



# Experimental Economics in the Lab and the Field

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## Contents and Goals:

In this short lecture series we will look at some recent exciting developments in experimental economics. One such development is the increasing use of “field experiments”, where the researcher conducts his or her experiments not in a research laboratory, using convenience sample of undergraduate students as subjects, but “in the field” with non-student subject pools as participants. This is an important development, because it allows us to learn about how robust and general the lab findings are. Of course, lab experiments are here to stay but field experiments will increasingly complement lab experiments.

In this lectures I will concentrate on five topics from my area of expertise. My intention is to give you an introduction to the topic, present some classic experiments and then talk about some very recent studies both from the field and the lab. This should give you an impression about current (and open) research questions. Each topic will be discussed in one lecture. They are as follows:

1. **Social interaction effects and the methodology of experimental economics.** Here I will give a short introduction to experimental economics and will specifically talk about the role of lab and field experiments. I will illustrate the role of lab and field experiments with two studies – one from the lab, and one from the field – that investigate “social interaction effects”, i.e., the tendency that people behave as others in their respective social group.
2. **Loss Aversion.** Loss aversion is an important behavioural phenomenon, which implies that people are more unhappy about losses than they like equally-sized gains: “Losses loom larger than gains”. After describing some classic experiments I will discuss a field

experiment whose main goal was to develop individual-level measures of loss aversion. I will then illustrate a field experiment that links loss aversion and labour supply.

3. **Incentive contracts.** Incentives are a cornerstone in the economic sciences. The behavioural analysis of incentive contracts (pay for performance) is a current hot topic, because it allows us to learn about the psychological foundations of incentives. I will discuss some lab and field experiments that show that incentives can have hidden costs, lead to non-linear effects and can “crowd out” intrinsic motivations and voluntary cooperation.
4. **Cooperation.** Many economic activities require people’s voluntary cooperation to achieve efficient outcomes. Yet, cooperation is always jeopardized by free rider incentives. Here we will discuss some recent lab and field evidence (i) that people differ in their cooperative attitudes, (ii) that punishment can mitigate the free rider problem because many people apparently are prepared to punish free riders (iii) that emotions play an important role in people’s punishment behaviour (iv) that there are important cross-societal differences and that (iv) cooperative preferences can explain workplace productivity.
5. **(Testing theories of) social preferences.** An exciting development in the last five to seven years has been the development of “theories of social preferences”. We will discuss some classic experiments that have led to this development and complement these classic experiments with the results from very recent field experiments. We will then discuss the most important theoretical models and how they can be tested.

## **Topics and Readings:**

For each topic, I indicate “Readings”, which are papers or book chapters that I will cover in class in some depth. I also attach a highly selective list of papers that are “recommended readings”. Some of these papers I will mention in the lectures. The emphasis is on very recent working papers and some classic papers. For those who want to dig deeper, these references provide entry points into the literature.

### **1. Social interaction effects and the methodology of experimental economics**

- The methodology of experimental economics
- Lab and field experiments
- An example: Social interaction effects in the lab and the field

### Readings:

Friedman, Daniel and Alessandra Cassar (2004): *Economics Lab. An Intensive Course in Experimental Economics*. London and New York: Routledge; 12-38.

Falk, Armin and Andrea Ichino (2003): Clean Evidence on Peer Pressure. IZA Discussion Paper No. 732, Available at <ftp://ftp.iza.org/dps/dp732.pdf>.

Falk, Armin, Urs Fischbacher, and Simon Gächter (2004): Living in Two Neighbourhoods: Social Interactions in the Lab. IZA Discussion Paper No. 1381, Available at <ftp://ftp.iza.org/dps/dp1381.pdf>.

### Recommended:

Binmore, Ken (1999). Why experiments in economics? *Economic Journal* 109, 16-24.

Camerer, Colin and Robin Hogarth (1999). The Effects of Financial Incentives in Experiments: A Review and Capital-Labor-Production Framework, *Journal of Risk and Uncertainty* 19(1-3), pp. 7-42.

