ICES 5th Annual Conference on Behavioral and Experimental Economics

George Mason University
Arlington, Virginia

Thursday, May 14, 2015
8:00 am - 8:30 am  Breakfast (Founders Hall 118)

8:30 am – 8:35 am  Opening Remarks (Founders Hall 118) Daniel Houser, Director, ICES, Chair, Department of Economics, and Professor, Economics, George Mason University

8:35 am - 9:20 am  Plenary Talk (Founders Hall 118) Cary Deck, Professor at Department of Economics, University of Arkansas

9:35 am – 10:20 am  Editor’s Talk (Founders Hall 118) Laura Razzolini, Editor of Southern Economic Journal, Professor at Department of Economics, School of Business, Virginia Commonwealth University

10:20 am – 10:40 am  Coffee Break

10:40 pm -12:00 pm  Session 1 & Session 2

Session 1: Job Market and Matching (Founders Hall 210)
- David Powers, An Endogenous Job Contact Network in the Laboratory
- Tingting Ding, An Experimental Study of the Impact of Network: Communication on School-Matching Mechanisms
- Sherry Xiaoxue Gao, Job Market Signaling: Education as an Imperfect Signal in Labor Market
- Ahrash Dianat, Truncation in Matching Markets: Experimental Evidence

Session 2: Experiments in the Field (Founders Hall 118)
- Sheheryar Banuri, Mis-prescribing treatments in healthcare: the role of incentives and motivation
- Sera Linardi, The Price of Religion: Experiments in Willingness to Bear Risk For Others in Islamic Communities
- Shagata Mukherjee, Gender and Group Liability in Microfinance Experiment
- Shuwen Li, On Stochastic Bargaining: Equilibrium and Efficiency

12:00 am – 12:50 pm  Lunch

12:50 pm - 2:10 pm  Session 3 & Session 4

Session 3: Trust and Cooperation (Founders Hall 113)
- Chenna Reddy Cotla, Stability of Social Preference in Public Goods Games
- Greg Leo, Volunteers' Dilemmas
- Seung (Ginny) Choi, It Pays to be Trustworthy: An Experiment on Markets and Formation of Social Relationships
Session 4: Communication (Founders Hall 118)
- Daniel H. Wood, Vague Messages in Biased Information Transmission: Experiments and Theory
- Arjun Sengupta, Promises and Guilt
- Jean Paul Rabanal, Does market structure affect truth-telling? An experiment with rating agencies
- Siyu Wang, Demanding or Deferring? The Economic Value of Communication with Attitude

2:10 pm - 2:35 pm Coffee Break

2:35 pm - 3:55 pm Session 5 & Session 6

Session 5: Games (Founders Hall 113)
- John Smith, Cognitive Load and Strategic Sophistication
- Adam Dominiak, Malevolent and benevolent urns: The Ellsberg task as a game
- Dimitry Mezhvinsky, Thoughtful Play in the Centipede Game: Evolving Beliefs and Falling Pass Rates
- Laura Razzolini, How Well Does Evolutionary Theory Predict Evolution of Play in Infinitely Repeated Prisoner’s Dilemma Games in the Laboratory?

Session 6: Risk, Ambiguity and Confidence (Founders Hall 118)
- Jennifer Pate, Cost Asymmetry and Uncertainty in an Experimental Volunteer’s Dilemma
- Andrew Kloosterman, Cooperation in Stochastic Games: A Prisoner’s Dilemma Experiment
- Sining Wang, The Role of Risk Aversion and Cautiousness on Explaining Individual Behavior in a Repeated Coordination Game
- Klajdi Bregu, The Impact of Overconfidence in Acquiring Information

3:55 pm – 4:05 pm Coffee Break

4:05 pm – 5:05 pm Session 7 & Session 8

Session 7: Preferences and Bounded Rationality (Founders Hall 113)
- Ryan Kendall, Decomposing Models of Bounded Rationality
- Aleksandr Alekseev, Rational Indolence
- Mikhail Freer, Revealed difference

Session 8: Gender (Founders Hall 118)
- Maria P. Recalde, Breaking the glass ceiling with "No": Gender differences in accepting and receiving requests for non-promotable tasks
- Charles A. Holt, *Price Bubbles and Gender in Asset Markets with a Flat Fundamental Value*
- Johanna Mollerstrom, *Gender, Competitiveness and Stress – Correlation and Causality*

