# Chapter 7
# Antecedents of the Closeness of Human–Avatar Relationships in a Virtual World

**Yi Zhao**
*City University of Hong Kong, China*

**Weiquan 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.*

## 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 influen- tial 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 con- venience, we call this kind of relationship formed

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



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 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, 2007). The use of avatars in a virtual world brings considerable influences and benefits to its end users, organizations, and the virtual world itself. For end users, avatars provide a user-friendly interface and a rich social context. As virtual worlds become increasingly sophisticated, many users are likely to become frustrated with complex interfaces (Alty, Knott, Anderson, & Smyth, 2000). The use of avatars can address this challenge as they enable end users to navigate easily and conveniently within a virtual world and to interact with the virtual identities of other users in a way similar to that of the real world (England & Gray, 1998). For instance, users could initiate a conversation with another user's avatar by moving their own avatars into the neighborhood of that avatar and greeting it, just as they do in the real world. Furthermore, avatars allow users to express verbal information and to convey many non-verbal cues such as gestures and postures, rendering a rich simulation of the real world.

For organizations, avatars engender a new way of doing business. In Web-based business-to-consumer (B2C) ecommerce, using avatars as sales advisors may provide stronger social support and more favorable shopping experiences to customers (Holzwarth, Janiszewski, & Neumann, 2006; Keeling, Mcgoldrick, & Beatty, 2007), ultimately increasing their purchase intentions

## Related Content

Clustering Schema Elements for Semantic Integration of Heterogeneous Data Sources
Huimin Zhaoand Sudha Ram (2004). *Journal of Database Management (pp. 89-106).*
www.irma-international.org/article/clustering-schema-elements-semantic-integration/3322

Implementing an Object-Oriented Deductive Database Using Temporal Reasoning
Nihan Kesimand Marek Sergot (1996). *Journal of Database Management (pp. 21-34).*
www.irma-international.org/article/implementing-object-oriented-deductive-database/51170

Service Composition and Interaction in a SOC Middleware Supporting Separation of Concerns
with Flows and Views
Dickson K.W. Chiu, Qing Li, Patrick C. K. Hung, Zhe Shan, S. C. Cheung, Yu Yangand Matthias Farwick
(2011). *Journal of Database Management (pp. 32-63).*
www.irma-international.org/article/service-composition-interaction-soc-middleware/52992

VRMiner: A Tool for Multimedia Database Mining with Virtual Reality
H. Azzag, F. Picarougne, C. Guinotand G. Venturini (2009). *Database Technologies: Concepts,
Methodologies, Tools, and Applications  (pp. 1151-1167).*
www.irma-international.org/chapter/vrminer-tool-multimedia-database-mining/7963

Data Clustering
Yanchang Zhao, Longbing Cao, Huaifeng Zhangand Chengqi Zhang (2009). *Handbook of Research on
Innovations in Database Technologies and Applications: Current and Future Trends  (pp. 562-572).*
www.irma-international.org/chapter/data-clustering/20741