



Full Length Article

Do casual gaming environments evoke stereotype threat? Examining the effects of explicit priming and avatar gender

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ABSTRACT

Despite relatively equal participation rates between females and males in casual gaming, females often report stigmatisation and prejudice towards their gaming competency within this sub-domain. Applying the theoretical framework of “stereotype threat”, this research examined the influence of explicit stereotype priming on females’ casual gameplay performance and related attitudes. It also investigated whether the gender of the game avatar heightens susceptibility to stereotype threat. One hundred and twenty females were allocated randomly to one of four experimental conditions in a 2 (Condition: Stereotype threat, Control) x 2 (Avatar gender: Feminine, Masculine) between-subjects design. They completed a short gaming task and measures of social identity, competence beliefs, gameplay self-efficacy and self-esteem. Findings indicate that priming explicitly a negative gender-related stereotype did not appear to have a significant detrimental impact on gameplay performance or gameplay-related attitudes. Additionally, gameplay performance was not affected significantly by manipulating the gender of the gaming avatar. These findings suggest that, although females appear to be knowledgeable about negative gender-gaming stereotypes, these might not impact performance. Moreover, females tend not to endorse these beliefs as a true reflection of their gaming ability, representing a positive finding in view of the prevailing negative attitudes they face in gaming domains.

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1. Introduction

Females often experience harassment and discrimination within digital gaming communities, and face negative stereotypes pertaining to their gaming competence compared to males (Kuznekoff & Rose, 2013; Jenson, Fisher, & de Castell, 2011). The recent “#GamerGate” debate served to illuminate the hostilities shown towards female players, with some disclosing that they received online harassment in the form of rape or death threats from male players (Chess & Shaw, 2015; Massanari, 2017; Wingfield, 2014). Empirical research has also shown that successful gaming performance is attributed to ability rather than luck for males more than females, and that lower-skilled males may exhibit hostility towards female players for fear of losing status in the gaming domain (Deaux & Emswiller, 1974; Kasumovic & Kuznekoff, 2015). As such, gaming is viewed predominantly as a masculine pursuit by both

genders (Lewis & Griffiths, 2011) and consequently females have reported being marginalised within gaming communities and have represented themselves as male (gender swapped) in an attempt to dispel gender-related gaming stereotypes (Hussain & Griffiths, 2008; Martey, Stromer, Banks, Wu, & Consalvo, 2014; Todd, 2012).

Much of the mainstream media and empirical literature focuses upon the negative experiences that females face in respect of “hardcore” forms of gaming, such as online multi-player games (Cote, 2017; Paaßen, Morgenroth, & Stratemeyer, 2017) and competitive and violent videogames (Vermeulen & Van Looy, 2016). Here, research suggests that exposure to gender stereotypical attitudes might influence females’ unequal participation in hardcore digital gaming (Cote, 2017; Shen, Ratan, Dora Cai, & Leavitt, 2016) and preclude them from the positive consequences of gameplay, such as increased access to Science, Technology, and Engineering (STEM; Lewis & Griffiths, 2011; Paaßen et al., 2017). Nevertheless, females have also reported experiencing negative gender-related stereotypes in the sub-domain of casual gaming, in which numbers of males and females are relatively equal (Casual Games Association, 2007; Krotoski, 2004; Paaßen et al., 2017). For

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example, many females report instances of sexism within casual forms of gaming because this leisurely form of gaming confirms the stereotype that “women aren't real gamers” (Nixon, 2014; Paaßen et al., 2017). Casual gaming therefore holds a stigmatised status in the gaming hierarchy (Sweedyk & Laet, 2005; Taylor, 2012), with assumed lower skill underpinning the prejudice held against female casual gamers (Paaßen, Morgenroth, & Stratemeyer, 2017).

Indeed, recent research has begun to explore the impact that negative gender-gaming stereotypes exert on females' gameplay performance and related self-perceptions (c.f., Kaye & Pennington, 2016), and has examined further whether the saliency of such stereotypes can be evoked within the gaming environment itself (e.g., leaderboards; Vermeulen, Castellar, Janssen, Calvi, & Van Looy, 2016). However, such research is very much in its infancy and additional work is needed to explore the influence of gender-related stereotypes in distinct sub-domains of gaming. Underpinned by the theoretical framework of “stereotype threat”, the current study investigates the effects that negative gender-related stereotypes have on females' casual gaming performance, competence beliefs, self-efficacy and self-esteem. It also explores whether manipulating the gender of an avatar within the gaming context (e.g., playing as a female relative to a male) may act as a subtle threat to bring about performance decrements and associated negative self-perceptions.

