinate gamer group, male players'

(i.e., lower-level ingroup member) favoritism toward the actor (i.e., lower-level outgroup

member) are expected to be generalized to all women who play video games (i.e., all members of

the lower-level outgroup). However, EST primarily explains how people develop behavioral

intentions toward a specific target individual, with no explicit predictions about group-level

evaluations (Correll & Ridgeway, 2003). Thus, based on the domains of these two theories, it is

unclear whether male video game players' increased play intention toward the actor would

further spread to all women who play video games or only applying to this single woman. Future

studies should empirically test the individual- and group-level evaluative and behavioral

outcomes after boosting play intention between a male and a female gamer.

For the purpose of effective experimental induction, we created the profiles to be easily

recognizable as either a stereotypical gamer or a stereotypical female player. However, such

effort may have caused demand effects. We operationalized the experimental manipulation with

mock-ups of Xbox profiles to present the messages more realistically and to provide a clean test

of the theoretical predictions, but it is still possible that participants may have perceived the

mock-ups as unrealistic. Future studies are recommended to adapt manipulation check questions

with specific measures regarding credibility of the stimuli.

4.1 Conclusion

In conclusion, the present study demonstrated an increased play intention between a male

and a female video game player after the male player's exposure to an Xbox profile portraying

the woman with stereotypical gamer traits. However, this promising experimental result does not

align with the current video game culture. Today's female representation in the video game

content is still biased (Gestos et al., 2018) and female players still endure stereotypes such as

lack of competence in playing video games (Yao et al., 2018). With the present findings, we

hope to inspire more research to continue seeking ways to reduce gender discrimination among video game players. Additionally, gender equity among gamers is a long-term goal which requires effort from both academic researchers and influential members of the video game culture. We urge video game developers and members of the video game industry to develop more messages that promote a diversified image of female players. If there are enough recurring messages in video game culture that highlight female players' profile as competent gamers, it is hopeful that the misperception and mistreatment toward female gamers may be significantly reduced in the future.

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Appendix

An Example Stimulus

COD4Life3062

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I'm a woman and I play shooter games. My current favorite game is Call of Duty. I saved up for a Razer Turret keyboard, two Xbox Elite controllers, and a Victrix Pro gaming headset. Most girls play Pokémon Go, but I'm the real deal! I'm a serious gamer and I only play competitive games. My Call of Duty league plays three times a week.