Carpenter, Jeffrey P., Glenn W. Harrison & John A. List (eds.) (2004): *Field Experiments in Economics* (Greenwich, CT: JAI Press, Research in Experimental Economics, Volume 10).

Carpenter, Jeffrey (2002). Measuring social capital: adding field experimental methods to the analytical toolbox. In: Jonathan Isham, Thomas Kelly and Sunder Ramaswamy (eds.): *Social capital and economic development: well-being in developing countries*. Cheltenham: Edward Elgar. Available at:

[http://community.middlebury.edu/~jcarpent/papers/MSc%20\(printed%20version\).pdf](http://community.middlebury.edu/~jcarpent/papers/MSc%20(printed%20version).pdf)

Fehr, Ernst, and Armin Falk (2003). Why labor market experiments? *Labor Economics* 10, 399-406.

Friedman, Dan and Shyam Sunder (1994): *Experimental Methods. A Primer for Economists*. Princeton University Press.

Harrison, Glenn W. and John A. List (forthcoming): What Constitutes a Field Experiment in Economics? *Journal of Economic Literature*. Available at: <http://dmsweb.moore.sc.edu/glenn/wp/What%20Constitutes%20a%20Field%20Experiment%20in%20Economics.pdf>

Hertwig, Ralph and Andreas Ortmann (2001): Experimental Practices in Economics: A Challenge for Psychologists? *Behavioral and Brain Sciences* 24, 383-451.

Loewenstein, George (1999). Experimental economics from the vantage-point of behavioral economics. *Economic Journal* 109, 25-34.

Manski, Charles (1999). *Identification problems in the social sciences*. Boston: Harvard University Press.

Roth, Alvin (2002): The economist as engineer: Game theory, experiments and computation as tools for design economics. *Econometrica* 70(4), 1341-1378.

Schram, Arthur (2003): Artificiality: The Tension Between Internal and External Validity in Economic Experiments. Discussion note presented at the workshop "The Role of Experimental Methods in Economics", Nottingham, September 12-14, 2003. Available at: <http://www.nottingham.ac.uk/~lezcs/workshop/Schram.pdf>

Smith, Vernon (1976): Experimental Economics: Induced Value Theory. *American Economic Review* 66, pp. 274-279.

Smith, Vernon (1982): Microeconomic Systems as an Experimental Science, *American Economic Review* 72(5), pp. 923-955.

Smith, Vernon (1994): Economics in the Laboratory, *Journal of Economic Perspectives* 8(1), 113-131.

Smith, Vernon (2002): Method in Experiment: Rhetoric and Reality, *Experimental Economics* 5, 91-110.

Soberg, Mørten (2002): The Duhem-Quine Thesis and Experimental Economics: A Reinterpretation. Discussion Paper 329, Statistics Norway Research Department Available at: <http://www.ssb.no/publikasjoner/DP/pdf/dp-329-aug02.pdf>

Starmer, Chris (1999). Experiments in economics: should we trust the dismal scientists in white coats? *Journal of Economic Methodology* 6(1), pp. 1-30.

## 2. Loss aversion

- Endowment Effect
- Measuring loss aversion
- Loss Aversion and Labour Supply
- Risk Aversion

### Readings:

Gächter, Simon, Andreas Herrmann & Eric J. Johnson (2004): Measuring individual-level loss aversion using simple experiments. Mimeo, will be supplied later.

Goette, Lorenz, David Huffman & Ernst Fehr (2004): Loss Aversion and Labor Supply. *The Journal of the European Economic Association* 2(2-3), 216-228.

List, John A. (2004). Neoclassical theory versus prospect theory: evidence from the marketplace. *Econometrica* 72(2), 615-625.

### Recommended:

Bateman, Ian, Alistair Munro, Bruce Rhodes, Chris Starmer & Robert Sugden (1997): A test of the theory of reference-dependent preferences. *Quarterly Journal of Economics* 112(2), 479-505.