**5:05 pm – 5:15 pm**  Coffee Break

**5:15 pm – 6:15 pm**  Session 9 & Session 10

Session 9: Corruption (Founders Hall 113)
- Brian D. Kluger, *Fraudulent Misreporting and the Business Cycle: An Experimental Investigation*
- Ann B. Gillette, *Willingness to Pay Sovereign Debt: Does Type of Renegotiation Clause Matter?*
- Ozlem Tonguc, *Vote Buying with Cash vs. Promises*

Session 10: Collusion and Mispricing (Founders Hall 118)
- Shakun Mago, *Collusion with Private Information: An Experiment on the Role of Side Payments*
- David Schindler, *Unleashing Animal Spirits - Self-Control and Overpricing in Experimental Asset Markets*
- Amos Nadler, *Testosterone and Trading: A Biological Driver of Asset Mispricing*

**6:15 pm – 8:30 pm**  Happy Hour at Tara Temple Restaurant
**ICES:**
The Interdisciplinary Center for Economic Science (ICES) brings together researchers and students interested in using the methods of experimental economics to answer research questions from a variety of fields. Using both laboratory and field experiments, research at ICES has been conducted in such areas as public choice, development, bargaining, neuroscience, and economic systems design (ESD). The Center was founded in 2001 by Vernon Smith (2002 Nobel Laureate in Economics). Our center full-time faculty includes Dan Houser, Marco Castillo, David Eil, Cesar Martinelli, Kevin McCabe, Johanna Mollerstrom, Ragan Petrie, Thomas Stratmann.

**Addresses:**
Founders Hall is located at 3351 Fairfax Dr., Arlington, VA 22201
Tara Temple Restaurant is located at 4001 Fairfax Dr, Arlington, VA 22203

**Keynote Speakers:**
Cary Deck is Professor at Department of Economics, Arkansas University, Research Professor of Economic Science Institute, Director of Behavioral Business Research Laboratory, Co-Editor of Southern Economic Journal and Associate Editor of Journal of Behavioral and Experimental Economics

Laura Razzolini is Editor of Southern Economic Journal, Professor at Department of Economics, School of Business, Virginia Commonwealth University
Abstracts:

An Endogenous Job Contact Network in the Laboratory

David Powers
ICES, Economics Department, George Mason University

ABSTRACT:
Jobs are commonly found through social contacts, and certain labor market conditions, such as the job turnover rate and rate of job creation, may have measurable impact for social networking choice. This work provides a laboratory test of Galeotti and Merlino “Endogenous Job Contact Network” model (IER 2014), a theory which predicts a non-monotonic increasing and then decreasing relation between the job separation rate and both the level of network investment and networking job matching rate. Results are presented for both a direct lab implementation of the theory as well as for a highly-incentivized version in which workers earn much higher wages if the job is found through the network versus if the job is received exogenously. Results are also disaggregated and tested by the extent of information given, by the extent of experience of the subjects, and by summary characteristics of the subjects. Related extensions for suggested future work are also discussed.

Authors: David Powers and Daniel Houser

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An Experimental Study of the Impact of Network: Communication on School-Matching Mechanisms

Tingting Ding
New York University

ABSTRACT:
While, in theory, the school matching problem is a static non-cooperative one-shot game, in reality the matching game is played by parents who choose their strategies after consulting or chatting with other parents in their social networks. In this paper we compare the performance of the Boston and the Gale-Shapley mechanisms in the presence of chatting through social networks. Our results indicate that allowing subjects to chat has an important impact on the strategies they choose and is welfare increasing. In addition, chatting appears to enhance the rationality of subjects and the stability of the matching outcomes.

