We report results of an experiment on prices and demand in a fantasy-based virtual world. A virtual world is a persistent, synthetic, online environment that can be accessed by many users at the same time. Because most virtual worlds are built around a fantasy theme, complete with magic, monsters, and treasure, there is considerable skepticism that human behavior in such environments is in any way “normal.” Our world, “Arden,” was designed to test whether players in a typical fantasy environment were economically “normal.” Specifically, we tested whether fantasy gamers conform to the law of demand, which states that increasing the price of a good, all else equal, will reduce the quantity demanded. We created two exactly equivalent worlds, and randomly assigned players to one or the other. The only difference in the two worlds was that the price of a single good, a health potion, was twice as high in the experimental world than in the control. We allowed players (N = 43) to enter and play the environment for a month. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Law of Demand; Petri Dish Approach; Virtual World

INTRODUCTION: VIRTUAL WORLDS AS PETRI DISHES

Since 1997, there has been a rapid increase in deployment and use of virtual worlds: online computer-generated environments that can be accessed by thousands or even millions of people at the same time (Castronova, 2005). Each user explores the virtual world using an avatar, a human
or human-like character that walks, talks, fights, and hugs, much as a real human does. While inhabiting her avatar, the user can chat with other people, play games, go on quests, or harvest virtual goods. The range of activities is determined by the designers and is typically vast since, unlike real-life people, an avatar can fly, turn into a fish, or become purple, just by changing the underlying computer code.

With this kind of design flexibility, there are many possible applications for a virtual world. While most are devoted to entertainment, some worlds are being used for serious purposes: to train first responders, teach business lessons, or treat minor mental disorders.

In this article, we consider a serious research application of virtual worlds: their use for controlled experiments. Several unique features argue for this kind of use. First, virtual worlds allow controlled experimentation at the level of an entire world. If desired, designers can fix the code so that two research environments are exactly the same, down to every leaf on every tree. Second, this technology allows truly vast research environments. If desired, a research team could create a world that covers hundreds of millions of square miles. Third, virtual worlds allow huge numbers of research subjects. Current commercial virtual worlds commonly have many millions of players. Fourth, virtual worlds allow a long time scale for research. Again, current commercial virtual worlds typically retain users for many years. One world, Ultima Online, has been in continuous existence since 1997. Finally, the people who engage with one another inside virtual worlds seem to constitute a genuine society. Casual observation reveals that, even at modest size, significant social relationships seem to develop. It appears, again to the casual observer, that friendships and reputations are forged and broken. Some individuals seem to acquire some kind of interpersonal or political power, while others are deemed “weak.” Information networks seem to be active. Perhaps most surprising, virtual worlds seem to develop internal markets, in which players trade virtual items with one another at what appear to be stable and robust prices.

More careful observation of virtual worlds tends to confirm these suspicions. In a recent study, Chesney, Chuah, and Hoffman (2007) conducted a series of classic experiments from experimental economics within the environment of Second Life. They found that, for the most part, the usual environment of a small-scale social science research lab can be replicated in a virtual environment. Almost all aspects of the usual experiment can be recreated virtually. The one exception to this finding was in the area of physical signals and cues, which of course are not transmitted by avatars (at least with current technology).

Results such as these raise the possibility that virtual experimental environments might be possible on an even greater scale. In an earlier paper, an effort was made to estimate the real-world productivity of characters in virtual worlds (Castronova, 2001). Real-world transactions of virtual currency for U.S. dollars yielded a shadow price for the virtual currency. This in turn was used to translate virtual values into real values. By this kind of accounting, it appears that the gross level of economic transactions in virtual worlds has already grown into the billions of U.S. dollars per annum (Castronova, 2007).

Similarly, anthropologists have said that they observe genuine cultural behavior in virtual worlds, as well as between them and the real world (Malaby, 2006); sociolo-
Auditory Experiences in Game Transfer Phenomena: An Empirical Self-Report Study
www.igi-global.com/chapter/auditory-experiences-in-game-transfer-phenomena/126119?camid=4v1a

The Play of Persuasion: Why “Serious” Isn't the Opposite of Fun by Nicholas Fortugno
www.igi-global.com/article/play-persuasion-serious-isn-opposite/3961?camid=4v1a