

Syllabus for Experimental Economics I: Behavioral Game Theory

Class Time: Tuesday 9:10am-12:10pm, at Social Sciences 608 (社科 608 教室)

Instructor: Joseph Tao-yi Wang ([josephw“at”ntu.edu.tw](mailto:josephw@ntu.edu.tw)) Office: Social Sciences 754/316

Office Hours: Tuesday 12:10-1:00pm after class or by email appointment

Class Website: http://homepage.ntu.edu.tw/~josephw/experimental_24S.htm

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 also expected to perform replication and present them. Specific goals of this course include:

1. Introduction to Experimental Economics: After this class, students are expected to name classic experiments in each field of economics and describe how their results affirm (or differ from) economic theory and relate to field data.
2. Evaluate Current Research: After this class, students are expected to develop the ability to read journal articles in experimental economics and evaluate their quality. Each week students are expected to read assigned journal articles, complete problem sets in preparation for the final quiz. They will also form groups to present one paper in class and replicate its results in a final report.
3. Experimental Design: After this class, students are expected to understand how experiments are run and designed. Students may also write a research proposal to:
 - a. Propose an economic experiment (and write sample instructions) which has:
 - i. Real Incentives (so choices have real consequences),
 - ii. A Good Control Group (to compare with Treatment group),
 - iii. Random Assignment (to the Treatment and Control groups),
 - iv. No deception (to establish reputation so real incentives are believed).
 - b. Argue why should we care about this experiment and why the experiment is designed this way (compared to other possible designs), and,
 - c. Relate your experiment to existing literature (if any) and describe expected results and/or methods to analyze the data with appropriate power analysis.

Textbooks:

1. Camerer (2003), [Behavioral Game Theory](#), Princeton University Press. (BGT)
2. Moffatt (2019), [Experimetrics Lecture Notes](#) for NTU mini-course. (EMT)

Other Recommended Reading:

3. Holt (2019), [Markets, Games and Strategic Behavior: An Introduction to Experimental Economics](#), Princeton University Press. (Undergraduate textbook)
4. Moffatt (2016), *Experimetrics: Econometrics for Experimental Economics*, Palgrave.
5. Riley (2012), *Essential Microeconomics*, Cambridge University Press. (EM).
6. Mas-Colell, Whinston and Green (1995), *Microeconomic Theory*, Oxford UP. (MWG)

7. Kagel and Roth, ed. (1995, 2016), [Handbook of Experimental Economics, Vol. 1](#) and [Vol. 2](#), Princeton University Press (EE1, EE2).
8. Capra, Croson, Rigdon and Rosenblat, ed. (2020), [Handbook of Experimental Game Theory](#), Edward Elgar Publishing. (EGT)

Note: First-time presenters should consult “[Oral Presentation Evaluation Criteria and Checklist](#)” for components that form a good presentation and specific areas you should provide feedback. Wei-jen Hsu’s blog also has a step-by-step recipe on [How to Prepare a 20-minute Presentation in 20 hours \(aka 關於 presentation 的一些想法\)](#).

Assignments:

1. Homework and Quiz (40%): Weekly problem sets in BGT are assigned, from which questions are (randomly) selected to appear in the final quiz on 5/28.
2. Estimation Exercise (15%): Perform estimation exercises in *Experimetrics for EMT*.
3. Group Presentation (25%): 20-minute oral presentation of one assigned paper (15%).
4. Feedback (10%): Provide weekly feedback to others (10%).
5. Group Replication (20%): Submit replication package for assigned paper (due 6/4).
The TA will run the package according to your README files to confirm.

In lieu of group presentation (15%) and replication package (20%), one may instead present and submit their own experimental proposal (<4 pages) (35%; due 6/4).

