Experimental Economics
Slides 9

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John List

The father of field experiments

https://www.youtube.com/watch?v=FsGVTpygFPI

Outline for today

- Frequent objections against lab experiments
- Why conducting field experiments?

Field Experiments

- Field experiments occupy an important middle ground between laboratory experiments and naturally occurring field data.
- The underlying idea behind most field experiments is to make use of randomization in an environment that captures important characteristics of the real world.
- Experiments, in general, permit the researcher to create exogenous variation in the variables of interest, allowing us to establish causality rather than mere correlation.
- In relation to a laboratory experiment, a field experiment potentially gives up some of the control that a laboratory experimenter may have over her environment in exchange for increased realism.

Frequent objections against lab experiments

- External validity: Can we generalize inferences from the lab to the field? A.K.A Lab Experiments are unrealistic
- However:
  - the simplicity of (a model or) an experiment is often a virtue: enhances our understanding of the interaction of relevant variables.
    - Increases Internal validity: the ability to make causal inference (which is a matter of proper design, control for confounding effects, good analysis)
  - whether realism is important depends on the purpose of the experiment.
    - As most economic models leave out many aspects of reality, realism in an experiment is not crucial if the aim of the experiment is to test a theory or understanding the failure of a theory.
  - Lab experiments are real

    While laboratory processes are simple in comparison to naturally occurring processes, they are real processes in the sense that real people participate for real and make substantial profits and follow real rules in doing so. It is precisely because they are real that they are interesting

    Charles Plott (JEL 1982, p. 1482)

Objections continued

- Experiments are artificial
  - subject pool bias (students)
  - low stakes
  - small number of participants
  - inexperienced subjects

This is not a fundamental objection

- Use other subjects: managers (Cooper et al., AER 1999); soldiers (Fehr et al., JLE 1998)
- Increase the stake (Holt and Laury, AER 2002)
- Increase the number of participants: internet experiments, national sample through a TV device: Bellemare and Kröger 2003)
- Recruit experienced participants (Kagel and Levin, AER 1986)

Objections continued

- People's behavior in the lab can be quite different and unconnected to the behavior in the field
  - the entitlement to the money at stake may differ substantially
    - lab: subjects play with received money
    - field: money is earned.
  - "experimenter demand" effect (Hawthorne 1962): For example, subjects who are ungenerous in a field may start contributing in the lab:
    - they think that is what they are supposed to do
    - they want to please the experimenter
  - the laboratory context is artificial
    (+) the variables of interest can be isolated from many confounding factors (good for internal validity).
    (-) the laboratory lacks the rich, real-life context that may be important for behavior in the field
    Subjects who seem not to be generous in a situation without much context may behave more pro-socially in context rich situations.

Objections continued

- Importantly, all three differences between the lab and the field may not influence subjects' behavior identically, but rather subjects may vary in their reactions.
- This implies not only that the levels in the two settings may differ, but also that behavior in the lab and the field may not be correlated at all.

Motivation: External Validity

- Laboratory experiments are widely used to study economic and social behavior.
- However, an important question remains: do individuals behave in the laboratory as they do in real-world situations?
- Laboratory settings may differ from naturally occurring environments in several ways:
  - Artificial decision environments.
  - Awareness of being observed.
  - Experimenter demand effects.
  - Differences in incentives and context.
- These concerns raise questions about the external validity of laboratory experiments.

Field vs lab

Benz, M., & Meier, S. (2008). Do people behave in experiments as in the field? Evidence from donations. Experimental Economics, 11, 26881

- Do individuals exhibit similar levels of pro-social behavior in laboratory and field settings?
- Does an individual's behavior in a laboratory donation experiment predict their charitable giving outside the laboratory?
- Is laboratory behavior related to past field behavior, future field behavior, or both?
- Does this relationship persist when the laboratory and field donation decisions involve different beneficiaries?

Research Design: General Approach

- Benz and Meier (2008) study students at the University of Zurich.
- The authors combine two sources of data:
  - Donation decisions in classroom experiments.
  - Naturally occurring charitable donations recorded by the university.
- Students make real monetary decisions in both environments.
- Individual experimental decisions are matched with field donation records.
- The panel structure allows the authors to compare laboratory behavior with donations made before and after the experiment.

Field Setting: University Donations

- Each semester, University of Zurich students decide whether to contribute to two social funds.
- The funds support:
  - Students facing financial difficulties.
  - Foreign students studying in Zurich.
- Students can contribute to neither, one, or both funds.
- The contribution decision is voluntary and made anonymously during registration.
- The authors obtain administrative records covering four semesters, from 2004 to 2006.
- These records provide a measure of naturally occurring pro-social behavior.

Laboratory Implementation: Two Experiments

- Both experiments were conducted in regular university classes.
- Experiment 1: Social Funds
  - Conducted with 99 students.
  - Participants received CHF 12.
  - They allocated their endowment between themselves and the two university social funds.
  - Contributions could be made in increments of CHF 0.50.
- Experiment 2: Charities
  - Conducted with 83 students.
  - Participants received CHF 18.
  - They allocated money between themselves and two independent Swiss charities.
  - Contributions could be made in increments of CHF 2.

Identification and Empirical Strategy

- The main outcome in the laboratory is the amount donated in each experiment.
- Field behavior is measured using administrative donation records.
- The authors compare laboratory donations across individuals with different histories of charitable giving.
- They examine relationships with:
  - Donations in semesters before the experiment.
  - Donations in semesters after the experiment.
- Regression analysis controls for observable individual characteristics.
- The second experiment helps assess whether the relationship extends to donations involving different recipients.