Authors: Tingting Ding and Andrew Schotter

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Job Market Signaling: Education as an Imperfect Signal in Labor Market

Sherry Xiaoxue Gao
Department of Economics, Andrew Young School of Policy Studies, Georgia State University

ABSTRACT:
Inspired by the phenomenon of dropouts among educational programs, this paper extends Spence’s story of signaling by introducing the probability of dropout into the model. Assuming higher ability individuals have lower chances of dropping out of an education program, the paper first discusses the Bayesian equilibria in the job market, and further refines the potential equilibria with the Cho-Kreps notion of equilibrium dominance. Given the cost of education and the distribution of abilities in worker population, if the dropout risk is sufficiently different for high and low ability workers, this job market will arrive at a stable equilibrium in which high ability workers separate themselves from the low ability ones by pursuing a higher education attainment. Although derived under the assumption of risk neutrality, this prediction will still hold if workers are moderately risk averse, with only a change of requirement on the difference in dropout rates. To test if people will actually play this separating equilibrium, the paper will report and analyze subjects’ decisions in a simulated job market in the laboratory with controls on the relevant parameters. To see the effects of risk attitudes, subjects’ risk attitudes will be elicited and used to account for their decisions. The experiments haven’t been carried out, but according to a pilot among 20 undergraduate students in the Experimental Economics Lab of Georgia State University, the market indeed converged to the described separating equilibrium quickly. The plan for this project is to collect more data from running treatments with different parameterization on worker’s population for a statistically robust conclusion.

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Truncation in Matching Markets: Experimental Evidence

Ahrash Dianat
ICES, Economics Department, George Mason University

ABSTRACT:
The theoretical literature on two-sided matching markets has focused on “truncation” strategies in which participants pretend that they would rather be unmatched than be matched to less preferred partners. Since the underlying preferences of participants are not observable in field settings, the empirical content of truncation strategies has remained largely unexplored. We conduct a laboratory experiment to determine whether subjects truncate their preferences and whether truncation behavior is sensitive to key market features. We find that truncation behavior is not common. The modal strategy involves a manipulation of preferences in which subjects switch their order of preference between different match partners. Moreover, about one-third of subjects play a dominated
strategy where they rank their most preferred partner in a lower position.

Authors: Marco Castillo, Ahrash Dianat

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Mis-prescribing treatments in healthcare: the role of incentives and motivation

Sheheryar Banuri
Development Research Group, The World Bank

ABSTRACT:
Health clinics in developing countries often provide both diagnoses and treatments for patients, and often profit from treatment costs in addition to charging fees for consultations. This creates a moral hazard problem, arising due to the asymmetry of information between doctors and patients. Doctors may make treatment decisions based on profits generated from the treatments, rather than the wellbeing of the patient. However, this is mitigated by the motivation of the physician, as those that care about their work are less likely to prescribe the wrong treatment. We test the extent to which profits influence treatments prescribed by healthcare providers. Using data from over 380 advanced doctor and nursing students in Burkina Faso, and a novel real effort task which requires medical knowledge, we vary whether subject earnings are based on profits from treatments they prescribe to patients, or a flat salary unrelated to treatments. We find that the presence of treatment profits influences the accuracy of treatments prescribed, and it is particularly concentrated in the least motivated group. Implications for policy are discussed.

Authors: Sheheryar Banuri and Philip Keefer

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The Price of Religion: Experiments in Willingness to Bear Risk For Others in Islamic Communities

Sera Linardi
Graduate School of Public and International Affairs at the University of Pittsburgh

ABSTRACT:
Choices that benefit oneself are often in tension with what is regarded to be right or ethical by legal rules, social norms, or religious beliefs. While we know that religious framing can induce individuals to donate more charitably, it is unknown whether the influence of religion extends to prosocial actions that involve bearing risks for others. Furthermore, we do not know whether the influence of religion is similar when individuals are voting on a decision that will be imposed on the entire community as when it affects only the individual in question. In this paper, we experimentally
investigate the effect of the Islamic prohibition against lending with interest (IB) on the choice of Muslims to lend through profit sharing arrangement (PLS) that protects borrowers against bankruptcy.

We design an incentivized experiment that resembles the choice between IB and PLS in three settings: private decision, private voting, and public voting. The main objective of the experiment is to analyze how religious framing (a quote from Quran on the prohibition) affect choices in the three settings. We also collect extensive individual level data on risk attitude, religiosity, social preferences (altruism and trust), and demographics factors as control variables. Our first set of experiments with Muslims in Indonesia indicate that without religious priming, choices to take up risk for others largely respond as expected to opportunity costs (decreasing linearly in the forgone interest). Interestingly, religious prohibition has little effect when the alternative to sharing risk is charging low interests, but a large positive effect on the willingness to share risk when the alternative is charging very high interests. This suggests that religious framing is particularly effective when the choice between self interest and others’ wellbeing is very stark. The full set of experiments will be completed by January 2015 where data from Muslims in China and in the UAE may shed light on the on the generalizability of these findings and the mediating role of religious identity.

