

# Fatemeh Borhani

+1 (785) 477 7655 • fzb5027@psu.edu  
www.personal.psu.edu/fzb5027/

## Education

<b>Pennsylvania State University</b> <i>PhD Economics,</i>	<b>State College, PA</b> <i>2016 (expected)</i>
<b>Sharif University of Technology</b> <i>M.A. Economics,</i>	<b>Tehran, Iran</b> <i>2010</i>
<b>Sharif University of Technology</b> <i>B.S. Physics,</i>	<b>Tehran, Iran</b> <i>2007</i>

## Research interests

Micro Theory, Decision Theory, Game Theory

## References

Edward Green(chair) (814) 308-0118 eug2@psu.edu	Kalyan Chatterjee (814) 865-6050 kchatterjee@psu.edu	Henrique de Oliveira (847) 414-2603 hzd1@psu.edu	David Shapiro(teaching) (814) 863-1533 dshapiro@psu.edu
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## Research assistantships

Professor Edward Green, Spring 2013, Spring and Fall 2015

## Experience

Visiting Scholar.....

- Math Center, Kellogg School of Management Northwestern University , May 12 2014 - June 12 2014

Conference presentations.....

- Long-Run Implications of Maximizing Posterior Expected Utility (with Edward Green)
  - The 25th International Conference on Game Theory, Stony Brook University, Summer 2014
- A generalization of probabilistic sophistication that permits ambiguous beliefs
  - Cornell-Penn State Macro Workshop, Cornell University, Fall 2015.
  - Midwest Economic Theory Meeting, Pennsylvania State University, Fall 2015

## Teaching experience

Teaching.....

- Game Theory, Nedaye Zeinab High School, Tehran, Iran, Fall 2008-Spring 2009

Teaching assistantships.....

- Labor Economics, Pennsylvania State University, Spring 2014
- Monetary Theories, Pennsylvania State University, Fall 2013

- Microeconomic Analysis, Pennsylvania State University, Fall 2012, Spring 2011 and Fall 2010

## Research papers

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### Working papers.....

#### **A Generalization of Probabilistic Sophistication that Permits Ambiguous Beliefs:** (job market paper)

- Abstract: Probabilistic sophistication is about when preferences of a decision maker are consistent with beliefs in the form of a single probability distribution on the state space. In this notion of rational behavior, there is no role for ambiguous beliefs, by which I mean that when a decision maker conceives that the state of nature is governed by some distribution but is uncertain what that distribution is. In this study I generalize the notion of probabilistic sophistication to permit for ambiguous beliefs. I formulate axioms on preferences among acts that are necessary and sufficient for existence of a multiple prior representation satisfying generalized probabilistic sophistication. These axioms do not include a controversial axiom, state monotonicity, that has previously been imposed in related research.

#### **A Parsimonious Theory of Evidence-Based Choice:** (with Edward Green)

- Abstract: Primitive entities of the theory are a body of evidence available to an agent (called an evidential state) and an alternative in a set, from which the agent might choose. Assumptions are stated regarding the space of possible evidential states. Under those assumptions, while the space of evidential states is not necessarily a Boolean algebra, it can be embedded in a structure-preserving way into a canonical sigma-field of events. A plan is a mapping from evidential states to choice alternatives. A consistency condition for plans, reminiscent of Savage's sure-thing principle, is formulated. The condition is neither necessary nor sufficient for the plan to be rationalized by subjective-utility maximization with respect to a probability measure on the canonical sigma-field. A structure of evidential states may contain, or coincide with, a substructure that models a process of experimental learning. A plan specified on such a substructure satisfies the consistency condition if, and only if, it can be rationalized by maximization of subjective conditional expected utility.

#### **Gender Ratio and Intra-Household Collective Decision Process: Evidence from Iranian Households Labor Supply:**

- Abstract: This study investigates the effects of gender ratio (broken into age groups) on married female and male labor supply in Iran. The data that is used consists of a micro level panel following a sample of about seven thousand families for three consecutive years. Our results show gender ratio (female population to male population), has a positive effect on married female labor supply while it affects negatively married male labor supply. We interpreted our results using a collective family labor supply model. The employed family labor supply model incorporates an intra-household bargaining model.

### Work in progress.....

#### **Representing preferences over acts as preferences over sets of lotteries :**

- Abstract: This paper provides necessary and sufficient conditions for a preference relation to be representable with a set of priors and a utility function over sets of lotteries. Such that the set of implied lotteries of an act is enough statistic to evaluate that act. This study bridges between subjective and objective ambiguity literature.

#### **How to play against someone more sophisticated than yourself:**

- Abstract: Consider a game of chess. Perhaps you would play differently against a grandmaster and someone whom you consider to be only as good as yourself. The current benchmark model of such a situation, the level-k rationality model (Introduced by Stahl and Wilson (1994, 1995) and Nagel (1995)), can not handle this situation in which a player recognizes that her opponent is smarter than she is. The goal of this study is to develop a frame work in which a player can conceptualize others being more sophisticated than herself and potentially react to it. I do this by modifying a Bayesian cognitive model and solution concept for bounded rationality formulated by Kets (2014) to encompass ambiguity as well as risk. Then I analyse the resulting model in a way related to my paper titled "A Generalization of Probabilistic Sophistication that Permits Ambiguous Beliefs".

**Asymmetric sophistication and market failure: how to (not) play against someone smarter than you:** (with Bruno Salcedo and Sergii Golovko )

- Abstract: We model a novel cause for market failure. In our framework, agents might opt-out from potentially profitable interactions because of an intrinsic asymmetry in strategic sophistication. Namely, some agents might be concerned that their opponents could anticipate their behavior and use this to their disadvantage. Such concerns could arise in a wide range of economic situations including joint ventures between asymmetric partners, stock markets and marketing. We measure the efficiency loss due to sophistication asymmetry in terms of the maximum gains of trade that an unsophisticated agent is willing to forgo to protect himself from being exploited by more sophisticated opponents. We analyze how this measure depends on the payoffs of the game, and the distribution of sophistication types.

**Smooth ambiguity and regret matching:** (with Pathikrit Basu and Bruno Salcedo)