



## Full length article

## “Girls can't play”: The effects of stereotype threat on females' gaming performance



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## ARTICLE INFO

## Article history:

Received 26 October 2015

Received in revised form

22 December 2015

Accepted 5 February 2016

Available online xxx

## Keywords:

Stereotype threat

Social identity theory

Multiple social identities

Gender

Digital games

Implicit attitudes

## ABSTRACT

The current study examined the impact of stereotype threat on female online gamers' performance and further examined whether manipulating the availability of multiple social identities effectively eliminated these performance decrements. Further, participants' implicit attitudes towards female online gamers were assessed. Eighty-one participants (60 female) were assigned to one of four experimental conditions: 1), stereotype threat, 2), multiple social identities, 3), female control, and 4), male control. They completed an Implicit Association Test and a gaming task. The number of coins collected in a 5-min time period provided a measure of gameplay performance. Results indicated that stereotype threatened females underperformed on the gaming task relative to males in the control condition. The intervention of multiple social identities successfully protected females' gameplay performance from stereotype threat. Additionally, differences were found between conditions in implicit attitudes pertaining to gender-gaming competence. This research highlights the harmful effects of negative stereotypes on females' gaming performance, and suggests that these decrements may be eliminated when females identify with an alternative positive social identity.

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## 1. Introduction

Online gamers are characterized typically as being male, socially inept and undesirable, resulting in them often perceived as being lower status than other social groups (Kowert, Festl, & Quandt, 2014; Kowert, Griffiths, & Oldmeadow, 2012; Kowert & Oldmeadow, 2012). Empirical research also indicates that online gamers are evaluated negatively in terms of their relative popularity, attractiveness and dominance (Kowert et al., 2012). Resultantly, online gaming has become an activity associated with a highly specific, caricatured and a somewhat stigmatized image (Kowert et al., 2014). Some research has attempted to deconstruct these negative conceptions and revealed key overlaps between stereotypical perceptions of online gamers with other social groups such as comic book enthusiasts, 'nerds' and students (Kowert & Oldmeadow, 2012). Consequently, individuals who engage in such activities are viewed as socially deficient in comparison to their peers, with these social repercussions ascribed especially to online gamers (Kowert & Oldmeadow, 2012).

Stereotypical attitudes towards women in gaming raise further concerns. When exploring previous research on character representation in digital games, there is a key distinction between male and female characters (Leonard, 2003; Thompson & Zerbino, 1995; Williams, Martins, Consalvo, & Ivory, 2009). For example, within a sample of games studied, Williams et al. (2009) found that 40% did not include any female characters. Furthermore, in games that did include female representation, these were in secondary roles with females portrayed in overly sexualized ways or as victims of aggression (Burgess, Dill, Stermer, Burgess, & Brown, 2011; Dietz, 1998; Dill & Thrill, 2007; Ivory, 2006; Leonard, 2003; Provenzo, 2000; Williams et al., 2009). Additionally other studies have demonstrated the impact of a female avatar's sexualized appearance on acceptance of rape myth and sexism (Fox & Bailenson, 2009). Evidence indicates further that females are often perceived as passive or dependent on men, and deemed less competent (Ivory, Fox, Waddell, & Ivory, 2014; Mou & Peng, 2008), which is further supported by research demonstrating how male game characters engage more frequently in leadership and achievement-based tasks compared to females (Thompson & Zerbino, 1995). Additionally, research which has examined voice-based communication in gameplay has revealed that multiplayer gamers make three times more negative comments towards a female voice

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compared to a male voice (Kuznekoff & Rose, 2012). These stereotypical representations, as well as general conceptions about internet and game cultures being highly masculinized (Kerr, 2003; Schumacher & Morohan, 2001) may threaten the perceptions which individuals hold towards female gamers, and consequently their behavior towards them (c.f., Cicchirillo, 2009; Dill & Burgess, 2012).

Other evidence points to the assertion that those who play games frequently are less critical of stereotypical content towards females than less frequent players (Brenick, Henning, Killen, O'Connor, & Collins, 2007). Interestingly, the observed "Proteus Effect" underpins a process whereby players' own behavior conforms stereotypically with those which are consistent with their avatar's appearance (Yee & Bailenson, 2007; Yee, Ducheneaut, Yao, & Nelson, 2011). These aforementioned trends, as well other findings showing general dislike of violent content and sexualized gender stereotypes among females (Hartmann & Klimmt, 2006; Yee, 2008), may provide some explanation for the observation that females are typically absent from gaming communities, and are often marginalized from accessing gaming technology, relative to their male counterparts (Crawford & Gosling, 2005; Horrell & Schott, 2000). This issue has been the focus within a range of studies. Specifically these have demonstrated consistent evidence of negative judgments and behaviors being attributed in instances of non-contingence to gender norms for both genders (Fox & Tang, 2014). The experiences of women within gaming has received due attention and highlighted numerous key issues for encouraging greater female participation both in gameplay and within the gaming industry itself (Kafia, Hetter, Denner, & Sun, 2008).

