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WHAT CAN ECONOMISTS LEARN FROM EXPERIMENTS?  
AN INTRODUCTION TO EXPERIMENTAL AND BEHAVIOURAL ECONOMICS

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*“Taking a course in experimental economics is a little like going to dinner at a cannibal’s house. Sometimes you will be a diner, sometimes a part of dinner, sometimes both.”*  
From *Experiments with Economic Principles* by Bergstrom and Miller.

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CLASS MEETINGS: 2:00-4:30 pm Oct 24 (Tuesday)  
6:30-9:00 pm Oct. 25 (Wednesday)  
2:00-4:30 pm Oct 26 (Thursday)  
2:00-4:30 pm Oct 31 (Tuesday)  
6:30-9:00 pm Nov. 1 (Wednesday)  
2:00-4:30 pm Nov. 2 (Thursday)

OFFICE HOURS: TBA

### INTRODUCTION AND OBJECTIVES:

Experimental/Behavioural Economics is probably the fastest growing field in economics today. It is a field committed to the idea that economics, like all of the natural sciences, can be an experimental science using carefully controlled laboratory or field experiments. This course will introduce you to the methodology of experimental/behavioural research in economics. You will read some of the seminal experimental/behavioural economics papers and you will also be exposed to some currently active areas of research in experimental/behavioural economics. An effort will be made to concentrate on a series of experiments, in order to see how experiments build on one another and allow researchers with different theoretical dispositions to narrow the range of potential disagreement. The aim of this course is to provide you with a solid understanding of the experimental methodology. This course will look at what economic theory has to say about economic choices and strategic interactions and what people actually do when faced with strategic decisions. We will conduct a large number of in-class experiments in order to either identify systematic deviations or to confirm theoretical predictions. Beginning with the history and purposes of experimental economics, this course will cover the latest methods and survey existing experimental research.

Most importantly, this course will teach you how to set up an economic experiment and write about how economic experiments are useful in reshaping your economic thinking. Experimental work has been conducted in all fields of economics including Industrial Organization, Game Theory, Public Finance, Labor Economics, Trade, Development Economics and Macroeconomics. This course can therefore complement your other research interests.

### GRADING:

You are expected to do the readings for each week, participate in the classroom experiments, maybe present one discussion of a paper in class (depending on student numbers) and either write an essay or an exam (depending on student numbers).

**Presentations:** The format depends a little on the number of students taking the course. But the basic idea is that in order to familiarize you with presenting work in a “seminar-like” setting, you are asked to present one or two of the \*\*articles from the syllabus. You should prepare a short presentation of the paper (using overhead slides, precise length to be determined). The presentations will occur during class when we are discussing the topic of your choice. Please inform me of your choice of article(s) by Wednesday, October 25. The papers will be allocated on a first come, first serve basis.

**Essay/Exam:** Again, depending on the number of students and students’ interest I am open to pose an essay type question or an exam.

### BOOKS:

The course is based on journal articles. You will find a list of articles in the tentative course outline. I enjoy browsing through the books mentioned below. They mostly collect articles and give literature reviews.

- *The Handbook of Experimental Economics*, Kagel, John. H. and Alvin E. Roth (eds), Princeton University Press, 1995.
- *The Handbook of Experimental Economics. Volume 2*, Kagel, John. H. and Alvin E. Roth (eds), Princeton University Press, 2016.
- Douglas Davis and Charles Holt, *Experimental Economics*, Princeton University Press, 1993.
- Daniel Friedman and Shyam Sunder, *Experimental Methods: A Primer for Economists*, Cambridge University Press, 1994.
- Alvin E. Roth (1987), *Laboratory Experimentation in Economics: Six Points of View*, Cambridge, Cambridge University Press.
- Vernon L. Smith, *Papers in Experimental Economics*, Cambridge University Press, 1991.
- Richard H. Thaler, *The Winner’s Curse: Paradoxes and Anomalies of Economic Life*, Princeton University Press, 1994.

- Colin F. Camerer, *Behavioral Game Theory*, Princeton University Press, 2003.
- Daniel Friedman and Alessandra Cassar, *Economics Lab*, Routledge, 2004.
- Charles Holt, *Markets, Games, & Strategic Behavior*, Pearson–Addison Wesley, 2007.