Bateman, Ian, Daniel Kahneman, Alistair Munro, Chris Starmer & Robert Sugden (2003): Is there loss aversion in buying? An adversarial collaboration. CSERGE Working Paper EDM 03-07. Available at: [http://www.uea.ac.uk/env/cserge/pub/wp/edm/edm\\_2003\\_07.pdf](http://www.uea.ac.uk/env/cserge/pub/wp/edm/edm_2003_07.pdf)

Carmon, Ziv & Dan Ariely (2000): Focusing on the Forgone: Why Value can Appear so Different to Buyers & Sellers. *Journal of Consumer Research*, 27(3), 360-370.

Dhar, Ravi & Klaus Wertenbroch (2000): Consumer Choice between Utilitarian and Hedonic Goods. *Journal of Marketing Research* 37, 60-71.

Fehr, Ernst & Lorenz Goette (2004). Do Workers Work More if Wages are High? Evidence from a Randomized Field Experiment, *IZA Discussion Paper No. 1002*; Available at: <ftp://ftp.iza.org/dps/dp1002.pdf>

Gneezy, Uri & Jan Potters (1997). An experiment on risk-taking and evaluation periods. *Quarterly Journal of Economics* 112(2), 631-645(15).

Gneezy, Uri, Arie Kapteyn & Jan Potters. Evaluation Periods and Asset Prices in a Market Experiment. *Journal of Finance* 58(2), 821-838.

Harbaugh, William, Kate Krause & Lise Vesterlund (2001). Are Adults Better Behaved Than Children? Age, Experience, and the Endowment Effect. *Economics Letters* 70(2): 175-81.

- Harbaugh, William, Kate Krause, and Lise Vesterlund (2002). Risk attitudes of children and adults: choices over small and large probability gains and losses. *Experimental Economics* 5(1): 53-84.
- Hardie, Bruce, Eric Johnson & Peter Fader (1993). Reference dependence, loss-aversion, and brand choice. *Marketing Science*, 12, 1993, 378-394.
- Harrison, Glenn, Morten Lau & Elisabet Rutström (2004). Estimating Risk Aversion in Denmark. Evidence from a Field Experiment. Available at <http://www.bus.ucf.edu/wp/content/archives/04-07Glenn.pdf>
- Horowitz, John and Kenneth McConnell (2002): A Review of WTA/WTP Studies. *Journal of Environmental Economics and Management* 44, 426-447.
- Kahneman, Daniel, Jack Knetsch & Richard Thaler (1990): Experimental tests of the endowment effect and the Coase theorem. *Journal of Political Economy* 98, 1325-1348.
- Kahneman, Daniel, Jack Knetsch & Richard Thaler (1991): Anomalies: The endowment effect, loss aversion and status quo bias. *Journal of Economic Perspectives* 5(1), 193-206.
- Knetsch, Jack (1989): The endowment effect and evidence of non-reversible indifference curves. *American Economic Review* 79(5), 1277-1284.
- Kovalchik, Stephanie, Colin F. Camerer, David M. Grether, Charles R. Plott & John M. Allman (2003). Aging and Decision Making: A broad comparative study of decision behaviour in neurologically healthy elderly and young individuals. Forthcoming in *Journal of Economic Behavior and Organization*. <http://www.hss.caltech.edu/~camerer/aging092203.pdf>
- List, John A. (2002). Testing neoclassical competitive market theory in the field. *Proceedings of the National Academy of Sciences* 90(24), 15827-15830.
- List, John (2003): Does market experience eliminate market anomalies? *Quarterly Journal of Economics* 118(1), 41-71.
- Myagkov, Mikhail & Charles Plott (1997): Exchange economies and loss exposure: Experiments exploring prospect theory in market environments. *American Economic Review* 87(5), 801-828.
- Peters, Ellen, Paul Slovic & Robin Gregory (2003): The Role of Affect in the WTA/WTP Disparity. *Journal of Behavioral Decision Research* 16, 309-330.
- Plott Charles, R. & Kathryn Zeiler (2003): The Willingness to Pay/Willingness to Accept Gap, the "Endowment Effect", Subject Misconceptions and Experimental Procedures for Eliciting Valuations. Social Science Working Paper 1132, Caltech; <http://www.hss.caltech.edu/SSPapers/wp1132.pdf>
- Rabin, Matthew (2000): Risk-aversion and expected utility theory: A calibration theorem. *Econometrica*, 68(5), 1281-1292.
- Rabin, Matthew & Richard Thaler (2001). Anomalies. Risk Aversion. *Journal of Economic Perspectives* 15(1), 219-232.
- Schmidt, Ulrich & Stefan Traub (2002). An experimental test of loss aversion. *Journal of Risk and Uncertainty* 25(3), 233-249.
- Tversky, Amos & Daniel Kahneman (1991): Loss aversion in riskless choice: A reference-dependent model. *Quarterly Journal of Economics*, 106, 1039-1061.
- Van Boven, Leaf, David Dunning & George Loewenstein (2000). Egocentric empathy gaps between owners and buyers: Misperceptions of the endowment effect. *Journal of Personality and Social Psychology*, 79, 66-76.

