

Experimental Economics ?

Introduction to ME's meeting of 28th of February 2004

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The aim of this brief presentation is to provide an introduction to Experimental Economics as a methodological tool to investigate economics phenomena. The concept of controlled environment is considered and some applications of Experimental Economics are illustrated. Some critical points are also considered in the perspective of a class debate.

1 Historical Background (Roth (1993))

Experimental Economics became an autonomous field of research after WWII in concomitance with the increasing interest in Microeconomic theory. The VonNeumann-Morgenstern's Expected Utility Theory gave a lot of opportunity to test behaviour through lotteries (Allais Paradox...). In 1952 the Conference of Santa Monica grounded Experimental Economics on more theoretical basis and gave to the discipline an autonomous methodological structure.

2 Theory and Empirics (Friedman-Sunder (1994), Ichino (2001))

The dialogue between theory and empirical work is the engine of scientific progress (i.e., Kuhn's shift in paradigm). Economics, and the other social sciences base their empirical investigation on natural events. Sometimes these might not be present or give confused signals (correlation or causation?). The task to address causality could be faced with two kinds of solutions: statistical and scientific. Experimental economics refers to the scientific solution while standard econometric techniques are statistical solutions. The problem of scientific solution is that when operating with human subjects, instead of atomic elements, some basic assumptions (homogeneity and invariance) are difficult to be fulfilled. In order to overcome this limits some methodological tools are needed.

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2.1 Data Classification

It is possible to classify data along two dimensions: How they are generated and Where they come from. We may respectively have Experimental and Happenstance Data and Laboratory and Field data. Different considerations in terms of validity depending on the nature of the data might be developed (Internal-External Validity). For what attains Laboratory Data the main debate on validity refers to external validity: Are laboratory data of any help for understanding real world situations? If yes, when and how?

2.2 Laboratory as a Controlled Environment

Experiments take place in a controlled economic environment. With economic environment we mean individual economic agents together with an institution through which agents interact. Agents are economic because they are real people following real rules and looking at real payoffs. The control is both on characteristics of the agents and on institutions. The subjects are characterized in the experimental context by their economically relevant characteristics. Some characteristics are controlled directly (see the role of induced value theory when we have idiosyncratic characteristics) and others must be controlled indirectly. In this last situation it is very important the concept of randomization.

2.3 Scientific Purposes of the Experiments

Purposes of the experiment might be sketched in the following way: Searching for facts, Speaking for theorists and “Speaking in the ears of Princes”. The first expression refers to the discovery of empirical regularities on which theory has little to say. The second is a highly debated point and refers to the broad concept of testing theories. The last purpose refers to the possibility of testing new institutions (auctions, markets, electoral system, ...) through experiments.

3 Some Series of Experiments (Kagel-Roth (1995))

Experimental Economics has developed mainly along these sets of experiments:

- Public Goods
 - Prisoner’s Dilemma and Freeriding
- Coordination
 - Games with multiple equilibria and the role of learning
- Bargaining Behavior

- "Inefficient" outcomes of bargaining (e.g., Ultimatum Game)
- Market Organization and Competitive Equilibrium
- Different form by which exchange might be regulated
- Auction markets and Disequilibrium Behaviour
- Test of game theoretic prescriptions
- Individual choice Behaviour
- Violations of rational expectations behaviour

Possible points to be discussed:

- . Why a survey is not an experiment? Why do we need experiments?
- . Is it important to test behavioral assumptions of economic theories? What do we mean with validity of a theory? Internal coherence or realistic assumptions?
- . Are laboratory findings valid also for real world? How can we reproduce specific contexts in the lab (intertemporal decisions, social environment, ...)? Is it to mimic reality a good procedure?
- . Do we need interdisciplinarity in designing experiments and interpreting outcomes? If yes, how much?

References

- Friedman-Sunder(1994), "Experimental Methods: A Primer for Economists", Cambridge University Press
- Ichino(2001), "The problem of Causality in the Analysis of Educational Choices and labour Market Outcomes" Lectures Notes <http://www.iue.it/Personal/Ichino/air10.pdf>
- Kagel-Roth(1995), "Handbook of Experimental Economics", Chapter 1, Princeton University Press,
- Roth(1993), "On the Early History of Experimental Economics" <http://www.economics.harvard.edu/aroath/history.html>