

Outline and Syllabus for Lectures on Behavioural and Experimental Game Theory

Vincent P. Crawford, University of Oxford, Hilary Term 2011

(Course materials at <http://dss.ucsd.edu/~vcrawfor/UndergradBehaviouralGameTheory.html>, linked to my page at <http://www.economics.ox.ac.uk>.)

Behavioural and experimental game theory blends the methods and questions of traditional game theory with behavioural assumptions that are more in keeping with empirical (usually experimental) evidence. These lectures will focus on two main issues: strategic thinking, the process by which players predict others' decisions and make their own decisions in initial responses to games without clear precedents; and adaptive learning, the process by which players learn to predict others' decisions from past experience with analogous games.

Good books on behavioural and/or experimental game theory include:

Colin Camerer, *Behavioral Game Theory: Experiments on Strategic Interaction*, Princeton 2003 (BGT)

Thomas Schelling, *The Strategy of Conflict*, Oxford 1960 or Harvard 1980

David Kreps, *Game Theory and Economic Modelling*, Oxford 1990

BGT is well worth owning if you have a special interest in behavioural and experimental game theory, but if not the Social Science Library has half a dozen copies (lending and reference). The Schelling and Kreps books are also well worth owning for those interested, and should be easy to find.

Outline and readings

A. Overview

BGT, Chapter 1, Introduction; Appendix 1.1, Basic Game Theory; and Appendix 1.2, Experimental Design; manuscript at http://dss.ucsd.edu/~vcrawfor/Camerer_Ch1intro.pdf

B. Strategic Thinking

Vincent Crawford, Miguel Costa-Gomes, Vincent Crawford, and Nagore Iriberry, "Strategic Thinking," <http://dss.ucsd.edu/~vcrawfor/CGCI27Dec10.pdf>, Sections 1, Introduction, and 2 Alternative Models of Strategic Thinking.

Miguel Costa-Gomes, Vincent Crawford, and Nagore Iriberry, "Comparing Models of Strategic Thinking in Van Huyck, Battalio, and Beil's Coordination Games," *Journal of the European Economic Association* 7 (2009), 377-387; <http://dss.ucsd.edu/~vcrawfor/CGCIJEEA17Oct08.pdf>

Colin Camerer, Teck-Hua Ho, and Juin Kuan Chong, "A Cognitive Hierarchy Model of Games," *Quarterly Journal of Economics* 119 (2004), 861-898: Sections I-III; <http://www.jstor.org/stable/25098704>

Rosemarie Nagel, "Unraveling in Guessing Games: An Experimental Study," *American Economic Review* 85 (1995), 1313-1326; <http://www.jstor.org/stable/2950991>

Miguel Costa-Gomes and Vincent Crawford, "Cognition and Behavior in Two-Person Guessing Games: An Experimental Study," *American Economic Review* 96 (2006), 1737-1768; <http://www.jstor.org/stable/30034993> or <http://dss.ucsd.edu/~vcrawfor/CGCAER06.pdf>

Vincent Crawford and Nagore Iriberry, "Fatal Attraction: Saliency, Naivete, and Sophistication in Experimental Hide-and-Seek Games," *American Economic Review* 97 (2007), 1731-1750; <http://www.jstor.org/stable/30034582>

C. Adaptive learning

- John Van Huyck, Joseph Cook, and Raymond Battalio (1997): "Adaptive Behavior and Coordination Failure," *Journal of Economic Behavior and Organization* 32, 483-503 (<http://www.sciencedirect.com/science/journal/01672681>)
- BGT, Chapter 6, Learning; Sections 7.4, Payoff-Asymmetric Order-Statistic Games; 7.6, Applications: Path-Dependence, Market Adoption, and Corporate Culture; 8.1, Simple Signaling Games and Adaptive Dynamics; and 8.4, Conclusion
- Vincent Crawford, "Adaptive Dynamics in Coordination Games," *Econometrica* 63 (1995), 103-143: Section 2 (pp. 106-109, especially footnote 8); <http://www.jstor.org/stable/2951699> or <http://dss.ucsd.edu/~vcrawfor/Crawford95EMT.pdf>
- Vincent Crawford and Bruno Broseta, "What Price Coordination? The Efficiency-enhancing Effect of Auctioning the Right to Play," *American Economic Review* 88 (March 1998), 198-225; <http://www.jstor.org/stable/116825> or <http://dss.ucsd.edu/~vcrawfor/CrawBro98AER.pdf>
- Vincent Crawford, "Learning Dynamics, Lock-in, and Equilibrium Selection in Experimental Coordination Games," in Ugo Pagano and Antonio Nicita, editors, *The Evolution of Economic Diversity*, London and New York: Routledge, 2001, 133-163; UCSD Discussion Paper 97-19; at <http://dss.ucsd.edu/~vcrawfor/ucsd9719.pdf>
- Colin Camerer and Teck-Hua Ho, "Experience-weighted Attraction Learning in Normal Form Games," *Econometrica* 67 (1999), 827-874; <http://www.jstor.org/stable/2999459>
- Colin Camerer and Teck-Hua Ho, "Experience-Weighted Attraction Learning in Coordination Games: Probability Rules, Heterogeneity, and Time-Variation," *Journal of Mathematical Psychology* 42 (1998), 305-326; <http://dx.doi.org/10.1006/jmps.1998.1217>