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Procedia - Social and Behavioral Sciences 187 (2015) 113 – 117

Procedia
Social and Behavioral Sciences

PSIWORLD 2014

Experimental methods in economics and psychology: A comparison

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Abstract

This article compares the use of experiments as a research method in economics and psychology. We outline the most important differences between the two fields in terms of their use of experimental methods. The purpose of the article is two-fold. First, to provide an overview of areas where economic experiments differ from traditional psychological experiments. Second, to debate experimental economics in relation to experiments in other social sciences.

Peer-review under responsibility of the Scientific Committee of PSIWORLD 2014.

Keywords: Experiments; economics; psychology; convergence; divergence

1. Introduction

In 2002 the Nobel Prize in Economics was awarded to the psychologist Daniel Kahneman and the experimental economist Vernon Smith. This signaled that knowledge from psychological research and the use of experimental methods is accepted as 'mainstream' in the field of economics. Both experimental economics and experimental psychology are concerned with many of the same issues, e.g. negotiations, different types of decisions, choice situations, and social dilemmas. There are also similarities when it comes to methodological choices, e.g. careful planning and design of experimental and advanced techniques used in data analysis. But, there are also areas of divergence. This can be attributed to the fact that the two disciplines have different aims and interests. Not surprisingly, economists are concerned with economic theories while psychologists are concerned with psychological theories. This has implications for the choices which are made with respect to experimental designs, and the views on using incentives, deception, or how to recruit participants.

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Peer-review under responsibility of the Scientific Committee of PSIWORLD 2014.
doi:10.1016/j.sbspro.2015.03.022

This article compares the use of experiments as a research method in economics and psychology. We outline the most important differences between the two fields in terms of their use of experimental methods. The purpose of the article is two-fold. First, to provide an overview of areas where economic experiments differ from traditional psychological experiments. Second, to debate experimental economics in relation to experiments in other social sciences. It is the view of the authors that economists have been slow in terms of their take-up of insight and knowledge from other social sciences. Instead, economists have oriented themselves towards the natural sciences (McCloskey, 1985). Even though the cross-disciplinary researcher Herbert Simon won the Nobel Prize in Economics a long time ago, many years passed before his theories of bounded rationality and decision-making gained a strong foothold in mainstream economics.

Discussing convergence and divergence between economics and other social sciences can potentially create more possibilities for cross-disciplinary work. Traditionally, there has been little dialogue between economics and other social scientists. This may be because they do not speak the same 'language'. As pointed out by Ariely and Norton (2007: 336) "*(...) at their core, economics and psychology share a common and overriding desire to understand human nature, but communication between the two is still in its infancy.*" The possibility for more cooperation is now higher, as experimental methods and certain psychological theories have become a legitimate part of mainstream economics.

This is not the first article which discusses and comments on aspects of experimental economics (Davis & Holt, 1993; Hey, 1991; Kagel & Roth, 1995) or differences between economists' and psychologists' use of experimental methods (Ariely & Norton, 2007; Friedman, 1994). Still, we argue that the article contributes by providing a short overview of the main points of convergence and divergence. We have attempted to draw on previous contributions and viewpoints from both disciplines. Due to space limitations, we are unable to give a complete picture. Therefore, in certain areas our article may not do justice to the literature. This is particularly challenging since these experimental economics is a research area which is in rapid development.

The article is structured as follows: First we briefly discuss the notion of validity in experimental methods, and the importance of internal and external validity. Then we discuss six aspects of economic experiments, in light of criticism from psychologists and others. The article ends with a discussion of areas of convergence and divergence.

2. Validity issues in experimental methods

Experimental methods are known for scoring high on internal validity, which means that the researchers can be relatively certain that a demonstrated cause-and-effect relationship actually exists. In experimental economics internal validity is of utmost importance since economists aim to predict human behavior when faced with incentives. In general, economic theories are abstract and universal in nature, with the aim that they should be applicable across different situations and individuals. This makes contextual factors and the characteristics of the participants less important in economic experiments than in other types of experiments. In addition, economic theory is generally based on assumptions that actors are rational and capable of understanding the relationship between actions and payoffs. As a result, participants do not expect to be deceived. Any irrational behavior is interpreted as noise or biases. Instead, the experiments are repeated and market mechanisms are used to discipline behavior.

However, experimental methods are weak on external validity, meaning the extent to which the findings can be generalized to situations outside the setting where the experiment takes place. Experimental economists also make certain adjustments which they claim will alleviate the problems related to low external validity. For instance, there is strict control of context and incentives, and the use of disciplining market mechanisms and repetition. These are aspects of experimental methods which some argue enhance external validity (Loewenstein, 1999). However, many researchers in psychology will tend to disagree and claim that strict control of contextual factors reduces the external validity since it creates an artificial laboratory situation. Cognitive and learning psychologists will typically claim that real-life learning is situation-dependent. In the next part of the article these aspects are discussed in more depth.