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“Virtual Worlds Research: Consumer Behavior in Virtual Worlds”

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Surveillance, Consumers, and Virtual Worlds

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This is a brief essay, we call "think-pieces", designed to stimulate a discussion on a particular topic. For this series of essays we propose the following question:

"Consumer behavior in virtual worlds, is it really any different to the real world, or is it simply a case of 'old wine in a new bottle'?"

Keywords: consumer behavior; data mining; surveillance

Surveillance, Consumers, and Virtual Worlds

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In the almost twenty-year-old article “Old Wine in New Bottles” (Friedman, 1991), Milton Friedman discussed the changing landscape of tools and practices in economics. Friedman described the transformation occurring in that body of practice because of mathematics, computers, collaboration, and even “data mining.” The end result was that the “efficiencies” of doing economics were improving, but the substance of the field had changed very little.

Many of the same tools and practices, particularly computation and collaboration, have been employed to produce *virtual worlds* (Bell, 2008). An emerging aspect of virtual worlds that deserves thought is the role of *surveillance* in the relationship between consumers and consumption in virtual worlds. A useful definition of this aspect is offered by Giddens (1987): surveillance is “the collection and organization of information that can be stored by agencies or collectivities and can be used to ‘monitor’ the activities of an administered population” (p. 174).

As opposed to the review of economics that Friedman offered, in which computation had made economists merely more effective but had had relatively little effect on the questions they studied, I argue that the substance of the relationship between consumers and consumption will likely be profoundly affected by surveillance and related capabilities in virtual worlds.

Consumer Surveillance & Malleable Environments

In an analysis of Giddens’s work, Webster (2006) portrays the use of surveillance tools to capture *transactional information*, information which “contributes towards an individuated portrait of that person’s spending habits, clothing and food tastes, even preferred shopping locations” (p. 225). Webster’s transactional information calls to mind the scene in the film *Minority Report* where an eye-scanning system is used to tailor advertising to the character of John Anderton. In the film, the content of the advertising is, at some level, constrained by the character’s embeddedness in the physical environment.

The digital malleability of a virtual environment, however, removes these constraints. In a virtual world, where it is not only possible but, perhaps, even advisable to capture, store, and analyze the entire information history of an avatar’s—the human agent’s in-world representative—activities, what are the implications for the kind of tailored advertising that might be based on such surveillance?

Another example from television further illustrates this phenomenon: a recent commercial’s appeal was based on the notion of being able to transform the viewer’s business as quickly and responsively as the changing business environment. Urban hipsters negotiated a hypothetical commercial space that was a chic café at lunchtime and then a trendy clothing store later that afternoon. As the advertisement ended, the space was already transmogrifying into yet another business opportunity.

The physical world does not yet support this type of rapid remaking, but virtual worlds afford environments where this type of change is not only possible, it’s probable. So, the

malleability of a virtual world can be combined in intriguing and unpredictable ways with individuated surveillance data to produce a virtual environment that is specific to an avatar's consumption history.

Schroeder's recent definition of virtual worlds (Schroeder, 2008) opens with an emphasis on the importance being able to experience the presence of others in a virtual environment. The aspects discussed above—individuated surveillance data and malleable environments—can be used to create a virtual world with the appearance of a shared space, implying a shared experience. In fact, the means (and motives?) exist to create virtual spaces where participants have significantly different experiences of that shared space.

Consider the lighting setting in Second Life. The ambient lighting, and the resultant view, of the simulation space is under the control of the individual. One avatar/human agent pair can experience a shared simulation space as night, while the other avatar/human agents can set their spaces to midday.

It is possible to envision a situation in which the participants in a simulation experience the world around them in ways that have been tailored by their consumer history and that affect their future consumption behavior. For example, what if a store owner's data-mining software were to indicate that, of all of the avatars currently in the store, one is the most likely to make a purchase? Will the store owner use that information to manipulate the price in a way that induces the likeliest avatar/human agent make the purchase? Now, imagine that this manipulation, the presumed lowering of the price, has taken place beyond the awareness of the other avatars in the store.

Consumer Comfort and Experience

Let me return to the example of the lighting settings in Second Life. If upon entering a simulation space in Second Life I find that it is nighttime, I reflexively change the setting to provide more light. As a consumer, I also have reflexive responses to which I give little thought. One cultivated response is that I drool every time Apple releases a new product. Presumably, such consumer responses could be valuable (to someone) in a virtual world. What will happen when my observations and interactions in a virtual environment are mediated by the activities of non-human agents?

Recently, an article about an artificial intelligence-based avatar in Second Life appeared in *USA Today* (Hill, 2008). Edd Hifeng, the avatar in question, is a creation of AI researcher Selmer Bringsjord. In earlier research, Bringsjord created the Psychometric Experimental Robotic Intelligence (PERI). An account of PERI's achievements appeared in *Rensselaer.mag* (2002); PERI has performed well on sections of the Wechsler Adult Intelligence Scale-Revised IQ exam. In the *USA Today* article, Bringsjord expresses the belief that Edd Hifeng's descendants—non-human agents—will carry out interactions with people. The article reports, "Operators of 'Second Life' don't seem concerned about synthetic agents lurking in their world."

AI-based avatars could be used to manipulate the prices of goods and services in a virtual environment. Consider the scenario in which a virtual mall is seeded with AI-based avatars consuming virtual goods (which can be tied to physical-world goods). If an avatar/human agent pair is embedded in such an environment, that avatar/human's past, physical-world experiences

could lead that avatar/human to believe that what he or she is seeing is an appropriate price to pay. And yet, in a virtual environment populated by AI-based avatars, such past experiences might be misleading or useless.

Conclusion

It is possible, therefore, to posit scenarios where the marriage of consumer surveillance and an emerging technology, such as AI-based avatars, has the ability to influence consumer behavior. In such scenarios, surveillance data can be used to produce comforting, encouraging, and individualized environments in order to manipulate behavior. If the consumer surveillance indicates that an avatar/human is more likely to purchase in a bustling environment, artificial agents can provide a tool with which such an environment can be created. In addition, an experience that appears familiar or shared, but is not, will mislead. Perhaps, too, an Edd Hifeng descendent will compliment and cajole a consumer into a purchase. As consumers move into virtual environments, we must contemplate the extent to which surveillance may be used to shape our experiences.

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