## TENTATIVE COURSE OUTLINE

Here are a few topics I am planning to cover. Since this is an experimental course, I am also experimenting with the readings and topics.

# 1 Introduction and History

*One possible way of figuring out economic laws ... is by controlled experiments. ... Economists [unfortunately] ... cannot perform the controlled experiments of chemists or biologists because they cannot easily control other important factors. Like astronomers and meteorologists, they generally must be content largely to observe.*  
[Samuelson and Nordhaus, 1985, p. 8]

- Vernon Smith (1982), “Microeconomic Systems as an Experimental Science,” *American Economic Review*, **72**, 923–955.
- Alvin E. Roth (1994), “Let’s keep the Con out of Experimental Econ: A Methodological Note,” *Empirical Economics*, **19**, 279–289.  
(<http://kuznets.fas.harvard.edu/~aroth/methods.html>)
- Ken Binmore (1999), “Why Experiment in Economics?,” *Economic Journal*, **109**, F16–F24.
- Chapter 1, *The Handbook of Experimental Economics*.
- Chapter 1, *Markets, Games, & Strategic Behavior*.
- Chapter 2, *Economics Lab*.

# 2 Methodology

- Vernon Smith (1976), “Experimental Economics: Induced Value Theory,” *American Economic Review*, **66**, 274–279.
- Alvin E. Roth and M.W.K. Malouf (1979), “Game–Theoretic Models and the Role of Information in Bargaining,” *Psychological Review*, 574–594.

- J. Keith Murnighan and Alvin E. Roth (2004), “Some of the Ancient History of Experimental Economics and Social Psychology: Reminiscences and Analysis of a Fruitful Collaboration,” *Social Psychology and Economics*, D. De Cremer, M. Zeelenberg and J.K. Murnighan (eds), Lawrence Erlbaum Associates, Inc.: Mahwah, NJ, forthcoming.  
(<http://kuznets.fas.harvard.edu/~aroth/papers/A1%20Keith%20dialog.pdf>)
- Joyce E. Berg, John Dickhaut and John O’Brien (1986), “Controlling Preferences for Lotteries on Units of Experimental Exchange,” *Quarterly Journal of Economics*, 281–306.
- Charles Plott (1987), “Dimensions of Parallelism: Some Policy Applications of Experimental Methods,” in *Laboratory Experimentation in Economics: Six Points of View*, Alvin E. Roth (ed), Cambridge, Cambridge University Press.

### 3 Individual Decision Making

*“The problem seems to be that while economists have gotten increasingly sophisticated and clever,  
 consumers have remained decidedly human.  
 This leaves open the question of whose behavior we are trying to model.  
 Along these lines, at an NBER conference a couple of years ago I explained the difference  
 between my models and Robert Barro’s (a well-known rationalist)  
 by saying that he assumes the agent in his model are as smart as he is,  
 while I portray people as being as dumb as I am. Barro agreed with this assessment.”*  
*[Richard H. Thaler, *The Winner’s Curse*, pp.120–121.]*

- Chapter 4, *Markets, Games, & Strategic Behavior*.
- Grether, D. and C. Plott (1979), “Economic Theory of Choice and the Preference Reversal Phenomenon,” *American Economic Review*, 69, 623 – 638.
- Kahneman Daniel., Knetsch J. L. and Richard H. Thaler (1991), “The Endowment Effect, Loss Aversion, and Status Quo Bias,” *Journal of Economic Perspectives*, Vol. 5, No. 1, pp. 193–206.
- List, John (2003) “Does Market Experience Eliminate Market Anomalies,” *The Quarterly Journal of Economics*, 41–71.
- Tversky, Amos and Richard H. Thaler (1990) “Preference Reversals,” *Journal of Economic Perspectives*, Vol. 4, No. 2, 201–211.
- Thaler, Richard H. (1990) “Savings, Fungibility, and Mental Accounts,” *Journal of Economic Perspectives*, Vol. 4, No. 1, 193–205.
- Tversky, A. and D. Kahneman (1981), “The Framing of Decisions and the Psychology of Choice,” *Science*, 211, 453 – 458.

