

Antecedents of the Closeness of Human-Avatar Relationships in a Virtual World¹

Yi Zhao, City University of Hong Kong, China

Weiwan Wang, City University of Hong Kong, China

Yan Zhu, Tsinghua University, China

ABSTRACT

Virtual worlds (e.g., Second Life), where users interact and form relationships with other users' virtual identities represented by avatars (i.e., human-avatar relationships), are increasingly influential in today's businesses and society. Nevertheless, the sustainability and impact of virtual worlds depend largely on the closeness of human-avatar relationships. This study investigates the antecedents of the closeness of such relationships. The authors conceptualize human-avatar relationship closeness as composed of interaction frequency, activity diversity, and relational influence. They identify its antecedents (perceived needs fulfillment, relationship irreplaceableness, and resource investment) by extending Rusbult's investment model of interpersonal relationship commitment to the domain of human-computer interaction. The authors test the hypotheses through an online survey of Second Life users and find that (1) resource investment is positively associated with all three human-avatar relationship closeness dimensions; (2) needs fulfillment is positively associated with interaction frequency and relational influence; and (3) relationship irreplaceableness is positively associated with relational influence.

Keywords: Avatar, Human-Avatar Relationship, Human-Computer Interaction, Relationship Closeness, Second Life, Virtual World

INTRODUCTION

Virtual worlds (e.g., Second Life and HiPiHi), which are defined as computer-simulated digital social environments (Messinger *et al.*, 2009), have become increasingly popular and influential in today's businesses and in people's lives (Mennecke *et al.*, 2008; Wolfendale, 2007). In

such digital social environments, users interact and form relationships with other users' virtual "identities," which are represented by two- or three-dimensional (2D or 3D) avatars (For convenience, we call this kind of relationship formed between one user and another user's avatar as "human-avatar relationship." See Figure 1 for an example of a Second Life avatar) (Kim, 2007; Wolfendale, 2007). However, in the absence of *close* human-avatar relationships in

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Figure 1. Screen shot of avatars that are socializing in Second Life



a virtual world, people cannot fully enjoy the convenience of socialization enabled by avatars, cannot utilize avatars as an effective relationship marketing tool, and cannot obtain enough exposure to the virtual world. This indicates that there is limited impact of virtual worlds on users. Therefore, this research focuses on the *closeness* of human-avatar relationships in virtual worlds.

Previous research has investigated the attributions of interpersonal relationship closeness (Berscheid, Snyder, & Omoto, 1989; Rusbult, Olsen, Davis, & Hannon, 2001); however, the antecedents of the closeness of people's relationships with other users' avatars (as representations of virtual "others") remain unexplored. While people in the real world normally interact with other people's *real identities*, and

these interactions are subject to strong *social norms*, people in the virtual world interact with other users' *virtual identities* represented by avatars, and real world social norms such as politeness and honesty may no longer be salient (Wolfendale, 2007). In addition, the activities that people engage in with other users' avatars are not the same as those in the real world. For instance, when users have dinners with other users' avatars, it is not the delicious food but the interaction and engagement that they truly enjoy. Hence, it is unknown whether theories in the interpersonal domain still hold in the human-avatar relationship domain.

In virtual worlds, an avatar is the primary embodiment of a user's entire virtual identity and is an independent "social actor" in-world (Junglas, Johnson, Steel, Abraham, & Loughlin,

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