

## NUS BEHAVIORAL ECONOMICS SUMMER INSTITUTE 2011

### BACKGROUND READING ON BEHAVIORAL GAME THEORY

Dear Participants:

This letter includes suggested background reading on behavioral game theory for the Institute.

Behavioral game theory combines theory and empirical (mainly experimental) evidence to develop the understanding of strategic behavior needed to analyze economic, political, and social interactions. My lectures will cover models of how people learn in repeated interactions, models of bargaining, and models of strategic thinking as revealed by initial responses to games.

The first two lectures will focus on learning, mainly adaptive learning but touching on more sophisticated models. The third lecture will focus on models of bargaining, mostly unstructured bargaining. The last four lectures will focus on strategic thinking. The premise is that people's initial responses to games may deviate systematically from equilibrium, but there are common patterns in their deviations that allow certain structural models to out-predict equilibrium. We will start with evidence on this issue and then use the models to resolve theoretical and empirical puzzles in applications that have resisted analysis via equilibrium methods.

I first list books and papers that give good overviews of the material, which I recommend that you read to prepare. I next list papers that are important for the lectures. The books and papers should be readily available on the internet or in your university's library system.

Regards,

Vince Crawford

#### **Good Overviews (asterisks denote higher priority)**

\*Colin Camerer, *Behavioral Game Theory: Experiments on Strategic Interaction*, Princeton 2003: especially chapters 1 ([http://dss.ucsd.edu/~vcrawfor/Camerer\\_Ch1intro.pdf](http://dss.ucsd.edu/~vcrawfor/Camerer_Ch1intro.pdf)), 5.

\*Vincent Crawford, Miguel Costa-Gomes, and Nagore Iriberry, "Strategic Thinking"; <http://dss.ucsd.edu/~vcrawfor/CGCI27Dec10.pdf>

Vincent Crawford, "Theory and Experiment in the Analysis of Strategic Interaction," Chapter 7 in Kreps and Wallis, editors, *Advances in Economics and Econometrics: Theory and Applications, Seventh World Congress*, Vol. I, Cambridge 1997; reprinted as Chapter 12 in Camerer, Loewenstein, and Rabin, editors, *Advances in Behavioral Economics*, Princeton 2003: especially Sections 1-3; <http://dss.ucsd.edu/~vcrawfor/CrawfordThExp97.pdf> or <http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>

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

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

**Outline** (asterisks denote higher priority; more extensive list at Section II of <http://dss.ucsd.edu/~vcrawfor/SecondYearAdvancedMicroBehaviouralEconSyllabus10.htm>)

### **Adaptive Learning**

\*Crawford, “Theory and Experiment”, Sections 2.3, 2.4, and 6

\*Camerer, *Behavioral Game Theory*, Chapters 3, 6, 7.4, 7.6, 8.1, 8.4

\*Camerer and Teck-Hua Ho, “Experience-weighted Attraction Learning in Normal Form Games,” *Econometrica* 67 (1999), 827-874; <http://www.jstor.org/stable/2999459>

\*Crawford, “Learning Dynamics, Lock-in, and Equilibrium Selection in Experimental Coordination Games,” in Pagano and Nicita, editors, *The Evolution of Economic Diversity*, Routledge, 2001, 133-163; manuscript at <http://dss.ucsd.edu/~vcrawfor/ucsd9719.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 (especially the Introduction); <http://www.jstor.org/stable/116825> or <http://dss.ucsd.edu/~vcrawfor/CrawBro98AER.pdf>

Frederick Rankin, John Van Huyck, and Raymond Battalio, “Strategic Similarity and Emergent Conventions: Evidence from Similar Stag Hunt Games,” *Games and Economic Behavior*, 32 (2000), 315-337; <http://dx.doi.org/10.1006/game.1999.0711>

Dale Stahl, “Boundedly Rational Rule Learning in a Guessing Game,” *Games and Economic Behavior* 16 (1996), 303-330; <http://dx.doi.org/10.1006/game.1996.0088>

Crawford, “Introduction to Experimental Game Theory,” *Journal of Economic Theory*, 104 (2002), 1-15, especially 8-12; [doi:10.1006/jeth.2001.2909](https://doi.org/10.1006/jeth.2001.2909) or <http://weber.ucsd.edu/~7Evcrawfor/IntroEGTSym.html>

Camerer, Ho, and Juin-Kuan Chong, “Sophisticated Experience-Weighted Attraction Learning and Strategic Teaching in Repeated Games,” *Journal of Economic Theory*, 104 (2002), 137-188; <http://dx.doi.org/10.1006/jeth.2002.2927> or <http://www.hss.caltech.edu/~camerer/jeth2927.pdf>

### **Bargaining**

\*Camerer, *Behavioral Game Theory*, Chapters 4.1, 4.2, 4.3, 4.4, 7.2

\*Crawford, “Theory and Experiment”, Section 5.3

Alvin Roth, “Bargaining Phenomena and Bargaining Theory,” Chapter 2 in Roth, editor, *Laboratory Experimentation in Economics: Six Points of View*, Cambridge, 1987

## Strategic Thinking

- \*Crawford, Costa-Gomes, and Iriberry, “Strategic Thinking,” especially Sections 1, 2, 4
- \*Camerer, *Behavioral Game Theory*, Appendix 1.1, Chapters 5, 7
- \*Camerer, Ho, and Chong, “A Cognitive Hierarchy Model of Games,” *Quarterly Journal of Economics* 119 (2004), 861-898: Sections I-III, VI; <http://www.jstor.org/stable/25098704>
- \*Costa-Gomes and 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>
- Costa-Gomes, Crawford, and 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
- Crawford and 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>
- Isabelle Brocas, Juan Carrillo, Stephanie Wang, and Camerer, “Imperfect Choice or Imperfect Attention? Understanding Strategic Thinking in Private Information Games”; <http://www.hss.caltech.edu/~sweiwang/papers/Betting.pdf>
- Crawford and Iriberry, “Level- $k$  Auctions: Can Boundedly Rational Strategic Thinking Explain the Winner’s Curse and Overbidding in Private-Value Auctions?,” *Econometrica* 75 (2007), 1721-1770; <http://dss.ucsd.edu/~vcrawfor/CrawfordIriberriEMT07.pdf> or [www.jstor.org/stable/4502047](http://www.jstor.org/stable/4502047)
- Vincent Crawford, “Lying for Strategic Advantage: Rational and Boundedly Rational Misrepresentation of Intentions,” *American Economic Review* 93 (2003), 133-149; <http://dss.ucsd.edu/~vcrawfor/CrawAER03.pdf> or <http://www.jstor.org/stable/3132165>
- Tore Ellingsen and Robert Östling, “When Does Communication Improve Coordination?,” *American Economic Review* 100 (2010), 1695–1724; <http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.4.1695>
- Crawford and Joel Sobel, “Strategic Information Transmission,” *Econometrica* 50 (1982), 1431-1451; <http://www.jstor.org/stable/1913390>
- Joseph Wang, Michael Spezio, and Camerer, “Pinocchio’s Pupil: Using Eyetracking and Pupil Dilation To Understand Truth-telling and Deception in Sender-Receiver Games,” *American Economic Review* 100 (2010), 984–1007; <http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.3.984>