



## Caught in the Web? Addictive behavior in cyberspace and the role of goal-orientation



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### ABSTRACT

New online 3-D virtual worlds are complex and differ significantly from each other. In this study we examine whether the type of virtual world is likely to make a difference on how addictive behavior develops and its subsequent outcomes. We examine the effect of goal-orientation on the degree to which cognitive absorption within the virtual world results in addiction and in the impact of addiction on continuance and purchasing intentions. Using surveys conducted in *World of Warcraft* (goal-oriented) and *Second Life* (experience-oriented) virtual worlds and analysis via ANOVA, we find that while cognitive absorption contributes to the development of addiction, which subsequently leads to increased continuance and spending intentions in goal-oriented virtual worlds, none of these relationships hold in the case of the experience-oriented world. Goal-oriented virtual worlds provide a problematic conduit for addictive behavior and marketing manipulation and the authors believe that they would benefit from further attention by policy-makers. Experience-oriented virtual worlds do not appear to provide the same dangers and would appear to be more healthy avenues for marketing-consumer engagement.

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### 1. Introduction

“The computer industry is the only industry this author can think of that refers to their customers as users – similar to illicit drug dealers who sell their wares to their own users. This brings up the question of whether society is becoming too dependent on the computer?” [1].

As Rudi Volti [2] has observed “[our] inability to understand technology and perceive its effects on our society and on ourselves is one of the greatest, if most subtle, problems of an age that has been so heavily influenced by technological change.” Although technology can represent a force for good,

it can also have deleterious implications for society. There has been considerable academic research and popular rhetoric surrounding the addictive properties of computer-mediated environments such as excessive computer and Internet usage [3–7], online gambling [8], and online video gameplay [9–11]. So-called ‘Internet addicts’ [12–20], with a ‘pathological’ use of the Internet, may constitute addiction or a dependency that is uncontrollable and can result in dysfunctional consequences (see, e.g. [6,9]).

In contrast, excessive usage and addiction to virtual worlds – massively multiplayer online role-playing games, such as *World of Warcraft*, *Runescape*, *Aion*, *Star Wars: The Old Republic*, *EverQuest*, and *EVE Online*, and social virtual worlds where participants create businesses and communities, such as *Second Life*, *IMVU*, *3-D Chat*, *Kaneva*, *Onverse*, *There*, *Twinty* and *Blue Mars* – have been largely neglected (perhaps owing to their relatively newness). While the manifestations and consequences of addiction to cyberspace are captured imaginatively in works of popular fiction – such as the novels

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of William Gibson (*Neuromancer*, 1984: [21]), and Jeff Noon (*Vurt*, 1993: [22]) – our understanding of what might cause user addiction to virtual worlds is limited. Put another way: “Why does cyberspace have to be so addictive” for some users? [23].

Our purpose in the present study is to examine addiction in virtual worlds. In order to explain how deep (and possibly addictive) engagement with information technology can manifest we draw on the concept of cognitive absorption (CA) proposed by Agarwal and Karahanna [24] to help explain IT adoption and usage, and examine the impact that virtual world addiction has on continuance and spending intentions. In order to advance our understanding of addiction in virtual worlds and communities, our analysis examines addiction against the backdrop of the nature of the task faced (or goal-orientation) in virtual environments. While some virtual worlds are driven by goal-oriented tasks (such as *World of Warcraft*, *EVE Online* and *Runescape*), others have greater experience qualities (such as *Second Life*, *Onverse* and *Blue Mars*). We propose that CA will have a greater impact on addiction in virtual world settings, but this relationship will be moderated by the extent to which a virtual environment is task-oriented, as this will provide greater focus and sustained challenge/interest to users. By comparing the results of two surveys ( $n = 662$ ) (one conducted in the experience-oriented virtual world *Second Life* ( $n = 360$ ), and a second conducted in the goal-oriented virtual world *World of Warcraft*, ( $n = 302$ )) we examine the following research questions:

- RQ1: What impact does CA have on addiction in goal- versus experience-oriented virtual worlds?  
 RQ2: What impact does addiction have on continuance intentions in goal- versus experience-oriented virtual worlds?  
 RQ3: What impact does addiction have on spending intentions in goal- versus experience-oriented virtual worlds?