Authors: Sera Linardi, Rebbeca Morton, Kai Ou, Xiangdong Qin, Gumilang Sahadewo

Gender and Group Liability in Microfinance Experiment

Shagata Mukherjee
Georgia State University

ABSTRACT
Microfinance has emerged as one of the most important instruments in development policy in recent years. A typical microfinance loan contract includes multiple and overlapping mechanisms aimed at reducing the risk of default among the borrowers. The two lending innovations that have received a lot of attention are group liability and gender targeting. The aim of this paper is to analyze the effect of these two lending innovations using controlled field experimental method in Meghalaya, India. The paper attempts to answer if group liability loans and gender targeting lead to lower default rate. The paper also explores the question of whether a gender effect on repayment rate is robust across different societies. This can be tested by comparing the results of Khasi women (belonging to a matrilineal society in Meghalaya, India) with non-Khasi women (belonging to traditional patriarchal society). This analysis can be useful to understand whether nature or socio-economic conditionings has a larger impact on the behavior of the microfinance borrowers.

Authors: Shagata Mukherjee and Michael Price

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On Stochastic Bargaining: Equilibrium and Efficiency

Shuwen Li
ICES, Economics Department, George Mason University

ABSTRACT:
We design experiments to inform the Merlo and Wilson (1995) stochastic k-player sequential bargaining theory. In their model, both the size of the cake as well as the order in which players move follow a general Markov process. This environment has been widely used to explain the presence of a non-negligible frequency of economically costly agreement delays (Merlo, 1997; Eraslan, 2008; Simcoe, 2012). Despite its use and influence, no laboratory test of this theory has yet appeared. We design a two-player two-period stochastic bargaining game where the timing and efficiency of equilibrium agreement differ among treatments. Our design promises to shed light on how people reconcile delay with efficiency when negotiating in stochastic environments, and offer new evidence on the Merlo-Wilson (1995) framework.

Authors: Shuwen Li and Daniel Houser

Stability of Social Preference in Public Goods Games

Chenna Reddy Cotla
ICES, Economics Department, George Mason University

ABSTRACT:
Some individuals may be more likely to cooperate than others, and previous research has shown that heterogeneity in preferences and beliefs may help explain the fragility of cooperation in repeated linear public goods games. While the observed willingness to cooperate may vary within an environment, it is unclear if the distribution of willingness to cooperate is constant across environments. We use economic experiments to examine the stability of cooperative preferences in a one-shot strategy method environment and in a repeated game under different interaction topologies and marginal returns to cooperation. In addition, we assess whether expressed preferences from the one-shot environment can explain behavior in the repeated game. Our data yield several key findings. First, the price of cooperation matters. An individual's expressed cooperative preferences change as cooperation becomes more or less expensive. Second, the distribution of expressed preferences under different prices cannot be explained by several theories of social preferences. Third, assuming that an individual best responds to his beliefs, stated beliefs are better at explaining behavior in repeated games than estimated beliefs. Fourth, in general we find that expressed preferences from a one-shot game are poor predictors of choices in a corresponding repeated game environment. A model of reinforcement learning outperforms social preference models with belief learning in both fitting and predicting individual level choice in repeated games. Belief learning models with social preferences are no better in predicting individual decisions.
than random choice. These results are robust across both interaction topologies, and also across finitely and infinitely repeated games.

Authors: Chenna Reddy Cotla and Ragan Petrie  
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**Volunteers' Dilemmas**

Greg Leo  
Economics Department UCSB

ABSTRACT:  
For many tasks, the efforts of a single individual are sufficient to serve an entire group. In these circumstances, we might expect clustering into groups to be advantageous. However, there is a countervailing force. The returns to scale offered by larger groups are often offset by free-rider problems that grow with group size. Here, we explore these group free-rider problems in a series of theoretic and experimental investigations.

