Syllabus for Experimental Economics I: Behavioral Game Theory

Classroom and Time: Monday 2:20-5:20pm, at Social Sciences 405 (社科 405 教室)
Class website: http://homepage.ntu.edu.tw/~josephw/experimental_17S.htm
Instructor: Joseph Tao-yi Wang (josephw "at" ntu.edu.tw) Office: Social Sciences 754
Office Hours: Monday 5:20-6pm (after class) or by email appointment

This is an upper division and graduate level course on experimental economics, focusing on behavioral game theory. The purpose is to introduce experimental economics to students so they can start their own research in this field. You are expected to write individual research proposals and present them. Specific goals of this course include:

1. **Introduction to experimental economics**: After this class, students are expected to be able to name several experiments performed in each fields of economics, and describe how the results affirm (or differ from) economic theory and/or field data.

2. **Experimental design**: After this class, students are expected to understand how to design and run an experiment. Students will also write a research proposal that:
   a. Describes a proposed experiment (with sample instructions for subjects),
   b. Argues why should we care about this experiment and why the experiment is designed this way (compared to other possible designs), and,
   c. Relates your experiment to existing literature (if any) and describes expected results and/or methods to analyze the data (or simulation results).

3. **Evaluate most current research**: After this class, students are expected to develop the ability to read recent journal articles in experimental economics, and evaluate the quality of the papers. During class, students are expected to read assigned journal articles and book chapters and present one article and/or one chapter in class.

Textbooks:
1. Camerer (2003), *Behavioral Game Theory*, Princeton University Press (BGT).
2. Roth (2015), Who Gets What — and Why: The New Economics of Matchmaking and Market Design, Houghton Mifflin Harcourt. (For group presentation). (blog)

Recommended Reading:
3. Kagel and Roth, ed. (1995, 2012), *Handbook of Experimental Economics*, Vol.1 & 2, Princeton University Press (HEE). Vol.2 chapters available online. (Handbook)
4. Holt (2007), *Markets, Games and Strategic Behavior*, Pearson. (Undergrad)
5. Crawford, Costa-Gomes and Iriberri (2013), "Structural Models of Nonequilibrium Strategic Thinking: Theory, Evidence, and Applications," *Journal of Economic Literature*, 51(1), 5-62. (Level-k)
6. Krajbich, Oud and Fehr (2014), "Benefits of Neuroeconomic Modeling: New Policy Interventions and Predictors of Preference," *American Economic Review Papers and Proceedings*, 104(5), 501-506. (Neuroeconomics)

7. Riley (2012), Essential Microeconomics, Cambridge University Press. (Theory).
8. Mas-Colell, Whinston & Green (1995), Microeconomic Theory, Oxford University Press.

Assignments: Group – 20-minute oral presentations of book chapter (20%) and one research article (20%). Individual – Research proposal (<4 pages) (3-minute midterm presentation 20%, final proposal 20%), weekly feedback to other presenters (20%).

Note: Feedback for other presenters should be uploaded to CEIBA and google documents, so the GA can compile them and send them to the presenters. Consult the "Oral Presentation Evaluation Criteria and Checklist" for elements of a good presentation and specific areas you should provide feedback, and Wei-jen Hsu's 關於 presentation 的一些想法 (How to Prepare a 20-minute Presentation) for how I expect you to prepare the presentations.

Course Outline:
1. Experimental Economics and Behavioral Game Theory (BGT Ch.1; Wang notes)
2. Risk and Time Preferences (Holt, Ch.4, Liu, Meng and Wang, 2014)
3. Basic Principles of Experimental Design (BGT A1.2)
4. Social Preferences: Ultimatum, Dictator and Trust Games (BGT, Ch.2; new Handbook chapter, Review for Ultimatum, Dictator and Trust Games)
5. Mixed-Strategy Equilibrium (BGT, Ch. 3; Ostling et al., 2011)
6. Bargaining (BGT, 4)
7. Dominant Solvable Games (BGT, Ch. 5)
8. Level-k Model (Crawford et al., JEL 2013)
9. Learning (BGT, Ch.6 and new Handbook chapter)
10. Coordination and Equilibrium Selection (BGT, Ch.7)
11. Signaling, Reputation and Cheap Talk (BGT, 8; Wang et al., 2010)
12. Field Experiments (Harrison and List, JEL 2004, Glennerster-Takavarasha, Ch.1)