## 4 Social Preferences

“Shall I tell you what I’ve noticed: People are quite on the wrong track in offering less than they can afford to give; they ought to offer more, and work backward.”

Soames raised his eyebrows.

“Suppose the more is accepted?”

“That doesn’t matter a little bit,” said Mont; “it’s much more paying to abate a price than to increase it.

For instance, say we offer an author good terms - he naturally takes them.

Then we go into it, find we can’t publish at a decent profit and tell him so.

He’s got confidence in us because we’ve been generous to him, and he comes down like a lamb, and bears us no malice. But if we offer him poor terms at the start, he doesn’t take them, so we have to advance them to get him, and he thinks us damned screws into the bargain.”

[John Galsworthy, *The Forsyte Sage: To let* (London: Heinemann, 1921), pt. 3 chap.4]

### 4.1 Bargaining

- Werner Güth, Rolf Schmittberger and Bernd Schwarze (1982), “An experimental analysis of ultimatum bargaining,” *Journal of Economic Behavior & Organization*, **3**, 367–388 .
- \*\* Gary Bolton and Rami Zwick (1995) “Anonymity versus punishment in ultimatum bargaining,” *Games and Economic Behavior*, 1995, 48, 287–292.
- \*\* Elizabeth Hoffman, Kevin McCabe and Vernon Smith (1996), “Social Distance and Other-Regarding Behavior in Dictator Games,” *American Economic Review*, **86**, 653–660.
- Brit Grosskopf (2003), “Reinforcement and Directional Learning in the Ultimatum Game with Responder Competition,” *Experimental Economics*, **6**, 141–158.
- Richard H. Thaler (1988), “The Ultimatum Game,” *Journal of Economic Perspectives*, **2**, 195–206.
- Colin Camerer and Richard H. Thaler (1995), “Anomalies: Ultimatums, Dictators and Manners,” *Journal of Economic Perspectives*, **9**, 209–219.

### 4.2 Trust and Gift–Exchange

- Joyce Berg, John Dickhaut and Kevin McCabe (1995), “Trust, Reciprocity, and Social History,” *Games and Economic Behavior*, **10**, 122–142.
- \*\* Klaus Abbink, Bernd Irlenbusch and Elke Renner (2000), “The moonlighting game: An experimental study on reciprocity and retribution,” *Journal of Economic Behavior & Organization*, **42**, 265–277.
- Chaim Fershtman and Uri Gneezy (2001), “Discrimination in a Segmented Society: An Experimental Approach,” *Quarterly Journal of Economics*, 351–377.

- \*\* Jörn P. W. Scharlemann, Catherine C. Eckel, Alex Kacelnik and Rick K. Wilson (2001), “The value of a smile: Game theory with a human face,” *Journal of Economic Psychology*, **22**, 617–640.
- \*\* Catherine C. Eckel and Rick K. Wilson (2004), “Is trust a risky decision?,” *Journal of Economic Behavior & Organization*, **55**, 447–465.
- \*\* Iris Bohnet and Richard Zeckhauser (2004), “Trust, risk and betrayal,” *Journal of Economic Behavior & Organization*, **55**, 467–484.
- \*\* Ernst Fehr and Armin Falk (1999), “Wage Rigidity in a Competitive Incomplete Contract Market,” *Journal of Political Economy*, **107**, 106–134.

### 4.3 Public Goods

- Ernst Fehr and Simon Gächter (2000), “Cooperation and Punishment in Public Goods Experiments,” *American Economic Review*, **90**, 980–994.
- R. Mark Isaac, James M. Walker and Arlington W. Williams (1994), “Group Size and the Voluntary Provision of Public Goods: Experimental Evidence Utilizing Large Groups,” *Journal of Public Economics*, **54**, 1–36.
- \*\* James Andreoni (1995), “Cooperation in Public Goods Experiments: Kindness or Confusion?,” *American Economics Review*, **85**, 891–904.
- \*\* James Andreoni (1995), “Warm–Glow versus Cold–Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments,” *Quarterly Journal of Economics*, **110**, 1–21.
- Ernst Fehr and Simon Gächter (2000) “Fairness and Retaliation: The Economics of Reciprocity,” *Journal of Economic Perspectives*, 14(3), 159–181.
- Ernst Fehr and Simon Gächter (2002) “Altruistic Punishment in Humans,” *Nature*, 415, 137–140.
- Ernst Fehr and Urs Fischbacher (2003) “The Nature of Human Altruism,” *Nature*, 425, 785–791.
- Michalis Drouvelis and Brit Grosskopf (2016) “The Effects of Induced Emotions on Prosocial Behaviour,” with Michalis Drouvelis, *Journal of Public Economics*, Volume 134, pages 1–8.