Course Outline:

1. [2/20] Experimental Economics and Behavioral Game Theory ([BGT, Ch.1](#); [Holt](#); [Wang](#));
Experimetrics and Power Analysis (EMT, Ch.1-2)
2. [2/27] Risk and Time Preferences (Holt, Ch.3); Basic Principles of Experimental Design (BGT, A1.2); Estimation of Risk Aversion Parameter: Binary Lottery (EMT, Ch.3)
3. [3/ 5] Social Preferences (BGT, Ch.2; [HEE2, Ch.4](#); [UG](#), [DG](#), [Trust](#); [Lin-20](#));
Estimating Risk Aversion: Ultimatum/Estimating Social Preferences (EMT, Ch.4)
4. [3/12] Mixed-Strategy Equilibrium (BGT, Ch.3); Estimating QRE (EMT, Ch.16)
5. [3/19] Bargaining (BGT, Ch.4)
6. [3/26] Dominant Solvable Games (BGT, Ch.5)
7. [4/ 2] Multi-Agent Contracting (by Eyal Winter)
(4/2-11: Mini-Course in Multi-Agent Contracting taught by Eyal Winter)
8. [4/ 9] Experimental Evidence of Multi-Agent Contracting (by Eyal Winter)
9. [4/16] Level-k Thinking ([Crawford-13](#)); Finite Mixture Models (EMT, Ch. 5, 17.3)
10. [4/23] Learning (BGT, Ch.6; [HEE2, Ch.10](#)); Estimating Learning (EMT, Ch.18)
11. [4/30] Coordination (BGT, Ch.7)
12. [5/ 7] Signaling and Reputation (BGT, Ch.8)
13. [5/14] Research Paper Presentation
14. [5/21] Replication Report Presentation
15. [5/28] Final Quiz [6/ 4] Replication Report Due

Paper Replication List:

1. ^Andersen, Ertaç, Gneezy, Hoffman and List (2011) "[Stakes Matter in Ultimatum Games](#)," *American Economic Review*, 101(7), 3427-3439. ([Andersen-11](#)) ([Jupyter](#))
2. *Saccardo and Serra-Garcia (2023), "[Enabling or Limiting Cognitive Flexibility? Evidence of Demand for Moral Commitment](#)," *American Economic Review*, 113(2), 396-429. ([SSG-23](#))
3. *Lin, Brown, Imai, Wang, Wang and Camerer (2020), "[Evidence of General Economic Principles of Bargaining and Trade from 2,000 Classroom Experiments](#)," *Nature Human Behaviour*, 4(9), 917-927. ([Lin-20](#))
4. *Ostling, Wang, Chou and Camerer (2011), "[Testing Game Theory in the Field: Swedish LUPI Lottery Games](#)," *American Economic Journal: Microeconomics*, 3(3), 1-33. ([Ostling-11](#))
5. *Mohlin, Ostling and Wang (2020), "[Learning by Similarity-weighted Imitation in Winter-takes-all Games](#)," *Games and Economic Behavior*, 120, 225-245. ([Mohlin-20](#))
6. **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. ([Wang-10](#))
7. **Chen, Huang and Wang (2018), "[A Window of Cognition: Eyetracking the Reasoning Process in Spatial Beauty Contest Games](#)," *Games and Economic Behavior*, 111, 143-158. ([CHW-18](#))
8. **He, Analytis and Bhatia (2022), "[The Wisdom of Model Crowds](#)," *Management Science*, 68(5), 3635-3659. ([He-22](#))
9. **Battaglini, Lai, Lim and Wang (2019), "[The Information Theory of Legislative Committees: An Experimental Analysis](#)," *American Political Science Review*, 113(1), 55-76. ([BLLW-19](#))
10. **Cai and Wang (2006), "[Overcommunication in Strategic Information Transmission Games](#)," *Games and Economic Behavior*, 56(1), 7-36. ([Cai-06](#))
11. ***Liu, Meng and Wang (2014), "[Confucianism and Preferences: Evidence from Lab Experiments in Taiwan and China](#)," *Journal of Economic Behavior & Organization*, 104, 106-122. ([Liu-14](#))
12. ***Chen, Lin, Nave, Smith, Camerer, Wang (2022), "[Using Machine Learning to Understand Bargaining Experiments](#)," Chapter 19 of *Bargaining: Current Research and Future Directions*, edited by Emin Karagözoğlu and Kyle Hyndman, Palgrave MacMillan, 407-431. ([Chen-22](#))
13. ***Knoepfle, Wang and Camerer (2009), "[Studying Learning in Games Using Eye-Tracking](#)," *Journal of the European Economic Association*, 7(2-3), 388-398. ([KWC-09](#))
14. ***Lai, Lim and Wang (2015), "[An Experimental Analysis of Multidimensional Cheap Talk](#)," *Games and Economic Behavior*, 91, 114-144. ([LLW-15](#))