Table 2 Donations in the experiment 'Social Funds'

Dependent variable: Individual Donation in the Experiment (in CHF)						
	(1)	(2)	(3)	(4)	(5)	(6)
Estimation model	OLS	Tobit	OLS	OLS	OLS	OLS
# of semesters used for field behavior	4	4	4	3	2	1
Panel 1: Field behavior before the experiment						
Average donation in the past	0.21**	0.48*	0.23**	0.21**	0.20**	0.15*
	(0.08)	(0.19)	(0.08)	(0.08)	(0.07)	(0.07)
Control variables	*yes*	*no*	*no*	*no*	*no*	*no*
# of Observations	99	99	99	99	99	99
F-Test/Chi^2-Test	2.11*	6.45*	8.36**	7.00*	2.45°	1.70
R^2	0.14	0.02	0.08	0.07	0.09	0.07
Panel 2: Field behavior after the experiment						
Average donation in the future	0.31**	0.70**	0.34**	0.33**	0.32**	0.30**
	(0.08)	(0.18)	(0.08)	(0.08)	(0.08)	(0.08)
Control variables	*yes*	*no*	*No*	*no*	*no*	*no*
# of Observations	97	97	97	97	97	97
F-Test/Chi^2-Test	2.05**	15.37**	18.16**	16.85**	14.97**	13.62**
R^2	0.19	0.04	0.16	0.15	0.14	0.13

Standard errors in parentheses. Significance levels: $^{**}p < 0.01$, $^{*}0.01 < p < 0.05$, $^{\circ}0.05 < p < 0.1$

Table 3 Donations in the experiment 'Charities'

Dependent variable: Individual Donation in the Experiment (in CHF)						
	(1)	(2)	(3)	(4)	(5)	(6)
Estimation model	OLS	Tobit	OLS	OLS	OLS	OLS
# of semesters used for field behavior	4	4	4	3	2	1
Panel 1: Field behavior before the experiment						
Average donation in the past	0.29°	0.45*	0.34*	0.27*	0.17	0.18
	(0.15)	(0.19)	(0.14)	(0.13)	(0.13)	(0.12)
Control variables	*yes*	*no*	*no*	*no*	*no*	*no*
# of Observations	83	83	83	83	83	83
F-Test/Chi^2-Test	2.39*	5.59*	6.23*	4.17*	1.71	2.07
R^2	0.18	0.02	0.07	0.05	0.02	0.03
Panel 2: Field behavior after the experiment						
Average donation in the future	0.30*	0.41*	0.31*	0.29*	0.28*	0.21
	(0.15)	(0.19)	(0.14)	(0.14)	(0.14)	(0.13)
Control variables	*yes*	*no*	*no*	*no*	*no*	*no*
# of Observations	82	82	82	82	82	82
F-Test/Chi^2-Test	2.65*	4.86*	5.28*	4.60*	4.39*	2.77°
R^2	0.20	0.01	0.06	0.05	0.05	0.03

Standard errors in parentheses. Significance levels: ** $p < 0.01$, *$0.01 < p < 0.05$, °$0.05 < p < 0.1$

Main Findings and External Validity

- Tables 2 and 3 show a positive relationship between laboratory donations and charitable giving in the field.
- The relationship is stronger when laboratory and field decisions involve the same beneficiaries (Table 2).
- The relationship remains positive, but is weaker, when laboratory donations involve different charities (Table 3).
- Laboratory behavior is correlated with both past and future field donations.
- However, individual behavior differs substantially between laboratory and field settings.
- Main conclusion: laboratory experiments provide useful information about pro-social preferences, but behavior is also sensitive to the decision context.

Conclusions: Implications for Experimental Economics

- Experimental measures of pro-social preferences can provide useful information about behavior in similar real-world situations.
- However, behavior is highly dependent on the specific decision context.
- Correlations in individual behavior across different situations are generally weak, both within and outside the laboratory.
- This challenges the idea of stable individual "types" with consistent pro-social preferences across settings.
- Rather than classifying individuals by their pro-social tendencies, research should investigate the conditions under which pro-social behavior emerges or disappears.

Why might there be differences?

- Many characteristics change when moving from the lab to natural settings
- Nature of the subject pool
- Information
- Task or trading rule used
- Nature of the commodity
- Stakes
- Location, Environment
- Time-frame

The idea behind field experiments

- Might highlight that certain results from lab experiments should be defined more narrowly than first believed or even might cause the initial insights from the lab or the field to be reinterpreted.
- After establishment of relationships in the lab, one seeks to understand more distant phenomena that have the same underlying structure.

General Remark

- Lab experiments have their limits and they are no substitute
  - for the analysis of field data
  - for the conduct and the analysis of field experiments
  - for survey data
- Ideal: a combination of all these empirical methods

A Field Experiment Bridge (Harrison and List, 2004)

- Conventional lab experiment (Lab): employs a standard subject pool of students, an abstract framing, and an imposed set of rules.
- Artefactual field experiment (AFE): same as a conventional lab experiment with a non-standard subject pool.
- Framed field experiment (FFE): Same as an artefactual field experiment but with field context in the commodity, task, information, stakes, time frame, etc.
- Natural field experiment (NFE): same as framed field experiment but where the environment is the one that the subjects naturally undertake these tasks, such that the subjects do not know that they are in an experiment.

Natural Field Experiments

- A experiment CONDUCTED in an existing economic institution so that
- subjects don't even know they are part of an experiment
- Problem: deception?

Other field experiments

- Other Field Experiments
- Policy Experiments (Social Experiments) – Evaluate Policy Effectiveness by randomizing between treatment and control group
- Natural Experiments: Simply observe naturally occurring controlled comparisons between treatments

Other “field” experiments

- Other “Field” Experiments
- Neuroeconomic Experiments are “real thought experiments”
- Neuronal activity are measured during their “natural reaction” to stimulus!
- Key: Monitor the natural mental process when the experimental treatment is administered