## 4.4 Modeling

- \*\* Ernst Fehr and Klaus Schmidt (1999), “A Theory of Fairness, Competition, and Cooperation,” *Quarterly Journal of Economics*, **114**, 817–868.
- \*\* Gary Bolton and Axel Ockenfels (2000), “ERC: A Theory of Equity, Reciprocity, and Competition,” *American Economic Review*, **90**, 166–193.
- Gary Charness and Matthew Rabin (2002), “Understanding Social Preferences with Simple Tests,” *Quarterly Journal of Economics*, **117**, 817–869.
- \*\* Martin Dufwenberg and Georg Kirchsteiger (2004), “A Theory of Sequential Reciprocity,” *Games and Economic Behavior*, **47**, 268–298.
- \*\* Armin Falk and Urs Fischbacher (2006), “A Theory of Reciprocity,” *Games and Economic Behavior*, **54**, 293–315.

## 5 Incentives

### 5.1 Methodological Issues

- \*\* Glenn Harrison (1989), “Theory and Misbehavior of First-Price Auctions,” *American Economic Review*, **79**, 749–762.
- Colin Camerer and Robin Hogarth (1999), “The Effects of Financial Incentives in Experiments,” *Journal of Risk and Uncertainty*, **19**, 7–42.
- David V. Budescu (1999), “Commentary on The Effects of Financial Incentives in Experiments: A Review and Capital-Labor-Production Framework,” *Journal of Risk and Uncertainty*, **19**, 43–45.
- Ernst Fehr and Armin Falk (2002), “Psychological Foundations of Incentives,” Josef Schumpeter Lecture at the Annual Meeting of the European Economic Association 2001, *European Economic Review*, **46**, 687–724.
- Ernst Fehr, Simon Gächter and Georg Kirchsteiger (1997), “Reciprocity as a Contract Enforcement Device – Experimental Evidence,” *Econometrica*, **65**, 833–860.

### 5.2 Dysfunctional Effects of Incentives

- Uri Gneezy and Aldo Rustichini (2000), “A Fine is a Price,” *Journal of Legal Studies*, **29**, 1–17.

- Uri Gneezy and Aldo Rustichini (2000), “Pay enough or don’t pay at all,” *Quarterly Journal of Economics*, **115**, 791–810.
- Ernst Fehr and Bettina Rockenbach (2002), “Detrimental effects of sanctions on human altruism,” *Nature*, **422**, 137–140.

## 6 Gender Effects

“The cocks may crow, but it’s the hen that lays the egg.” Margaret Thatcher.

- \*\* Uri Gneezy, Muriel Niederle and Aldo Rustichini (2003), “Performance in competitive environments: Gender differences,” *Quarterly Journal of Economics*, 1049–1074.
- Uri Gneezy and Aldo Rustichini (2004), “Gender and competition at a young age,” *American Economic Review Papers and Proceedings*, 377–381.
- \*\* Jim Andreoni and Lise Vesterlund (2001), “Which is the Fair Sex? Gender Differences in Altruism,” *Quarterly Journal of Economics*, **116**, 293–312.
- Muriel Niederle and Lise Vesterlund (2005), “Do Women Shy Away from Competition?,” mimeo (<http://www.pitt.edu/~vester/WomenCompetition.pdf>).
- Iris Bohnet, and Greig, F. (2008), “Is There Reciprocity In A Reciprocal-exchange Economy? Evidence Of Gendered Norms From A Slum In Nairobi, Kenya,” *Economic Inquiry*, 46 (1), 77-83. Iris Bohnet, and Greig, F. (2009), “Exploring gendered behavior in the field with experiments: Why public goods are provided by women in a Nairobi slum,” *Journal of Economic Behavior and Organization*, 70 (1)
- Iris Bohnet (2006), “Why Women and Men trust Others?,” mimeo ([http://ksghome.harvard.edu/~ibohnet/GenderTrust\\_Jan13\\_06.pdf](http://ksghome.harvard.edu/~ibohnet/GenderTrust_Jan13_06.pdf)).
- \*\* Iris Bohnet, van Geen, A., and Bazerman, M. H. (2016). When Performance Trumps Gender Bias. Joint Versus Separate Evaluation. *Management Science* , 62 (5), 1225-1234