### 3. Incentive contracts

- Non-linear incentive effects
- Hidden costs of incentives
- Incentives and voluntary cooperation

#### Readings:

Fehr, Ernst & Bettina Rockenbach (2003) Detrimental effects of sanctions on human altruism. *Nature* 422, 13 March, 137-140. Available at:

<http://www.iew.unizh.ch/home/fehr/papers/DetrimentalEffects.pdf>

Fehr, Ernst & John A. List (2004). The hidden costs of incentives – trust and trustworthiness among CEOs. *Journal of the European Economic Association* 2(5), 743-727. Available at:

<http://www.iew.unizh.ch/home/fehr/papers/hiddenCostsRewards.pdf>

Fehr, Ernst & Simon Gächter (2002). Do Incentive Contracts Undermine Voluntary Cooperation? Working Paper No. 34, Institute for Empirical Research in Economics, University of Zurich. Available at: <http://www.iew.unizh.ch/wp/iewwp034.pdf>

Gneezy, Uri & Aldo Rustichini (2000): “Pay Enough or Don’t Pay at all”, *Quarterly Journal of Economics* CXV(3), 791-810.

#### Recommended:

Anderhub, Vital, Simon Gächter, and Manfred Königstein (2002): Efficient Contracting and Fair Play in a Simple Principal-Agent Experiment. *Experimental Economics* 5(1), 5-25.

Bohnet, Iris, Bruno Frey & Steffen Huck (2001). More Order with Less Law: On Contract Enforcement, Trust, and Crowding. *American Political Science Review* 95, 131-144.

Bull, Clive, Andrew Schotter & Keith Weigelt (1987). Tournaments and Piece Rates: An Experimental Study. *Journal of Political Economy* 95, 1-33.

Deci, Edward & Richard Ryan (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum Press.

Deci, Edward, Richard Koestner & Richard Ryan (1999). A Meta-analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin* 125, 627-668.

Fehr, Ernst & Armin Falk (2002). The psychological foundations of incentives. *European Economic Review* 46, 687-724. Available at: <http://www.iza.org/en/papers/Falk/psycheer.pdf>

Fehr, Ernst & Klaus M. Schmidt (2004). Fairness and Incentives in Multi-Task Principal-Agent Model. *Scandinavian Journal of Economics* 106(3), 453-474.

Fehr, Ernst, Alexander Klein & Klaus Schmidt (2001). Fairness, Incentives, and Contractual Incompleteness. Working Paper No. 120, University of Zurich. Available at: <http://www.iew.unizh.ch/wp/iewwp072.pdf>

Frey, Bruno & Reto Jegen (2001). Motivation Crowding Theory. *Journal of Economic Surveys* 15(5), 589-611.

Gächter, Simon & Ernst Fehr (2002): Fairness in the Labour Market – A Survey of Experimental Results, Friedel Bolle, Marco Lehmann-Waffenschmidt (eds.): "Surveys in Experimental Economics. Bargaining, Cooperation and Election Markets", Physica-Verlag.

