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Stereotypes, Games and Your Bladedancer Self

Using avatar customization to reduce stereotype threat effects

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Abstract

While a number of programs have recently been developed to use videogames as a possible catalyst in promoting more interest in STEM fields, the negative perceptions which women must overcome in STEM fields also resonate in videogame culture. We attempt to replicate previous findings that stereotype threat can influence both in-game performance as well as gendered perceptions of STEM fields. This replication also observes the role various forms of identity, expressed in-game through the use of avatars, can have on moderating the effects of these threats.

Introduction

An initial study (Ratan et al, 2015) suggests that the stereotypes surrounding videogame use may negatively influence STEM perceptions and aspirations when female players are confronted with stereotype threat. The present study builds on these findings in an attempt to both replicate these original results while also examining the potential role of avatar customization in moderating these effects.

Stereotype Threat in Games and STEM

Steele & Aronson (1995) define stereotype threat as, “being at risk of confirming, as self-characteristic, a negative stereotype about one’s group” (p. 797). In the context of videogames, women are typically underrepresented, within both the industry and games (Jenson & de Castell, 2010). Women players are more likely to face hostile comments and are commonly perceived as less knowledgeable and skilled than their male counterparts (Fox & Tang, 2014). As Steele & Aronson (1995) point out, constant exposure to these stereotypes can not only lead to decreased performance within a given task but also may eventually result in a complete disassociation within videogames and related fields. This provides a likely explanation for the number of researchers who find that women are less likely to consider themselves “gamers” and self-report less time spent playing games than men (Crawford & Gosling, 2005)

Similar stereotypical views are also present within STEM fields. Women tend to view these fields as

predominantly male-oriented and report feeling stressed and worried about how they are perceived by others (Master, Cheryan & Meltzoff, 2015). Given that stereotype threat in one area can extend into related domains, those pursuing a connection between videogames and STEM must consider the possible negative influence of these associations as well.

Identity, Stereotype Threat, and Avatars

The negative implications of stereotype threat have led many researchers to look for ways to help overcome these issues. A common strategy revolves around priming the "multifaceted nature of identity" (Mussweiler, Gabriel & Bodenhausen, 2000). Stereotype threat incites negative associations about a particular group to which an individual belongs – for instance, associating with being "female" can lead to the fear of being seen as inept at math by others (Rydell, McConnell & Beilock, 2009). Adaptation across various self-identities can help individuals overcome threatening situations (Mussweiler, Gabriel & Bodenhausen, 2000), but potential mechanisms for helping people shift between specific identities are understudied.

We propose that avatars, i.e., mediated self-representations, may serve such a purpose. Avatar characteristics prime associations with identities in ways that influence the avatar users' self-perception and thus subsequent behavior (Yee & Bailenson, 2007). In the realm of stereotype threat, Lee & Nass (2012) found that individuals given a female avatar performed worse than those who used a male avatar in a competitive math task. Such effects are more likely when the user has customized the avatar (Ratan & Sah, 2015), likely because avatar customization increases the extent to which the avatar is perceived as relevant to the self (Ratan & Dawson, 2015).

Building on this idea, in the present research, we examine the potential that avatar customization can be used as a mechanism to reduce the harmful effects of stereotype threat.

- **Hypothesis 1:** The negative effects of stereotype threat induced in the gaming context will be manifested in A) gaming performance and B) gendered perceptions of STEM ability.
- **Hypothesis 2**: Compared to people who use an avatar that reflects actual-self characteristics, the negative effects of stereotype threat will be less severe for people who use A) an alter-ego avatar or B) an avatar that is designed to appear appropriate for the gaming context.

Method/Early Results

We are currently conducting a 2 (Stereotype threat/Non-stereotype threat) x 3 (Actual self/Alter-ego/ Game-appropriate avatar) experiment to test our expectations. The design builds on our previous research on this topic (Ratan, et al, 2015). Namely, after receiving the stereotype threat prompt (or not), participants are prompted to create an avatar to use in the game (*Destiny*) according to their experimental condition. Measures of gameplay ability, STEM-gender perception and other metrics are taken before and after the 20-minute game play.

Although data collection is still in progress, initial results (n=30) suggest participants in the stereotype threat condition appear to play faster (significant), get more kills (marginally significant), and report less self-efficacy (marginally significant). Further, participants who customized game-appropriate avatars

appear to die more frequently than those in the other two conditions (marginally significant). These findings suggest that the eventual analysis with the full dataset will provide insight into (though not necessarily confirm) our hypotheses.

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