Book Chapter Presentation: Who Gets What — and Why
Chap. 1 – Introduction: Every Market Tells a Story (TBA)
Chap. 2 – Markets for Breakfast and Through the Day (徐銘霞、陳則宇)
Chap. 3 – Lifesaving Exchanges (羅廣淇、譚尼克)
Chap. 4 – Too Soon (陳昱邵、沈俊廷)
Chap. 5 – Too Fast: The Greed for Speed (馬健原、林鈞樂)
Chap. 6 – Congestion: Why Thicker Needs to Be Quicker (林思詩、王冀之)
Chap. 7 – Too Risky: Trust, Safety, and Simplicity (韓世珊、方崇安)
Chap. 8 – The Match: Strong Medicine for New Doctors (陳宏毅、葉芮君)
Chap. 9 – Back to School (陳奕銘、茆賀甯)
Chap. 10 – Signaling (黃雋穎、謝潔儀)
Chap. 11 – Repugnant, Forbidden ...and Designed (羅法蘭、鄭淳厚)
Chap. 12 – Free Markets and Market Design (TBA)

Paper Presentation:

1. Dickhaut, McCabe and Mukherji (1995)
2. Cai and Wang (2006)
3. (黃雋穎、謝潔儀) Wang, Spezio and Camerer (2010)
4. Lai, Lim and Wang (2015)
5. (徐銘霞、陳則宇) Battaglini, Lai, Lim and Wang (2016)
6. Blume, DeJong, Kim, Sprinkle (2001)
7. Blume, De Jong, Neumann and Savin (2002)
8. Kawagoe and Takizawa (2009)
9. Gneezy (2005)
10. (馬健原、林鈞樂) Erat and Gneezy (2012)
11. (陳昱邵、沈俊廷) Minozzi and Woon (2016)
12. Vespa and Wilson (2016)
13. Battaglini and Makarov (2014)
14. Burchardi and Penczynski (2014)
15. De Groot Ruiz, Offerman and Onderstal (2015)
16. Wood (2015)
17. Jin, Luca and Martin (2015)
18. Lai and Lim (2012)
19. Sanchez-Pages and Vorsatz (2007)
20. Hurkens and Kartik (2009)

Paper List:

1. Dickhaut, McCabe and Mukherji (1995), "An Experimental Study of Strategic Information Transmission," *Economic Theory*, 6(3), 389-403.
    a. Crawford and Sobel (1982), "Strategic Information Transmission," *Econometrica*, 50(6), 1431-1451.
2. Cai and Wang (2006), "Overcommunication in Strategic Information Transmission Games," *Games and Economic Behavior*, 56(1), 7-36.
    a. Crawford (2003), "Lying for Strategic Advantage: Rational and Boundedly Rational Misrepresentation of Intentions," *American Economic Review*, 93(1), 133-149.
3. Wang, Spezio and Camerer (2010), "Pinocchio's Pupil: Using Eyetracking and Pupil Dilation to Understand Truth telling and Deception in Sender-Receiver Games," *American Economic Review*, 100(3), 984-1007.

   a. Costa-Gomes and Crawford (2006), "Cognition and Behavior in Two-Person Guessing Games: An Experimental Study," *American Economic Review*, 96(5), 1737-1768.

4. Lai, Lim and Wang (2015), "An Experimental Analysis of Multidimensional Cheap Talk," *Games and Economic Behavior*, 91, 114-144.

   a. Battaglini (2002), "Multiple Referrals and Multidimensional Cheap Talk," *Econometrica*,70(4), 1379-1401.

   b. Ambrus and Takahashi (2008), "Multi-sender cheap talk with restricted state spaces," *Theoretical Economics*, 3(1), 1-27

5. Battaglini, Lai, Lim and Wang (2016), "The Informational Theory of Legislative Committees: An Experimental Analysis," mimeo.

   a. Gilligan and Krehbiel (1989), "Asymmetric Information and Legislative Rules with a Heterogeneous Committee," *American Journal of Political Science*, 33(2), 459-490.

   b. Krishna and Morgan (2001), "Asymmetric Information and Legislative Rules: Some Amendments," *American Political Science Review*, 95(2), 435-452.

   c. Krishna and Morgan (2001), "A Model of Expertise," *Quarterly Journal of Economics*, 116(2), 747-775.

   d. Krehbiel (2001), "Plausibility of Signals by a Heterogeneous Committee," *American Political Science Review*, 95(2), 453-457.