Gneezy, Uri & Aldo Rustichini (2000). A Fine is a Price, *Journal of Legal Studies* XXIX, 1-17.

Gneezy, Uri (2003): The W effect of incentives. Mimeo, Available at: <http://cramton.umd.edu/workshop/papers/gneezy-W-effect-of-incentives.pdf>

Irlenbusch, Bernd & Dirk Sliwka (2004). Incentives, Decision Frames, and Motivation Crowding Out – An Experimental Investigation. Available at: <http://www.whu.edu/orga/geaba/Papers/2003/GEABA-DP03-14.pdf>

Irlenbusch, Bernd & Dirk Sliwka (forthcoming): Transparency and reciprocal behaviour in employment relationships. *Journal of Economic Behavior & Organization*. Available at <ftp://ftp.iza.org/dps/dp887.pdf>.

Keser, Claudia & Marc Willinger (2000). Principals' principles when agents' actions are hidden. *International Journal of Industrial Organization* 18, 163-185.

van Dijk, Frans, Joep Sonnemans & Frans van Winden (2001). Incentive systems in a real effort experiment. *European Economic Review* 45, 187-214.

## 4. Cooperation

- Public Goods
- Voluntary Cooperation
- Altruistic punishment
- Cross-Cultural Experiments

### Readings:

Fehr Ernst, & Simon Gächter (2002): Altruistic Punishment in Humans. *Nature* 415, 137-140. [http://www.unipublic.unizh.ch/magazin/wirtschaft/2002/0413/Altruistic\\_Punishment.pdf](http://www.unipublic.unizh.ch/magazin/wirtschaft/2002/0413/Altruistic_Punishment.pdf)

Fischbacher, Urs & Simon Gächter (2004): Heterogeneous motivations and the dynamics of free riding in public goods. Mimeo, will be supplied later.

Frey, Bruno & Stephan Meier (forthcoming). Social Comparison and Pro-Social Behavior: Testing 'Conditional Cooperation' in a Field Experiment, *American Economic Review*. Available at: [http://www.iew.unizh.ch/home/smeier/downloads/AER\\_revision.pdf](http://www.iew.unizh.ch/home/smeier/downloads/AER_revision.pdf)

### Recommended:

Anderson, Christopher M. and Louis Putterman (forthcoming). Do non-strategic sanctions obey the law of demand? *Games and Economic Behavior*. Available at: [http://www.econ.brown.edu/fac/Louis\\_Putterman/working/pdfs/varcostGEBfinal9-1-04.pdf](http://www.econ.brown.edu/fac/Louis_Putterman/working/pdfs/varcostGEBfinal9-1-04.pdf)

Bardsley Nicholas (2000): Control Without Deception: Individual Behaviour in Free-Riding Experiments Revisited. *Experimental Economics* 3: 215-40.

Bardsley, Nicholas & Peter Moffatt (2003). The experimentics of public goods: Inferring motivations from contributions. Mimeo, CEDEX, University of Nottingham. <http://www.nottingham.ac.uk/economics/staff/details/papers/bardsley&moffat2003.pdf>

Bardsley, Nicholas & Rupert Sausgruber (2004). Conformity and reciprocity in public good provision. Mimeo, University of Innsbruck November 2004 Available at: <http://homepage.uibk.ac.at/homepage/c404/c40422/Conformity.pdf>

Bochet, Olivier, Talbot Page and Louis Putterman (forthcoming). Communication and Punishment in Voluntary Contribution Experiments. *Journal of Economic Behavior and Organization*. Available at: [http://www.econ.brown.edu/fac/Louis\\_Putterman/working/pdfs/vcmct\\_jebo-6-9-03.pdf](http://www.econ.brown.edu/fac/Louis_Putterman/working/pdfs/vcmct_jebo-6-9-03.pdf)

Brandts, Jordi, & Arthur Schram (2001): Cooperation and Noise in Public Goods Experiments: Applying the Contribution Function Approach, *Journal of Public Economics* 79, 399-427.

