Yangbo (Darcy) SONG

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Research Interests:

Network Economics, Mechanism Design, Contract Theory, Game Theory

EDUCATION:

University of California, Los Angeles

• Ph. D., Economics, June 2015; M. A., Economics, 2012

Advisors: Ichiro Obara (Chair), William Zame, Moritz Meyer-Ter-Vehn, Alexander Stremitzer

University of Hong Kong

• B. A., Economics and Finance (minor in Statistics), 2010

JOB MARKET PAPERS:

• "Social Learning with Coordination Motives"

The theoretical study of social learning typically assumes that each agent's action affects only her own payoff. In this paper, I present a model in which agents' actions directly affect the payoffs of other agents. On a discrete time line, there is a community containing a random number of agents in each period. Before each agent needs to take an action, the community receives a private signal about the underlying state of the world and may observe some past actions in previous communities. An agent's payoff is higher if her action matches the state or if more agents take the same action as hers. I analyze two observation structures: exogenous observation and costly strategic observation. In both cases, coordination motives enhance social learning: when the community can be potentially large, asymptotic learning or almost asymptotic learning occurs. I then discuss the issue of multiple equilibria and use risk dominance as a selection criterion. I find that in the selected equilibria, the community size has no effect on learning under exogenous observation and costly observation and unbounded private beliefs, and either helps or hinders learning under endogenous observation and bounded private beliefs.

• "Social Learning with Endogenous Network Formation", revise and resubmit, JET

I study the problem of social learning in a model where agents move sequentially. Each agent receives a private signal about the underlying state of the world, observes the past actions in a neighborhood of individuals, and chooses her action attempting to match the true state. Existing literature shows that with unbounded private beliefs, asymptotic learning occurs if and only if agents observe a close predecessor. However, a prevailing assumption in these studies is that the observation structure is exogenous. In contrast to most of the previous literature, I assume in this paper that observation is endogenous and costly. More specifically, each agent must pay a cost to make any observation and can strategically choose the set of actions to observe privately. I introduce the notion of maximal learning (relative to cost) as a natural extension of asymptotic learning: society achieves maximal learning when agents can learn the true state with probability 1 in the limit after paying the cost. I show that observing only a close predecessor is no longer sufficient for learning the true state with unbounded private beliefs and positive costs. Instead, maximal learning occurs if and only if the size of the observations extends to infinity. Interestingly, the learning probability may be higher when the cost is positive than when it is zero, and different timing schemes of information acquisition lead to different learning patterns.

PUBLICATIONS:

- "Dynamic Network Formation with Incomplete Information," with Mihaela van der Schaar, *Economic Theory*, 59(2) (2015): 301-331.
- "Sharing in Networks of Strategic Agents," with Jie Xu and Mihaela van der Schaar, IEEE J. Sel. Topics Signal Process. – Special Issue on "Signal Processing for Social Networks" 8(4) (2014): 717-731.
- "Incentivizing Information Sharing in Networks," with Jie Xu and Mihaela van der Schaar, 2014 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP).

WORKING PAPERS:

- "Dynamic Network Formation with Foresighted Agents," with Mihaela van der Schaar, revise and resubmit, *Theoretical Economics*
- "Foresighted Network Formation and Network Games," with Mihaela van der Schaar
- "Why Scientists Chase Big Problems/Hot Topics: Individual Strategy and Social Optimality," with Jacob Foster and Carl Bergstrom
- "Replication and Publication Bias," with Jacob Foster, Carl Bergstrom and Mark Tanaka
- "Contracting with Externality and Asymmetric Information"
- "Sequential Contracting with Externality and Asymmetric Information"

EXPERIENCE:

TEACHING

Instructor

• ECON 106P (Pricing and Strategy), Summer 2014

Graduate Course Teaching Assistant

• ECON 201B (Game Theory, instructors: Simon Board and Moritz Meyer-Ter-Vehn), Winter 2013

Undergraduate Course Teaching Assistant

- ECON 11 (Microeconomic Theory), Fall 2011 and Fall 2012
- ECON 41 (Statistics for Economists), Spring 2012
- ECON 101 (Microeconomic Theory), Winter 2012, Fall 2013 and Winter 2014
- ECON 102 (Macroeconomic Theory), Spring 2014

RESEARCH

Postdoctoral Researcher (UCLA Sociology Department, Summer 2015 - present)

- Supervisor: Prof. Jacob Foster
- Project: Theory of Games and Scientific Behavior

Research Assistant (UCLA Electrical Engineering Department, Spring 2013)

- Supervisor: Prof. Mihaela van der Schaar
- Project: Network Formation with Incomplete Information

LANGUAGE AND PROGRAMMING:

- Language: English/Chinese (Mandarin)/Chinese (Cantonese)
- Programming: MATLAB

CONFERENCES:

2015 Southern California Symposium on Network Economics and Game Theory (UCLA)

 Presentation: "Why Scientists Chase Big Problems/Hot Topics: Individual Strategy and Social Optimality."

2015 Metaknowledge Summer Conference

2014 Southwest Economic Theory Conference (UCI)

• Presentation: "Dynamic Network Formation with Incomplete Information."

2013 Southern California Symposium on Network Economics and Game Theory (UCLA)

• Presentation: "Dynamic Network Formation with Incomplete Information."

HONORS AND AWARDS:

- Dissertation Year Fellowship, 2014 2015
- Teaching Assistantship, 2011 2014
- Honors Pass in the Comprehensive Exam in Microeconomics, 2011
- First-Class Honors, University of Hong Kong, 2010
- Dean's Honors List, University of Hong Kong, 2008 2010

PLACEMENT DIRECTORS:

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REFERENCES:

• Ichiro Obara (Associate Professor, UCLA Economics Department)

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- Mihaela van der Schaar (Professor, UCLA Electrical Engineering Department) Phone: +1-310-825-5843. Email: mihaela@ee.ucla.edu.
- Jacob Foster (Assistant Professor, UCLA Sociology Department)

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