## 7 Strategic Behavior

Before we leave these portals • To meet our paramortals • There’s just one final message I would give to you.  
 We all have learned reliance • On the sacred teachings of science • So I hope through life you never will decline • In  
 spite of philistine defiance • To do what all good scientists do.  
 Experiment. • Make it your motto day and night.  
 Experiment. • And it will lead you to the light.  
 The apple from the top of the tree • Is never too high to achieve • So take an example from me.  
 Experiment.



*Be curious • Though interfering friends may frown.  
 Get furious, • At each attempt to hold you down.  
 If this advice you'll only employ • The future can offer you infinite joy • And merriment.  
 Experiment, • And you will see.  
 [Experiment, by Cole Porter]*

- Chapter 5, *Behavioral Game Theory*.
- Goeree, Jacob and Charles Holt (2001), “Ten Little Treasures of Game Theory and Ten Intuitive Contradictions,” *American Economic Review*, 91, 1402 – 1422.
- Rosemarie Nagel (1995), “Unraveling in Guessing Games: An Experimental Study,” *American Economic Review*, 85, 1313 – 1326.

## 8 Markets

*“I am still recovering from the shock of the experimental results.  
 The outcome was unbelievably consistent with competitive price theory.  
 ... But the result can't be believed, I thought. It must be an accident,  
 so I will take another class and do a new experiment with different supply and demand schedules.”  
 [Smith 1991, *Papers in Experimental Economics*, pp.155–156]*

- E.H. Chamberlin (1948), “An Experimental Imperfect Market,” *Journal of Political Economy*, 95–108.
- Vernon Smith (1962), “An Experimental Study of Competitive Market Behavior,” *Journal of Political Economy*, **70**, 111–137.
- \*\* Charles Plott and Shyam Sunder (1982), “Efficiency of Experimental Security Markets with Insider Information: An Application of Rational–Expectations Models,” *Journal of Political Economy*, **90**, 663–698.
- \*\* Robert Forsythe, Thomas Palfrey and Charles Plott (1984), “Futures Markets and Information Efficiency: A Laboratory Examination,” *Journal of Finance*, **39**, 955–981.
- D. Gode and Shyam Sunder (1993), “Allocative Efficiency of Markets with Zero–Intelligence Traders: Market as a Partial Substitute for Individual Rationality,” *Journal of Political Economy*, **101**, 119–137.
- \*\* Charles Plott (1996), “Rational Individual Behavior in Markets and Social Choice Processes: The Discovered Preference Hypothesis,” in *The Rational Foundations of Economic Behavior*, K. Arrow, E. Colombatto, M. Perlaman and C. Schmidt (eds) Macmillan and New York: St Martin’s Press, 225–250.

- John List (2003) “Does Market Experience Eliminate Market Anomalies,” *Quarterly Journal of Economics*, 41–71.

## 9 Other Fields

Here are a few papers that you might find interesting depending on your fields of specialization. We won't be “officially” discussing them in class unless there is serious demand, however, you can do your paper presentations on any of these if you like.

### 9.1 Industrial Organization

- Steffen Huck, Wieland Müller and Hans–Theo Normann (2001), “Stackelbergs beats Cournot: On Collusion and Efficiency in Experimental Markets,” *Economic Journal*, **111**, 749–766.
- Steffen Huck, Hans–Theo Normann and Jörg Oechssler (2004), “Two are few and four are many: Number effects in experimental oligopoly,” *Journal of Economic Behavior and Organization*, **53**, 435–446.
- Steffen Huck, Hans–Theo Normann and Jörg Oechssler (2002), “Stability of the Cournot Process: Experimental evidence,” *International Journal of Game Theory*, **31**, 123–136.
- Steffen Huck, Hans–Theo Normann and Jörg Oechssler (1999), “Learning in Cournot oligopoly: An experiment,” *Economic Journal*, **109**, C80–C95.
- Timothy Cason and Shakun Datta (2006), “An Experimental Study of Price Dispersion in an Optimal Search Model with Advertising,” *International Journal of Industrial Organization*, forthcoming.
- Timothy Cason and Dan Friedman (2003), “Buyer Search and Price Dispersion: A Laboratory Study,” *Journal of Economic Theory*, **112**, 232–260.