Carpenter, Jeffrey & Juan-Camilo Cardenas (2004). An inter-cultural examination of cooperation in the commons. Mimeo, Middlebury College. Available at.

<http://community.middlebury.edu/~jcarpent/papers/ICCPR.pdf>

Carpenter, Jeffrey (2004). The Demand for Punishment. Mimeo, Middlebury College. Available at: <http://community.middlebury.edu/~jcarpent/papers/DFP.pdf>

Carpenter, Jeffrey (forthcoming). Punishing Free-Riders: How Group Size Affects Mutual Monitoring and the Provision of Public Goods. *Games and Economic Behavior*. Available at: [http://community.middlebury.edu/~jcarpent/papers/PFR\(revision\).pdf](http://community.middlebury.edu/~jcarpent/papers/PFR(revision).pdf)

Carpenter, Jeffrey and Erika Seki (2004): Do Social Preferences Increase Productivity? Field Experimental Evidence from Fishermen in Toyama Bay. Mimeo, Middlebury College. <http://community.middlebury.edu/~jcarpent/papers/DSPIP.pdf>

Carpenter, Jeffrey, Amrita G. Daniere & Lois M. Takahashi (2004). Cooperation, trust, and social capital in Southeast Asian urban slums. *Journal of Economic Behavior & Organization* 55, 533-551. [http://community.middlebury.edu/~jcarpent/papers/CTSC\(JEBO\).pdf](http://community.middlebury.edu/~jcarpent/papers/CTSC(JEBO).pdf)

Carpenter, Jeffrey, Hans Peter Matthews and O. Ong'ong'a (2004). Why Punish? Social Reciprocity and the Enforcement of Prosocial Norms. *Journal of Evolutionary Economics* 14(4), 407-430.

Cinyabuguma, Matthias, Talbot Page and Louis Putterman (forthcoming): Cooperation under the threat of expulsion in a public goods experiment. *Journal of Public Economics*. [http://www.econ.brown.edu/fac/Louis\\_Putterman/working/pdfs/expul\\_pap\\_workingp.pdf](http://www.econ.brown.edu/fac/Louis_Putterman/working/pdfs/expul_pap_workingp.pdf)

Clark, K., and M. Sefton (2001). The Sequential Prisoner's Dilemma: Evidence on Reciprocation. *Economic Journal* 111, 51-68.

Croson, Rachel (2002). Theories of altruism and reciprocity: evidence from linear public goods games. University of Pennsylvania, Mimeo.

De Quervain, D., U. Fischbacher, V. Treyer, M. Schellhammer, U. Schnyder, A. Buck, E. Fehr (2004). The Neural Basis of Altruistic Punishment. *Science*, 305, 1254-1258. Available at: [http://www.iew.unizh.ch/home/fehr/science/Altruistic\\_Punishment.pdf](http://www.iew.unizh.ch/home/fehr/science/Altruistic_Punishment.pdf)

Engelmann, Dirk & Urs Fischbacher (2002). Indirect Reciprocity and Strategic Reputation Building in an Experimental Helping Game. Institute for Empirical Research in Economics, University of Zurich, Working Paper No. 132. Available at: <http://www.iew.unizh.ch/wp/iewwp132.pdf>

Fehr Ernst, and Simon Gächter (2000): Cooperation and Punishment in Public Good Experiments. *The American Economic Review* 90(4), 981-994.

Fehr, E. and U. Fischbacher (2003). The Nature of Human Altruism. *Nature* 425, 785-791. Available at: <http://www.iew.unizh.ch/home/fehr/papers/NatureOfHumanAltruism.pdf>

Fehr, E., and S. Gächter (2000). Fairness and Retaliation: The Economics of Reciprocity. *Journal of Economic Perspectives* 14(3), 159-181.

Fischbacher Urs, Simon Gächter, and Ernst Fehr (2001): "Are people conditionally cooperative? Evidence from a public goods experiment" *Economics Letters* 71, 397 – 404.

Frey, Bruno and Stephan Meier (2004). Pro-social behaviour in a natural setting. *Journal of Economic Behavior & Organization* 54, 65-88.

