Economics 209B
Behavioral / Experimental Game Theory
(Spring 2008)
Course Description

I. Contact information

Office: 505 Evans Hall
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II. Location and time

Lectures will be held in room 639 Evans Hall Mondays 10:00-12:00. There will be no lecture Feb. 18, Mar. 24 and 31, and Apr. 14 and 28. We will schedule makeup classes, which would fit with the schedules of those taking the course for credit, later in the semester.

III. General information

The course presents advanced topics in behavioral / experimental game theory and designed to develop theoretical and experimental tools. Owing to the limitation of time, the topics covered will necessarily be only a small fraction of what one could (and ideally, should) cover in this course, and thus, the course cannot provide a complete coverage of the vast and growing body of work on behavioral / experimental game theory.

Experimental economics has become a major area of research in economics. Its basic premise is that all good economic theories can be testable in a controlled laboratory setting. In fact, one may argue that some economic theories can only be tested experimentally. The course will also survey some classics of experimental game theory and discuss some of its recent developments. The course will not about experimental methods per se.

The course will focus on research! You should now be starting to conduct your own research. It is hard not to shortchange this goal while taking courses. But you are strongly encouraged you to apply the material from this (or any) course to research. If you are in the second year (and above) of the economics PhD program, you should be attending seminars regularly. The theory seminar (208) takes place on Mondays 4-5:30 in room 639 Evans Hall.

IV. Prerequisites

The prerequisite is a solid foundation in game theory (209A). Game theory courses in other PhD programs on campus or outside economics PhD courses are generally not likely to be adequate substitutes. The course is not suitable for those without a solid foundation in microeconomics – the first-year microeconomics courses in the economics PhD program (201A and 201B).

V. Office hours

By appointment. Feel free to drop by my office (Evans 505) to ask questions, or even just to introduce yourself and to chat. You can email any question, and I will try to respond promptly. There is no GSI for the course so please use me as such. I would also be happy to discuss with you any issues beyond the course work, not necessarily of game-theoretic substance.

VI. Books

1. Camerer C., Behavioral Game Theory: Experiments on Strategic Interaction, Princeton University Press, 2003 (hereafter, BGM).
2. Kagel J. and A. Roth, Handbook of Experimental Economics, Princeton University Press, 1995 (hereafter, HEE).
3. Rubinstein A. Modeling Bounded Rationality, MIT Press, 1998 (hereafter, MBR – free download).

VII. Syllabus (tentative and incomplete)

- **Choice under uncertainty (Jan. 28)**
  - HEE ch. 8 III A-E.
  - Starmer, C. (2000) "Developments in Non-Expected Utility Theory: The Hunt for a descriptive Theory of Choice under Risk." *Journal of Economic Literature*, 38(2): 332-382.
  - Harless, D. and C. Camerer (1994) "The Predictive Utility of Generalized Expected Utility Theories." *Econometrica*, 62(6): 1251-1289.
  - Hey, J. and C. Orme (1994) "Investigating Generalizations of Expected Utility Theory Using Experimental Data." *Econometrica*, 62(6): 1291-1326.
  - Choi, S., R. Fisman, D. Gale and S. Kariv (2007) "Revealing Preferences Graphically: An Old Method Gets a New Tool Kit." *American Economic Review*, Papers & Proceedings, 97(2): 153-158.
  - Choi, S., R. Fisman, D. Gale and S. Kariv (2007) "Consistency and Heterogeneity of Individual Behavior under Uncertainty," *American Economic Review*, 97(5): 1921-1938.
- **Games with pure information externalities (Feb. 4, 11)**
  - Bikhchandani, S., D. Hirshleifer and I. Welch (1992) "A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascade." *Journal of Political Economy, 100*(5): 992-1026.
  - Bikhchandani, S., D. Hirshleifer and I. Welch (1998) "Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades." *Journal of Economic Perspective, 12*(3): 151-170.