Authors: Ted Bergstrom, Greg Leo  
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**It Pays to be Trustworthy: An Experiment on Markets and Formation of Social Relationships**

Seung (Ginny) Choi  
ICES, Economics Department, George Mason University

ABSTRACT:  
We experimentally investigate whether certain features of market institutions within which trades occur matter for dyadic social relationships characterized by trust and trustworthiness. Understanding how particularized trust and trustworthiness interact with market institutions is crucial because social exchange systems are intricately intertwined with market exchange systems. We utilize a multi-treatment, two-task design based on Choi and Storr (2014) in which subjects are first placed in a market game with varying social distance and degrees of trade enforcement, followed by a trust game. Our preliminary results lend support to studies from the last two decades that posit a positive correlation between high-trust societies and their economic performance (Putnam 1993; Fukuyama 1995; Keefer and Knack 1997; La Porta et al. 1997; Zak and Knack 2001; Tabellini 2008; Guiso, Sapienza and Zingales 2009; Algan and Cahuc 2010). We find that complete trade enforcement can substitute personal experience in building trust within dyadic relationships and that social distance between buyers and sellers in the market play a small role in building this trust.

Authors: Seung (Ginny) Choi, Virgil Henry Storr  
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Vague Messages in Biased Information Transmission: Experiments and Theory

Daniel H. Wood
Clemson University

ABSTRACT:
Spoken language allows for rich communication, but the message spaces used in most cheap talk models and experiments are usually quite restrictive. I show theoretically that introducing vague messages into a strategic information transmission game a la Crawford and Sobel (1982) increases communication between boundedly rational players if some senders are moderately honest. My model treats vague messages as explicitly imprecise messages, e.g., ”the state is 1, 2, or 3” in contrast to a precise message, which might say ”the state is 2”. Senders would like to bias the receivers’ beliefs upwards. The introduction of vague messages causes more honest senders in some cases to send a truthful but vague message rather a precise lie. These message switches replace low-information lies with more informative message and in addition makes the remaining precise messages more informative as well, increasing how informative the average message is about the state. I test this prediction experimentally and find support for the hypothesis. 24% of messages are truthful in a treatment when only precise messages are possible, while 46% of messages are truthful in a treatment in which either message type can be sent. 23% of messages are believed credulously in the precise-only treatment, while 31% of messages are believed credulously in the precise or vague message treatment. Finally I structurally estimate the parameters of my model, allowing me to gauge the importance of honesty by considering counterfactuals in which no players are honest.

Promises and Guilt

Arjun Sengupta
The Ohio State University

ABSTRACT:
We use a lab experiment to explore if guilt-aversion is a reason behind promise-keeping. We modify the trust game in the following ways: 1) The second mover can send a free form message 2) the first mover can choose between three actions; an outside option, a less risky choice, or a more risky choice and 3) the second mover’s payoff from his action is the same whenever the first mover chooses the less risky or the more risky option. These modifications make the first mover’s action informative of what she expects from the second mover. Hence the second mover can infer the first-mover’s expectations conditional on her action. We categorize a promisor as someone who expresses intent to invest in the non-selfish action no matter which action the promisee
chooses. Our design allows us to endogenously vary the guilt faced by the promisor while keeping all other incentives to keep a promise constant. Our results show that guilt-aversion is a reason behind promise-keeping. We find that 55% of promisors choose to keep their promise after the promisee chooses an action which signals a higher level of trust compared to only 42% who choose to keep their promise when the promisee’s action signals a lower level of trust. The first-order and second-order beliefs also vary conditional on the promisee’s action. Promisees who choose the less risky option believe on average that the promisor has a 69% chance of investing in the non-selfish action. On the other hand, those who choose the risky option, believe on average the promisor has 88% chance of choosing the non-selfish action. Promisors reported second order belief of 72% if the promisee chose the less risky option and 74% if the promisee chose the risky option. The promisor’s likelihood of choosing the non-selfish action increases with his second order belief.

Authors: Puja Bhattacharya, Arjun Sengupta
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Does market structure affect truth-telling? An experiment with rating agencies

Jean Paul Rabanal
CEED lab, Ball State University

ABSTRACT:
In this paper, we study the conflicts of interest that arise in issuer pay models. We complement the theoretical work of Bolton, Freixas and Shapiro (2012, JoF) by introducing an experimental approach that looks at the effect of market structure – monopoly and a duopoly – on the incidence of lying by rating agencies. In our game, agencies receive a signal regarding the type of asset that the seller has. The seller does not know their asset type and therefore, asks the rating agency for a report which is either blue (good) or red (bad). The asset, along with the report (if any), is then presented to the buyer for purchase. We find that in a monopoly environment the incidence of lying is almost twice as high as in a duopoly market.