Ledyard, John (1995). Public Goods: A Survey of Experimental Research. In: John Kagel and Alvin Roth, *Handbook of Experimental Economics*, Princeton University Press.

Masclot, David, Charles Noussair, Stephen Tucker, and Marie-Claire. Villeval (2003). Monetary and Non-Monetary Punishment in the Voluntary Contributions Mechanism. *American Economic Review* 93(4), 366-380.

Milinski, Manfred, Dirk Semmann & Hans-Jürgen Krambeck (2002). Reputation Helps Solve the 'Tragedy of the Commons'. *Nature* 415, 424-426.

Noussair, C., and S. Tucker (forthcoming). Combining Monetary and Social Sanctions to

Promote Cooperation. *Economic Inquiry*. Available at:

<http://www.cs.indiana.edu/~yonliu/econdesk/Both%20Sanctions.pdf>

Page, Talbot, Louis Putterman, and Bulent Unel (forthcoming). Voluntary Association in Public Goods Experiments: Reciprocity, Mimicry and Efficiency. *Economic Journal*. Available at: [http://www.econ.brown.edu/fac/Louis\\_Putterman/working/pdfs/wp2002-19.pdf](http://www.econ.brown.edu/fac/Louis_Putterman/working/pdfs/wp2002-19.pdf)

Palfrey, Thomas and Jeffrey Prisbrey (1997). Anomalous Behavior in Public Goods Experiments: How Much and Why? *American Economic Review* 87, 829-846.

Potters, Jan, Martin Sefton & Lise Vesterlund (2004). Leading-by-example in voluntary contribution games: An experimental study. Mimeo, University of Nottingham. Available at: <http://www.nottingham.ac.uk/economics/cedex/papers/2004-01.pdf>

Rege, Mari, and Kjetil Telle (2004). The Impact of Social Approval and Framing on Cooperation in Public Good Situations. *Journal of Public Economics* 88, 1625-1644.

Sausgruber, Rupert (2004). Testing for team spirit – An experimental study. Mimeo, University of Innsbruck. Available at:

[http://homepage.uibk.ac.at/homepage/c404/c40422/TeamSpirit\\_July2004.pdf](http://homepage.uibk.ac.at/homepage/c404/c40422/TeamSpirit_July2004.pdf)

Sefton, Martin, Robert Shupp, and James Walker (2002). The Effect of Rewards and Sanctions in Provision of Public Goods. CeDEX Working Paper 2002-2, University of Nottingham. Available at: <http://www.nottingham.ac.uk/economics/cedex/papers/2002-02.pdf>

Sonnemans, Joep, Arthur Schram, and Theo Offerman (1999): Strategic behavior in public good games: when partners drift apart. *Economics Letters* 62, 35-41. An extended version is available at: <http://www.fee.uva.nl/creed/pdf/strat.pdf>

## 5. (Testing theories of) Social Preferences

- Dictator games
- Ultimatum games
- Trust games
- Gift exchange games
- Altruism
- Inequality Aversion
- Reciprocity

### *Readings:*

Bellemare, Charles & Sabine Kröger (2004). On representative social capital. IZA Discussion paper No. 1145. Available at: <ftp://ftp.iza.org/dps/dp1145.pdf>

Engelmann, Dirk & Martin Strobel (2004): Inequality Aversion, Efficiency, and Maximin Preferences in Simple Distribution Experiments. *American Economic Review* 94(4), 857-869.

Falk, Armin (2004): Charitable Giving as a Gift Exchange: Evidence from a Field Experiment. IZA Discussion Paper 1148, Available at: <ftp://ftp.iza.org/dps/dp1148.pdf>.

Falk, Armin, Ernst Fehr & Urs Fischbacher (2000): Testing Theories of Fairness - Intentions Matter, Working Paper No. 63, University of Zurich 2000. Available at: <http://www.iew.unizh.ch/wp/iewwp063.pdf>

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Sanfey, A.G., Rilling, J.K., Aronson, J.A., Nystrom, L.E., & Cohen, J.D. (2003). The neural basis of economic decision-making in the ultimatum game. *Science*, 300, 1755-1758.