- Anderson, L. and C. Holt (1997) "Information Cascades in the Laboratory." *American Economic Review, 87*(5): 847-862.
- Kübler, D. and G. Weizsäcker (2003) "Limited depth of reasoning and failure of cascade formation in the laboratory." *Review of Economic Studies, 71(2)*: 425-441.
- Goeree, J., T. Palfrey, B. Rogers, and R. McKelvey (2007) "Self-Correcting Information Cascades." *Review of Economic Studies*, 74(3): 733-762.
- Çelen, B. and S. Kariv (2004) "Distinguishing Informational Cascades from Herd Behavior in the Laboratory." *American Economic Review,* 94(3): 484-497.
- Çelen, B. and S. Kariv (2005) "An Experimental Test of Observational Learning under Imperfect Information." *Economic Theory*, 26(3): 677-699.

• **Equilibrium selection and refinements (Feb. 25)**

- BGT ch. 3 and 7.
- Gale D. (1995) "Dynamic Coordination Games." *Economic Theory*, 5(1): 1-18.
- Gale D. (2001) "Monotone Games with Positive Spillovers." *Games and Economic Behavior*, 37(2): 295-320.
- Marx L. and S. Matthews (2000) "Dynamic Voluntary Contribution to a Public Project." *Review of Economic. Studies,* 67(2): 327-358.
- Choi, S., D. Gale and S. Kariv (2007) "Sequential Equilibrium in Monotone Games: Theory-Based Analysis of Experimental Data." *Journal of Economic Theory*, accepted subject to minor revisions.

• **Quantal response equilibrium (Mar. 3)**

- McKelvey, R. and T. Palfrey (1995) "Quantal Response Equilibrium for Normal Form Games." *Games and Economic Behavior*, 10(1): 6-38.
- McKelvey, R. and T. Palfrey (1998) "Quantal Response Equilibrium for Extensive Form Games." *Experimental Economics*, 1(1): 9-41.
- Goeree, J., C. Holt, and T. Palfrey (2005) "Regular Quantal Response Equilibrium." *Experimental Economics*, 8(4): 347-367.
- Haile, P., A. Hortaçsu and G. Kosenok (2007) "On the Empirical Content of Quantal Response Equilibrium." *American Economic Review*, forthcoming.

• **Alternative equilibria (Mar. 10)**

- Spiegler, R. (2002) "Equilibrium in Justifiable Strategies: A Model of Reason-based Choice in Extensive-Form Games." *Review of Economic Studies*, 69(3): 691-706.
- Eyster, E. and M. Rabin (2005) "Cursed Equilibrium." *Econometrica*, 73(5): 1623–1672.
- Yildiz, M. (2007) "Wishful Thinking in Strategic Environments." *Review of Economic Studies*, 74(1): 319–344.

- **Learning (Mar. 17)**
  - BGT ch. 6.
  - Erev, I. and A. Roth (1998) "Predicting How People Play Games: Reinforcement Learning in Experimental Games with Unique, Mixed Strategy Equilibria." *American Economic Review*, 88(4): 848-881.
  - Camerer, C. and T-H. Ho (1999) "Experience Weighted Attraction Learning in Normal-Form Games." *Econometrica*, 67(4): 827-874.
  - Camerer, C., T-H. Ho and J-K Chong (2004) "A Cognitive Hierarchy Model of One-Shot Games." *Quarterly Journal of Economics*, 119(3): 861-898.
  - Chong, J-K., C. Camerer and T-H. Ho (2006) "A Learning-based Model of Repeated Games with Incomplete Information." *Games and Economic Behavior*, 55(2): 340-371.
  - Ho, T-H., C. Camerer and J-K. Chong (2007) "Self-tuning Experience-Weighted Attraction Learning in Games." *Journal of Economic Theory*, 133(1): 177-198.

- **Cognition (Apr. 7)**
  - Broseta, B., M. Costa-Gomes and V. Crawford (2001) "Cognition and Behavior in Normal-Form Games: An Experimental Study." *Econometrica*, 69(5): 1193-1235.
  - Broseta, B. and V. Crawford (2006) "Cognition and Behavior in Guessing Games: An Experimental Study." *American Economic Review*, 96(5): 1737-1768.