Avatar-driven self-disclosure: The virtual me is the actual me

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ABSTRACT

Considering the importance of self-disclosure in building relationships and bonds, it is vital to investigate how self-disclosure is affected by avatars utilized in many online communities. In this study, we tested a research model that explores how perceived avatar-self similarity affects self-disclosure via different theoretical constructs such as self-awareness, self-presence, and identifiability. The research model was empirically tested with data from a web-based survey of 209 Second Life users. Results revealed that avatar similarity impacts self-disclosure but with varying effects, depending on how it is mediated by variables of identifiability, self-awareness and self-presence. Specifically, appearance similarity affects homophily, which heightens self-awareness. This results in increased feelings of self-presence, which positively affects self-disclosure. Homophily also has the effect of heightening perceptions of identifiability, which decreases self-disclosure. Implications and applications are discussed.

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1. Introduction

The avatar is a digital representation through which the user interacts with and relates to others in the virtual environment. Widely used in online games, virtual malls, online messaging and forums, the avatar has been found to affect users' perception and behavior. In online shopping, for example, avatar sales agents increase satisfaction with the retailer (Holzwarth, Janiszewski, & Neumann, 2006) and avatar appearance can influence their users' behavior (Yee, Bailenson, & Ducheneaut, 2009).

In domains of computer-aided design and engineering simulation, a general direction has been to build objects more realistically. Advancements in techniques of 3-D modeling, for instance, have resulted in avatars and objects of virtual environments that are true to life and open to a high degree of personalization. The freedom to customize one's avatar unveiled a range of possibilities for the individual to create a digital self that is representative of one's true self. However, research has indicated users prefer avatars that are similar to their own gender, type (i.e., anthropomorphic; Nowak & Rauh, 2009), as well as appearance (Messinger et al., 2008). The effect of self-similar avatars on users has also been demonstrated. Generally, users who created self-similar avatars experienced greater identification (Trepte & Reinecke, 2010), more intense game enjoyment (Downs & Sundar, 2011), heightened self-awareness (Vasalou, Joinson, & Pitt, 2007), and in violent games, greater aggression (Eastin, 2006; Williams, 2011). They also

experienced greater private self-awareness (Vasalou et al., 2007), which is the cognisance of the personal aspects of the self.

In this study, we focus on a relatively unexplored area: avatar-user similarity and its effect on self-disclosure. Self-disclosure is communication behavior that is crucial to relationship development and is of both theoretical and practical importance. Yet, despite its significant role in constructing the kind of relationships individuals have with each other (Greene, Derlega, & Mathews, 2006; Harvey & Omarzu, 1997), very little is known about the effect of avatar similarity on self-disclosure. This study is novel in exploring this important but under-researched area.

Specifically, we draw on self-awareness theory to explain when or how avatar use leads to increased or decreased self-disclosure. Examining the potentially complex mechanisms involved will enable us to test how avatars as a specialized artifact of user presence affect users using a theoretical lens. This study will explore how different mechanisms of avatar selection are associated with a user's self-disclosure behavior. We posit that avatar similarity should have a significant effect on self-disclosure, but the effects would vary depending on how it is mediated by other psychological variables. On the one hand, avatar similarity should increase feelings of identifiability (i.e., the state where one's identity is known to others), leading to *decreased* self-disclosure. On the other hand, avatar similarity is expected to heighten self-awareness and self-presence, which should, in turn, *positively* affect self-disclosure as people are likely to be attuned to private aspects of the self and personal moods and feelings.

In a practical sense, this study can also inform practitioners of possible modifications of avatars to achieve desired behaviors

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among users. Clarifying when or how the avatar has a positive or negative impact on self-disclosure would allow them to fully harness the advantages of avatars in various computer-mediated environments, such as e-businesses, in which voluntary self-disclosure from consumers is a key for success.

The study used a web-based survey administered to 209 users of Second Life, a virtual world that allows people to socialize, as well as create and trade virtual property. Second Life gives great freedom to users to create and customize avatars, making it ideal to explore avatar effects. Using structural equation modeling (SEM), we examined our model and tested research hypotheses.

2. Literature review and hypothesis development

2.1. Avatar and self-disclosure online

Though research on self-disclosure online is abundant, relatively little attention has been paid to the effect of avatar on self-disclosure. Most previous studies have focused on physical characteristics of avatars, such as avatar realism and physical attractiveness of avatars. For example, Bailenson, Yee, Merget, and Schroeder (2006) found that people self-disclose more in the presence of less realistic avatars because of lower co-presence (i.e., the sense that one is sharing the same space with other people), which gives individuals the perception that they are not talking to an actual person. As such, social anxiety and evaluation apprehension, which may occur in interpersonal encounters (Dubrovsky, Kiesler, & Sethna, 1991; McKenna, Green, & Gleason, 2002), are reduced and people self-disclose more. Users of attractive avatars are also more friendly and extroverted, and consequently self-disclose more (Yee & Bailenson, 2007).