### 9.2 Labor Economics

- Armin Falk and Ernst Fehr (2003), “Why Labour Market Experiments,” *Labour Economics*, **10**, 399–406.
- Colin Camerer, Linda Babcock, George Loewenstein and Richard Thaler (1997), “Labor Supply of New York City Cabdrivers: One Day at a Time,” *Quarterly Journal of Economics*, 407–441.
- Armin Falk and Ernst Fehr (1999), “Wage Rigidity in a Competitive Incomplete Contract Market,” *Journal of Political Economy*, **10**, 106–134.

- Erst Fehr, Erich Kirchler, Andreas Weichbold, Simon Gächter (1998), “When Social Norms Overpower Competition: Gift Exchange in Experimental Labor Markets,” *Journal of Labor Economics*, **16**, 324–351.

### 9.3 Finance

- Uri Gneezy, Arie Kapteyn and Jan Potters (2003), “Evaluation periods and asset prices in a market experiment,” *Journal of Finance*, **LVIII**, 821–837.
- Shlomo Benartzi and Richard H. Thaler (1995), “Myopic Loss Aversion and the Equity Premium Puzzle,” *Quarterly Journal of Economics*, **110**, 73–92.
- Michael Haigh and John List (2005), “Do Professional Traders Exhibit Myopic Loss Aversion? An Experimental Analysis,” *Journal of Finance*, **LX**, 523–534.
- Peter Bossaerts, Charles Plott and William R. Zame (2004), “Prices and Portfolio Choices in Financial Markets: Theory and Experimental Evidence,” CalTech Working Paper.
- Peter Bossaerts and Charles Plott (2004), “Basic Principles of Asset Pricing Theory: Evidence from Large-Scale Experimental Financial Markets,” *Review of Finance*, **8**, 135–169.
- Peter Bossaerts (2001), “Experiments With Financial Markets: Implications For Asset Pricing Theory,” *The American Economist*. Reprint in *Shifting Paradigms, New Directions in Economics*, Cambridge, UK: Cambridge University Press (2004).

### 9.4 Development Economics

- Tomomi Tanaka, Colin Camerer and Quang Nguyen (2010), “Risk and time preferences: linking experimental and household survey data from Vietnam,” *The American Economic Review* 100 (1), 557-571
- C. Mónica Capra, Tomomi Tanaka, Colin F. Camerer, Lauren Munyan, Veronica Sovero and Charles Noussair, “The impact of simple institutions in experimental economies with poverty traps”, mimeo. (<http://www.its.caltech.edu/~ttanaka/SSRN-growth.pdf>)
- Christopher Bryan, Julian Jamison and Nina Ma “Overcoming Behavioral Obstacles to Escaping Poverty,” *Behavioral Science & Policy*, 3:1 (2017), 81-92.
- Chris Blattman, Julian Jamison and Margaret Sheridan (2017), “Reducing Crime and Violence: Experimental Evidence on Adult Noncognitive Investments in Liberia,” *American Economic Review*, 107:4, 1165–1206.

## 9.5 Trade

- Charles N. Noussair, Charles R. Plott and Raymond G. Riezman (1995). “An Experimental Investigation of the Patterns of International Trade,” *American Economic Review*, **85**, 462–91.
- Charles N. Noussair, Charles R. Plott and Raymond G. Riezman (1997), “The Principles of Exchange Rate Determination in an International Finance Experiment,” *Journal of Political Economy*, **105**, 822–861.
- Michael J. Hiscox (2004), “Through a Glass and Darkly: Attitudes Toward International Trade and the Curious Effects of Issue Framing,” mimeo.  
(<http://www.princeton.edu/~smeunier/HiscoxGlassDarkly.pdf>)