What is not known, however, is whether these adverse conceptions towards females may transpire into attitudinal and behavioral changes for female gamers. Indeed, it is conceivable that these negative conceptions may have an effect on females' perceptions of competence and actual game play performance. The term 'stereotype threat' (Steele & Aronson, 1995) refers to situations in which individuals' performance may be hindered by stereotype-salient cues. In their seminal experiments, they reasoned that knowledge of a prevalent cultural stereotype regarding African American's intellectual ability might interfere with these students' performance. Two decades of research has now demonstrated the pervasive effects that negative stereotypes exert on targeted individuals, across a range of tasks and diverse populations (c.f., Nguyen & Ryan, 2008). To date, however, no research has examined whether females' knowledge of the societal stereotypes pertaining to their participation in gaming has a deleterious effect on their gameplay performance. Further, it is unknown whether males hold implicit negative attitudes towards females in the domain of online gaming, and whether females themselves endorse such stereotypes. In line with evidence that suggests social judgments relating to competence often have stark intergroup differences (Fiske, Cuddy, Glick, & Xu, 2002; Fiske, Xu, Cuddy, & Glick, 1999; Morton, Rabinovich, & Postmes, 2012; Swim & Sanna, 1996), we examine both male and females' implicit attitudes towards gendered gameplay. Underpinned by stereotype threat theory, it is predicted that the salience of a negative gender-related stereotype may hamper females' gaming performance. Moreover, it is predicted that females who experience stereotype threat will reveal greater implicit attitudinal associations between female online gamers and incompetence relative to those who do not receive such threat. As well as examining the conceivable harmful impacts of such stereotypes on female players, both in respect of implicit attitudes and performance detriments, we also aimed to explore any potential "interventions" which may alleviate these expected effects. This would therefore provide a practical approach to these issues, which could subsequently

inform future game development initiatives.

### 1.1. Multiple social identities approach

Social identity theory (SIT; Tajfel, 1978, 1979; Tajfel & Turner, 1979) provides a theoretical framework in which to understand, and potentially reduce, the impact of stereotype threat on attitudes and behavior. SIT posits that individuals have two sources of identity; a personal identity which defines them as idiosyncratic individuals, and a social identity which ties them to membership in valued groups. Within this, a mergence of a personal self and the self as a product of valued social groups is established (Luhtanen & Crocker, 1992; Swann, Gómez, Seyle, Morales, & Huici, 2009). A strong sense of social group affiliation has been found to be associated with heightened self-esteem (Abrams & Hogg, 1988; Hogg & Abrams, 1990; Simsek, 2013) through a perception of value on being a part of an "in-group" (Ellemers, Haslam, Platow, & Knippenberg, 2003). Additionally, membership in groups has been found to contribute to self-concept, life satisfaction and psychological well-being (Crocker, Luhtanen, Blaine, & Broadnax, 1994; Isiklar, 2012; Kong, Zhao, & You, 2013; Simsek, 2013). Particularly in relation to female online gamers, the degree of social identity to a female gaming community or female in-group may contribute to friendships with other players (Kaye, 2014) and foster a positive self-concept and psychological wellbeing. However, this positive social identity may be threatened when female gamers perceive that they will be judged in comparison to their male counterparts.

Of interest to stereotype threat theory, therefore, is how people contend with a group membership that does not contribute to greater self-esteem (Rydell, Beilock, & McConnell, 2009). In such situations, social identity theorists postulate that individuals of stigmatized in-groups may disassociate with a group that does not heighten their self-esteem (Tajfel & Turner, 1986), and capitalize on "multiple social identities" (Rydell & Boucher, 2010; Rydell et al., 2009). Research has documented the malleable and fluid role of social identities, which are contextually dependent (Reicher, 2004). For example, individuals typically categorize themselves as in-group members of multiple social groups (Hugenberg & Bodenhausen, 2004; Macrae, Bodenhausen, & Milne, 1995). Furthermore, research suggests that when two applicable social identities are present, individuals will categorize themselves in line with the most positive identity (Mussweiler, Gabriel, & Bodenhausen, 2000). From this perspective, subjective disassociation from one social group and association with another can be utilized as a protective strategy to bolster self-esteem and avoid negative group conceptions (Hugenberg & Bodenhausen, 2004; Macrae et al., 1995; Rydell & Boucher, 2010). Transferring this body of research to the theory of stereotype threat, it is therefore conceivable that performance deficits may be eliminated when individuals categorize themselves in line with a non-stigmatized identity (Rydell et al., 2009; Shih, Pittinsky, & Ambady, 1999). For example, Rydell et al. (2009) found that females underperformed on a test of mathematical ability when they perceived the test to be diagnostic of gender-related ability. However, female participants solved significantly more math problems when they were concurrently primed with a positive (i.e., student) and negative (i.e., female) social identity in the ability domain. Thus, it seems that performance deficits may be eliminated when individuals are able to replace the performance implications garnered from a negative social identity with propositions made accessible from a positive social identity. Extending this line of research, an additional aim of the current study examines whether manipulating the availability of multiple social identities – attached to performance implications – can alleviate the effects of stereotype threat on females' gameplay performance.

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