As well, the purpose of the avatar may affect self-disclosure. Williams, Kennedy, and Moore (2011) observed that individuals using their avatars for role-play, in particular, prefer text rather than voice chat so that they can mask identity-based cues to effect a moratorium and suspension of disbelief. This helps to preserve the magic circle, a metaphorical barrier that separates real world and virtual, such that role-players can be more deeply immersed in the role-play without their true age, gender or personality getting in the way. Williams et al. noted that this lack of self-disclosure is necessary for role-players in order that they stay in character, even though it may be counter to relationship formation.

In this study, we focus on another central element of avatar—perceived avatar-self similarity—that has received relatively little attention from researchers. Users' perception of psychological or behavioral similarity can affect liking of one's avatar (Huston & Levinger, 1978) and influence user enjoyment (Trepte & Reinecke, 2010), suggesting that such perceptions can affect the virtual experience and are important aspects to consider.

2.2. Avatar similarity

People create many different selves online, often with new identities. They live out their multiple virtual lives through their avatars (e.g., as a vampire, a fleet commander or a shaman), just as they play different roles in real life. These virtual lives could vary in terms of appearances, behavior and values from one another, and even from one's real life, making it possible to evaluate the differences and similarities between them.

Previous studies have examined similarity in terms of personality (Strauss, Barrick, & Connerley, 2001), attitude, (Byrne, Griffitt, & Stefaniak, 1967), ideal self (Herbst, Gaertner, & Insko, 2003), as well as appearance (Crosby, Evans, & Cowles, 1990). Taking into consideration the malleability of avatars, not only in appearance but also personality, this study examined similarity as comprising

two distinct dimensions of physical similarity and homophily. This would allow us to tease out the different effects of both dimensions. Appearance similarity, therefore, is conceptualized as the degree of physical resemblance between an individual and the avatar, while homophily refers to the similarity in beliefs, values and attitudes.

Similarity can be construed as subjective (perceived) or objective (Rogers & Bhowmik, 1970). Perceived similarity refers to the degree to which a member of a dyad perceives the other as being similar in terms of attributes. Objective similarity, on the other hand, refers to the degree of observable similarities between the two (Rogers & Bhowmik, 1970). A number of studies found that perceived, rather than actual similarity has a stronger effect on behavior. Perceived personality homophily, for instance, is associated with greater friendship intensity than actual similarity in personality (Selfhout, Denissen, Branje, & Meeus, 2009). Similarly, higher subordinate performance evaluations by superiors are linked with perceived, rather than actual, similarity (Turban & Jones, 1988). Other research on avatars have, likewise, used perceived similarity (e.g., Fox & Bailenson, 2009; Vasalou & Joinson, 2009).

2.3. The effect of appearance similarity on homophily

We predict that perceived appearance similarity and homophily will have a significant association with each other. In other words, we posit that perceived appearance similarity makes users feel that their avatars have self-similar attitudes and behavioral patterns. People use information about the self to make inferences about other people as it may be the best information they can have about them (Dawes, 1989; Van Boven & Loewenstein, 2003). In the same manner that people are likely to generalize their opinions and positions to others (i.e., social projection; Krueger, 1998), individuals may also project their own dispositions onto their avatars, particularly if they are self-similar in appearance. If the avatar resembles the self, it is easy, and perhaps even natural, to assume that other traits or personality would be similar as well. Such a process is highly automatic (Krueger, 1998), i.e., it is unintentional, uncontrollable, occurs efficiently and outside of awareness (Bargh, 1994). Ames (2004a, 2004b) proposed the similarity contingency model, which predicts that when individuals perceive a high level of general similarity to others, they engage in high levels of projection. The self is seen as a basic template to understand another's unseen mental state. The sense of general similarity thus regulates the use of self representations, with similarity triggering social projection. This suggests that when people use a self-similar avatar, they would engage in high levels of projection. Boellstorff's ethnographic work supports this argument. He noted that "when residents ... created alts that did not sound or look 'like themselves', the implication was that the avatar in question was 'alternative' to their primary avatar as much as their actual-world self" (2008, p. 133). The following is therefore postulated

H1. Appearance similarity will be positively associated with homophily.

2.4. The impact of avatar similarity on self-disclosure via identifiability

Identifiability is the state where one's identity is known to others. When an avatar resembles the user, it can make the user feel identifiable. Researchers (e.g., Midha & Nandedkar, 2012) have shown that the higher the perceived similarity of a user with his or her avatar, the higher the identifiability of the user. Facial recognition depends on two regions—the first, consisting of the eyes, brows, nose and mouth, and the other, includes hair, ears and