2. Literature review

Steele and Aronson (1995) coined the term ‘stereotype threat’ to refer to situations whereby individuals' performance may be hindered by stereotype-salient cues. Early studies in this area demonstrate that, after controlling for prior ability, females' mathematical performance is impacted adversely when a mathematics test is framed as diagnostic of gender differences (Spencer, Steele, & Quinn, 1999). Yet, such group-performance differences are eliminated when the same test is framed as a non-diagnostic indicator of ability (Spencer et al., 1999; Steele, 1997). Replicating this basic premise, research has identified performance decrements across a wide range of performance domains, including intelligence and academic tests (Aronson, Fried, & Good, 2002; Aronson et al., 1999; Spencer et al., 1999; Steele & Aronson, 1995), athletic tasks (Stone, Lynch, Sjomeling, & Darley, 1999), and memory tasks (Hess, Auman, Colcombe, Rahhal, 2003). Although the situational phenomenon of stereotype threat has been well documented over the past two decades (c.f., Pennington, Heim, Levy, & Larkin, 2016 for review), further research is required to explore these principles in the understudied domain of gaming. This is particularly pertinent given that digital gaming is stereotypically considered a “male” pursuit (Lewis & Griffiths, 2011) and gaming tasks themselves may afford stereotype threat effects that remain relatively unexplored.

The few initial studies that have investigated the impact of stereotype threat in the sub-domain of causal gaming have thus far presented somewhat contrasting findings. For example, Vermeulen et al. (2016) utilised leadership boards to manipulate implicitly negative stereotypes pertaining to females' gaming competence. Findings indicated that females' gaming performance was comparatively worse under stereotype threat priming conditions relative to a stereotype nullifying condition. Conversely, utilising a causal game and explicit priming techniques, Kaye and Pennington (2016) found that stereotype threat did not affect females' gaming performance. Highlighting an alternative, positive identity bolstered females' gaming performance compared to a control condition, however. One explanation for these disparate findings may be due to the varying game stimuli used across studies and the differences in stereotype priming techniques (e.g., explicit vs. subtle; Nguyen & Ryan, 2008). This raises the question of how

explicit and subtle priming techniques might evoke stereotype threat, such as explicitly priming negative gender stereotypes or manipulating the gameplay environment to make gendered features more salient. To develop these findings, we explored whether variations in game presentation result in differential performance outcomes under stereotype threat.

2.1. Game presentation as a subtle threat

Experimentally, there are many ways in which the presentation of a game can be manipulated to foster masculine versus feminine conditions to elicit experiences of stereotype threat. One obvious manipulation is that of avatar representation, with studies demonstrating the consequences that identity representations can have on many different outcomes. For example, research has studied the correspondence of avatar characteristics with players' own self-perceptions of their attributes (Bessière, Seay, & Kiesler, 2007) and has shown how avatar physicality influences game performance, as well as real-world attitudes and behaviours (Yee & Bailenson, 2006, 2007; Yee, Bailenson, & Ducheneaut, 2009). In this way, physical characteristics of avatars (e.g., attractiveness and height) have been found to affect the way in which individuals interact subsequently with people in the “real world”, in line with the “Proteus effect” (Yee & Bailenson, 2007). Additional research has demonstrated that females may select male game characters in an attempt to feel less vulnerable as a female gamer in a male-dominated world (Lewis & Griffiths, 2011). Such research suggests how avatars may serve a role in alleviating females' experiences of negative attitudes pertaining to their gender.

In respect of performance outcomes, previous research has found differences in females' performance following a gaming task utilising gendered avatar customisation (male versus female). Specifically, Ratan and Sah (2015) evoked stereotype threat by manipulating avatar embodiment, and found that females underperformed on a mathematical gaming task when operating as a female relative to a male avatar, possibly because they conformed to gender stereotypes regarding their mathematical ability. Highlighting a social comparison effect, females have also been found to underperform academically when leaderboards in educational games are presented as being more male compared to female-dominated (Christy & Fox, 2014). However, these performance decrements appear to be reversed when females play under a gendered-alias because this encourages them to conform to gender stereotypical behaviours in line with that avatar and lessen experiences of prejudice (Lee, Nass, & Bailenson, 2014; Ratan & Sah, 2015). As such, experiences of stereotype threat may be heightened or lessened dependent on subtle factors in the gaming environment. Building upon such work, the current study explored how performance implications associated with avatar gender may act as a subtle stereotype threat to evoke performance deficits.

2.2. The impact of stereotype threat on self-concept

A breath of research suggests that self-efficacy – an individual's capability to achieve a goal or an outcome – can be shaped by environmental cues to influence motivation and performance (Bandura, 1986, 2006; Schunk, 1984). Although largely understudied, the salience of negative gender-related stereotypes within digital gaming has been shown to affect females' self-concept attributions and competence beliefs associated with this domain (c.f., Lee et al., 2014; Vermeulen et al., 2016). In particular, experiences of stereotype threat have been found to reduce females' confidence and predict experiences of negative affect within casual digital gaming, particularly for those who highly identify with the domain (Vermeulen et al., 2016). Corresponding evidence also suggests that

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