
**Experimental Research
in Financial Reporting:
From the Laboratory to
the Virtual World**

Experimental Research in Financial Reporting: From the Laboratory to the Virtual World

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Abstract

Virtual worlds can allow experimental researchers to create and examine settings with far more institutional complexity than is possible in a traditional laboratory setting. This document discusses how studies with greater complexity can complement more traditional experimental methods for those who are studying financial reporting; explores both the opportunities and challenges virtual worlds present to experimentalists; presents some examples of how to implement complex institutions; and discusses how the costs and benefits of the virtual-world laboratory vary across different experimental traditions.

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Introduction

“Everything should be made as simple as possible, but not simpler.” (*Commonly attributed to Albert Einstein*)

One of the greatest challenges faced by accounting researchers is the complexity of accounting institutions being studied. The financial reporting process involves managers, auditors, investors, information intermediaries, and standard-setters interacting in an environment governed by voluminous laws and regulations to describe increasingly sophisticated business arrangements and changing competitive pressures. Complexity presents particular challenges to experimental researchers, because one cannot easily generalize from laboratory outcomes to real-world outcomes whenever the laboratory lacks institutional features that are likely to modify behavior and results.

In this paper, we discuss the possibility of using virtual worlds as next-generation laboratories that can help experimental researchers implement features of complex institutions that would not be feasible in traditional laboratory settings. This new technology, originally developed for online computer games, lends itself very well to complex economic settings with large numbers of agents interacting through

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complex institutions for long periods of time. Thus, virtual worlds provide the opportunity to construct settings whose complexity approaches that of the institutions that accounting researchers wish to study. However, because the settings are virtual, researchers can use experimental methods to control and manipulate institutional features (such as accounting regulations) and environmental features (such as industry forces) to allow clear causal inferences with limited reliance on econometrics (Bainbridge, 2007).

In Section 2 of this paper, we elaborate on the role of experiments in accounting research, with particular attention to the fact that experiments in accounting focus on how individual decisions and aggregate outcomes affect — and are affected by — accounting institutions. We define institutions broadly, to include not only explicit structures like laws and regulations, but also common forms of commercial interaction (such as long-term contracts), standard practices (such as the issuance of management earnings forecasts), and sociological or psychological rules, norms and beliefs that are reflected in our social interactions (Scott, 2007). The key argument in this section is that accounting researchers can benefit from conducting more complex experiments in more complex institutions, in order to extend our understanding of accounting environments. While complexity is rarely the friend of the experimenter, it is necessary to address many questions of great interest to accounting regulators and practitioners.

In Section 3, we make the case that virtual worlds provide a natural solution for those who want to conduct experiments examining complex institutions. We begin by describing the key features of these worlds that are likely to be of use to experimenters. These features include an impressive array of tools for communication, information display, and recordkeeping, as well as large populations of diverse users that are easily accessed, trained and retained. Thus, researchers need only modify platforms and communities that have already been developed with tremendous financial investment by professional software companies.

In Section 4, we discuss the economies of two flagship examples of virtual worlds, World of Warcraft (briefly) and Second Life (more extensively). The key difference between these is that World of Warcraft,

a world designed for game-playing, imposes a great deal of structure on its economy, much like experimental economists do, by specifying the institutions players can use and assigning players a number of goals with predefined payouts. In contrast, Second Life merely provides a platform in which residents can define and pursue their own goals. Because so many complex economic institutions have arisen organically within its confines, Second Life demonstrates that virtual worlds are easily capable of supporting such institutions. For example, Second Life boasts financial markets that are quite vibrant, despite a complete lack of regulation.

In Section 5, we provide a taxonomy of the most important opportunities virtual worlds present to the experimentalist. Virtual worlds can support field experiments that require the cooperation of the world developer, as well as field experiments that can be conducted without the knowledge or approval of the world developer. However, the most important opportunity is to conduct experiments that introduce closed economies that are just as independent of the economies of the virtual world as traditional laboratory economies are of the real-world economy. We refer to studies using the last approach as ‘embedded experiments.’

Embedded experiments represent the least radical and most manageable deviation from traditional laboratory experimentation, so they are likely to be the first method experimentalists should consider. Because of this, we use Section 6 to describe some of the basic methods that researchers can use to implement the most important institutions for accounting research: property rights, contracting, production, and reporting. The key goal of these methods is to allow for complicated financial transactions to be executed and reported without requiring either participants or researchers to devote much time to implementing, administering, and enforcing them.

In Section 7, we discuss the challenges that embedded experiments present to researchers, including the difficulty of verifying participants’ identities and controlling their communication and access to outside information. These problems can be mitigated by using security protocols that make undesirable behavior difficult or impossible; by reducing the financial incentives to engage in undesirable behavior; and

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by designing experiments to be robust so that undesirable behavior does not interfere with the inferences that researchers wish to draw. In Section 8, we discuss how the costs and benefits of the virtual laboratory vary across research traditions. The benefits are highest, relative to the costs, in economics-based experiments, which are most likely to require complex institutions, many participants and sophisticated software tools to administer, while simultaneously being less susceptible to demand effects or a failure to control factors that would alter psychological reactions.

Section 9 offers concluding remarks.

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