*Recommended:*

Abbink, Klaus, Irlenbusch, Bernd, & Renner, Elke (2000). The moonlighting game: An experimental study on reciprocity and retribution. *Journal of Economic Behavior and Organization*, 42, 265-277.

Andreoni, James & John Miller (2002). Giving according to GARP: An experimental study of rationality and altruism. *Econometrica*, 70, 737-753.

Andreoni, James & Lise Vesterlund (2001). Which is the fair sex? Gender differences in altruism. *Quarterly Journal of Economics* 116(1), 296-312

Andreoni, James, Paul Brown & Lise Vesterlund (2002). What makes an allocation fair? Some experimental evidence. *Games and Economic Behavior* 40, 1-24.

Ben-Shakhar, Gershon, Gary Bornstein, Astrid Hopfensitz & Frans van Winden (2004). Reciprocity and Emotions: Arousal, Self-Reports, and Expectations. Tinbergen Institute Discussion Paper TI 2004-099/1. Available at:  
[http://www1.fee.uva.nl/creed/pdf/Ben\\_Shakhar\\_etal\\_TI.pdf](http://www1.fee.uva.nl/creed/pdf/Ben_Shakhar_etal_TI.pdf)

Berg, Joyce, John Dickhaut & Kevin McCabe (1995). Trust, reciprocity, and social history. *Games and Economic Behavior* 10, 122-142.

Blount, Sally (1995). When social outcomes aren't fair: The effect of causal attributions on preferences. *Organizational Behavior and Human Decision Processes* 63, 131-144.

Bohnet, Iris & Richard Zeckhauser (2004). Social Comparisons in Ultimatum Bargaining. *Scandinavian Journal of Economics* 106(3), 495-510.

Bolton, Gary & Axel Ockenfels (2000). ERC – A theory of equity, reciprocity, and competition. *American Economic Review*, 100, 166-193.

Bosman, Ronald & Frans van Winden (2002). Emotional Hazard in a Power-to-Take Experiment. *Economic Journal* 112(1), 147-169.

Buchan, Nancy, Rachel Croson & Robyn Dawes (2002). Swift neighbors and persistent strangers: a cross-cultural investigation of trust and reciprocity in social exchange. *American Journal of Sociology*, 108, 168-206.

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## Appendix: Essential References

For those who are new to experimental economics, I have compiled some useful references on experimental economics.

### 1. Methods

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### 2. Textbooks

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Davis, Douglas and Charles Holt (1993): *Experimental Economics*. Princeton University Press.

### 3. Surveys

Bolle, Friedel and Marco Lehmann-Waffenschmidt (eds.) (2002): *Surveys in Experimental Economics. Bargaining, Cooperation, and Election Stock Markets*. Heidelberg: Physica-Verlag.

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### 4. Collected Volumes, and Monographs

Budescu, David V., Ido Erev, and Rami Zwick (eds.) (1999): *Games and Human Behavior*. Mahwah: Lawrence Erlbaum Associates, Inc.

Zwick, Rami and Amnon Rapoport (2002): *Experimental Business Research*. Dordrecht: Kluwer Academic Publishers.

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### 5. Professional society and Journal

Experimental Economists have their own professional association, called the *Economic Science Association* (see <http://www.economicsscience.org/>). It edits the profession's special journal, called *Experimental Economics*. (see <http://www.economicsscience.org/Journal/default.asp>).

### 6. Software for conducting experiments

A frequently used specialised software for running laboratory experiments is z-Tree – the “Zurich Toolbox for Readymade Economic Experiments”. It does not require any programming skills. See <http://www.iew.unizh.ch/ztree/index.php>.

## **7. Internet resources**

- Al Roth’s homepage is a perfect entry point: <http://www.economics.harvard.edu/~aroth/alroth.html>
- Charles Holts’ Y2k page provides an extensive bibliography (exactly 2000 items, up to the year 2000): <http://www.people.virginia.edu/~cah2k/y2k.htm>