This study is timely for a number of reasons. Scholarly research on Internet addiction is limited, while research on addiction in virtual world settings – despite their popularity – is practically non-existent [9]. An understanding of what facilitates individuals' addictive behaviors towards virtual worlds would have scholarly value but would also be of value to practitioners and public agencies with a policy setting agenda concerning consumer health and well-being. With the recent emergence and growth of social networking technologies – including the likes of *Facebook*, *Twitter*, *Google Plus*, *MySpace*, *YouTube*, *LinkedIn*, *Flickr*, *Bebo*, *DeviantArt*, *Hi5*, *Friendster*, *Tagged*, *Badoo*, *Xing*, *Orkut*, *Pinterest* and many more – a new set of channels for consumption has emerged. One such channel is that of the virtual world (e.g. *Second Life*), which is being recognized as potentially one of the more important channels for marketplace information [25,26], as testified by the large number of diverse key brands that have attempted to create a presence there, including Toyota, Reuters, Sony-Ericsson, Dell and the rock band Oasis. Little is known, however, concerning how these emergent channels differ from existing channels and the factors that might contribute towards addiction. Given that addiction can often be harmful to the individual, then if we view virtual worlds as the new marketing and consumption landscapes of the

future, it is imperative to assess the potentially deleterious effects of marketing interventions via these platforms.

The paper is organized as follows. In the next section, we provide a background to 3D virtual worlds. Next we consider addiction to computer-mediated environments and virtual worlds. We then outline the concept of cognitive absorption, and offer our hypotheses. The remainder of the study attempts to demonstrate empirically the extent to which goal-oriented virtual worlds are more likely to foster addiction than experience-oriented virtual worlds, and examine the outcomes of addiction to virtual world settings. The paper concludes with the implications of the study, including implications for public policy, and provides directions for future research.

## 2. Virtual worlds

### 2.1. Definition and scope

Billions of dollars have been invested in online and digital technologies by business in recent years [27], providing consumers new venues for interaction with businesses and other consumers [28,29]. As a consequence, in addition to the traditional ‘bricks-and-mortar’ stores, there are broadly six virtual/online means by which consumers can interact (cf. [30]) including:

- i. Virtual worlds, classified as either massively multiplayer online role-playing games (e.g. *World of Warcraft*, *Star Wars: The New Republic* and *Runescape*) or virtual economies where participants create businesses and communities (such as *Second Life*, *IMVU*, and *Twinty*).
- ii. Chat rooms (typically organized around special interests such as consumer and lifestyle issues);
- iii. Lists (or listservs) (theme-based email mailing lists);
- iv. Electronic bulletin boards (allowing participants to post group-relevant information);
- v. Web rings (related home pages where individuals can share information based on a single mailing list); and
- vi. Social networking tools (such as *MySpace*, *Facebook* and *YouTube*).

In comparison to physical and Web channels, virtual worlds are a relatively new concept and hence require explanation. Three-dimensional ‘virtual worlds’ (sometimes referred to as ‘experience worlds’) are increasingly becoming an important channel for companies to communicate with current and potential customers. These “fast-growing Internet-based simulated environments where users can not only interact with each other, but also with products and services provided by businesses and individuals” [31] provide a platform for interactivity that can positively influence product knowledge, attitudes towards brands, telepresence and purchase intention [32–35]. While the Web introduced a new highly interactive medium that altered the parameters of mass and personal communication [36,37], virtual worlds stand to make an equally important impact on our daily lives and shopping behavior. As Drew Stein, CEO of Infinite Vision Media (an interactive marketing agency that worked with Dell Island in the virtual world *Second Life*), notes: “as people get more familiar with 3D experiences, the flat Web page is going to seem like a thing of the past” (reported in [31]).

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