

ECO663 Experimental Economics

Instructor
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What is Experimental Economics?

- The use of experimental methods to answer economic questions in various areas of study.
- Individual Choice Behavior
- Public Goods Provision
- Market Design
- Coordination Problems
- Bargaining Experiments
- Auction
- Industrial Organization
- Asset Markets
- Experimental labor economics
- Experimental macroeconomics
- Learning
- Social Preference ... and counting.

3 major reasons of economic experiments

1. Experiments designed to test the predictions of well articulated formal economic theories and to observe unpredicted regularities, in a controlled environment.
2. Experiments studying the effects of variables about which existing theory may have little to say. Designed to isolate the cause of some observed regularity.
3. Analyze the effect of changes in the way some market is organized and formulate advice on questions of policy.

Paul Samuelson once said...

“Economists ... cannot perform the controlled experiments of chemists and biologists because they cannot easily control other important factors”

[Samuelson and Nordhaus,
Principles of Economics, 1985, p.8]

von Neumann and Morgenstern

Theory of Games and Economic Behavior (1944)

contributed to the birth of experimental economics

Sidney Siegel

- The most extensive experiment in 1950s
- A systematic investigation of bargaining behavior
- Attempt to combine economics and psychology.
- (Siegel and Fouraker, 1960)

Vernon Smith

- Nobel Prize Winner in 2002 (shared the prize with Daniel Kahneman)
- Properties of different market institutions and their effects on the convergence towards equilibrium (Smith, 1981)
- Smith meets Siegel in 1961 => development of methodologies of economic experimentations.

In summary

~ 1960s: quiet growth

1970s~

- Amos Tversky + Daniel Kahneman : Judgment and Decision (1974) Judgment under uncertainty: heuristics and biases, Science 185, 1124-30)
- Maurice Allais: Allais' Paradox, inconsistency with the expected utility model (1979)
- Charles Plott + Vernon Smith : experimental design

Lead to

- Smith and Plott: auctions and markets
- Lichtenstein and Slovic: preference reversals
- Plott et al. : public goods
- Güth: ultimatum game
- Alvin Roth et al. : bargaining

Areas

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Individual Decision Making /Choice Behavior

- Individuals as consumers, labors, investors...
- Prospect Theory (↔ Expected utility theory)

Anomalies	Heuristics
Loss Aversion	Availability Heuristics
Reference-Dependence	Anchoring and Adjustment
Endowment Effect	Representativeness
Status Quo Bias	
Sunk Cost Effect	
Framing	
Preference Reversals	

Questioning "Rational Decision Maker" assumptions

Perfect Knowledge of the problem

=> Decision maker (DM) has a clear picture of the problem set of alternatives.

Clear preferences

=> DM has a complete ordering over the entire set of alternatives.

Ability to optimize, Do not make mistakes

=> DM has all the skill (unlimited capacity) necessary to make whatever complicated calculations are needed to discover his optimal course of action.

Intertemporal Decision Making

- (Quasi) Hyperbolic Discounting
- Dual-Self Theory

Role of Non-cognitive skills

Self-control
 Delay of Gratification
 Persistence
 Grit...

An experiment with numbers and cake

Shiv & Fedorikhin (1999)

1. Memorize a two-digit number (Group A) or seven-digit number (Group B).
2. Walk to a table and choose between two desserts, chocolate cake and fruit salad.
3. Walk to another room and repeat the memorized number.



What do you think?

Which group was more likely to choose the chocolate cake?

- a) Group memorizing 2-digit number
- b) Group memorizing 7-digit number chose chocolate cake
- c) Both were equally likely



When the deliberative "self" is busy...

Group memorizing 2-digit number chose chocolate cake
41% of the time

Group memorizing 7-digit number chose chocolate cake
63% of the time



What is the connection between
 Economics and
 this experiment?

Public Goods Provision

- Are people selfish or cooperative in volunteering to contribute to public good production?
- Can markets provide optimal allocations of public goods? (air pollution, public health etc.)
- How well do current political institutions perform in the production and funding of public goods? (space exploration, national defense etc.)

- Do people behave differently when confronting public goods decisions than when making private goods decisions?
- Should the concepts such as altruism or fairness be incorporated in solving the organizational problems?
- Do people really “free-ride”?

Some Questions about Experimental Economics

- Economic Theory vs. Experiments
- Laboratory Experiment vs. Generalization

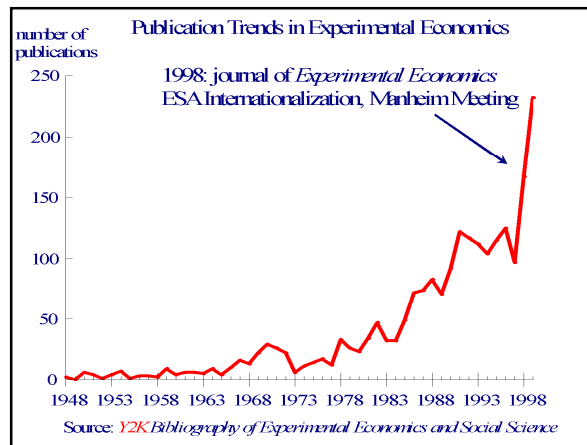
Other Resources

Journal

- Experimental Economics
- Journal of Economic Behavior and Organization

Web sites

- <http://web.stanford.edu/~alroth/alroth.html>
- <http://people.virginia.edu/~cah2k/y2k.htm>
- <http://www-ceel.economia.unitn.it/index.html>
- <http://www.iew.uzh.ch/ztree/index.php>



Neuroeconomics

- Attempt to explain human decision makings by using brain imagining.
- Interdisciplinary: neuroscience, experimental and behavioral economics
- <http://neuroeconomics.org/>

Neuroeconomics: How Neuroscience Can Inform Economics

COLIN CAMERER, GEORGE LOEWENSTEIN, and DRAZEN PRELEC*

Who knows what I want to do? Who knows what anyone wants to do? How can you be sure about something like that? Isn't it all a question of brain chemistry, signals going back and forth, electrical energy in the cortex? How do you know whether something is really what you want to do or just some kind of nerve impulse in the brain. Some minor little activity takes place somewhere in this unimportant place in one of the brain hemispheres and suddenly I want to go to Montana or I don't want to go to Montana. (*White Noise*, Don DeLillo)

- Why do people lose self-control more often when they are tired?
- Why do people lose self-control when their working memory is loaded?



Introduce yourself

- Who you are (hometown, education, hobby..)
- Area(s) of interests in Economics
- Area(s) of interests outside Economics
- Expectation of the class
- Request for the class