6. Blume, DeJong, Kim, Sprinkle (2001), "Evolution of communication with partial common interest," *Games and Economic Behavior*, 37(1), 79-120.

   a. Blume, DeJong, Kim, Sprinkle (1998), "Experimental Evidence on the Evolution of Meaning of Messages in Sender-Receiver Games," *The American Economic Review*, 88(5), 1323-1340.

7. Blume, De Jong, Neumann and Savin (2002), "Learning and communication in sender-redeiver games: an economic investigation," *Journal of Applied Econometrics*, 17(3), 225-247.

8. Kawagoe and Takizawa (2009), "Equilibrium refinement vs. level-k analysis: An experimental study of cheap-talk games with private information," *Games and Economic Behavior*, 66(1), 238-255.

9. Gneezy (2005), "Deception: The Role of Consequences," *American Economic Review*, 95(1), 384-394.

10. Erat and Gneezy (2012), "White Lies," *Management Science,* 58(4), 723-733.

11. Minozzi and Woon (2016), "Competition, preference uncertainty, and jamming: A strategic communication experiment," *Games and Economic Behavior*, 96, 97-114.

12. Vespa and Wilson (2016), "Communication with multiple senders: An experiment," *Quantitative Economics*, 7(1), 1-36.

13. Battaglini and Makarov (2014), "Cheap talk with multiple audiences: An experimental analysis," *Games and Economic Behavior*, 83, 147-164.
    a. Farrell and Gibbons (1989), "Cheap Talk with Two Audiences," *The American Economic Review*, 79(5), 1214-1223.
    b. Goltsman and Pavlov (2010), "How to talk to multiple audiences," *Games and Economic Behavior*, 72(1), 100-122.
14. Burchardi and Penczynski, (2014) "Out of your mind: Eliciting individual reasoning in one shot games," *Games and Economic Behavior*, 84, 39-57.
15. De Groot Ruiz, Offerman and Onderstal (2015), "Equilibrium selection in experimental cheap talk games," *Games and Economic Behavior*, 91, 14-25.
16. Wood (2015), "Vague Messages in Biased Information Transmission: Experiments and Theory," mimeo.
17. Jin, Luca and Martin (2015), "Is No News (Perceived as) Bad News? An Experimental Investigation of Information Disclosure," NBER Working Paper 21099.
18. Lai and Lim (2012), "Authority and communication in the laboratory," *Games and Economic Behavior*, 74(2), 541-560.
19. Sanchez-Pages and Vorsatz (2007), "An experimental study of truth-telling in a sender–receiver game", *Games and Economic Behavior*, 61(1), 86-112.
    a. Sánchez-Pagés and Vorsatz (2009), "Enjoy the silence: an experiment on truth-telling," *Experimental Economics*, 12(2), 220-241.
20. Hurkens and Kartik (2009), "Would I lie to you? On social preferences and lying aversion," *Experimental Economics*, 12(2), 180-192.
    a. Kartik (2009), "Strategic communication with lying costs," *Review of Economic Studies*, 76(4), 1359-1395.

Experimental Economics I-A: Behavioral Game Theory (Also on Coursera)
13. Experimental Economics and Behavioral Game Theory (BGT Ch.1; Wang notes)
14. Risk and Time Preferences (Holt, Ch.4, Liu, Meng and Wang, 2014)
15. Basic Principles of Experimental Design (BGT A1.2)
16. Social Preferences: Ultimatum, Dictator and Trust Games (BGT, Ch.2; new Handbook chapter, Review for Ultimatum, Dictator and Trust Games)
17. Mixed-Strategy Equilibrium (BGT, Ch. 3; Ostling et al., 2011)
18. Bargaining (BGT, 4)
19. Dominant Solvable Games (BGT, Ch. 5)
20. Level-k Model (Crawford et al., JEL 2013)