Authors: Jean Paul Rabanal and Olga A. Rabanal
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Demanding or Deferring? The Economic Value of Communication with Attitude

Siyu Wang
ICES, Economics Department, George Mason University

ABSTRACT:
This paper builds a bridge between theory (Farrell 1993; Rabin 1994) and experiment (Charness and Dufwenberg 2006, 2010; Cooper and Kühn, working paper) to explain why rich, multi-meaning language may allow coordination to occur more easily than restricted signaling language. We hypothesize that free-form simultaneous messaging improves coordination because people both use and respond to messages’ requested equilibrium and attitude. We generalize the analysis of free-form communication with two-dimensional meaning: E-meaning (the requested equilibrium) as well as A-meaning (the request’s “attitude”). We test our model using controlled experiments. Consistent with our model, we find (i) free-form communication more than restricted intention signaling facilitates coordination; (ii) natural language cheap-talk does include both equilibrium requests and attitude; (iii) people respond to both the requested equilibrium and attitude when making action decisions; and (iv) the use of attitude improves coordination by enabling “negotiation” in one-shot simultaneous communication. Moreover, while males and females recognize and respond to equilibrium and attitude equally well, we find females are more likely to send more demanding requests than males, while males generally focus more on the equilibrium outcome than the attitude. Our research helps to explain why free-form communication more than restricted signaling facilitates coordination, and also sheds light on effective approaches to the design of communication systems that promote efficient economic outcomes.

Authors: Siyu Wang and Daniel Houser

Cognitive Load and Strategic Sophistication

John Smith
Department of Economics, Rutgers University-Camden

ABSTRACT:
We study the relationship between the cognitive load manipulation and strategic sophistication. The cognitive load manipulation is designed to reduce the subject's cognitive resources that are available for deliberation on a choice. In our experiment, subjects are placed under a high cognitive load (given a difficult number to remember) or a low cognitive load (given a number that is not difficult to remember). Subsequently, the subjects play a one-shot game then they are asked to recall the number. This procedure is repeated for various games. We find a nuanced and nonmonotonic relationship between cognitive load and strategic sophistication. This relationship is consistent with two effects. First, subjects under a high cognitive load tend to exhibit behavior consistent with the reduced ability to compute the optimal decision. Second, the cognitive load tends to affect the subject's perception of their relative standing in the distribution of the available cognitive resources and this prompts additional cognitive effort. The net result of these two opposing effects depends on the strategic setting. Our experiment provides evidence on the literature that examines the relationship between measures of cognitive ability and strategic sophistication.
Malevolent and Benevolent Urns: The Ellsberg Task as a Game

Adam Dominiak
Department of Economics, Virginia Tech

ABSTRACT:
“Ambiguity averse” behavior - as manifested in the classical Ellsberg experiment - is interpreted as subjects' reluctance to bet on events with unknown probabilities. Models explaining the cautious attitude rely on the idea that subjects behave as if they had non-probabilistic beliefs. We present a different interpretation: Instead of viewing the Ellsberg task as a single-person decision problem, it can be seen as a game. The second person is the player who determines the unknown distribution of balls. The Nash equilibrium predictions of this game depend on the utility of the second player, with the game ranging from a zero-sum one to a coordination game. However, the prediction based on the uncertainty averse preference models remain unchanged. Both situations are implemented experimentally and yield different results, in line with the game theoretic prediction. Additionally, the standard scenario (without explicit mention of how the distribution is determined) leads to results similar to the zero-sum game, suggesting that subjects view the standard Ellsberg task as a game against the experimenter.

Authors: Adam Dominiak & Peter Duersch

Thoughtful Play in the Centipede Game: Evolving Beliefs and Falling Pass Rates

Dimitry Mezhvinsky
Department of Economics, The Ohio State University

ABSTRACT:
The existing experimental literature consistently finds that observed play in the Centipede Game and related games fails to match theoretic predictions based on the logic of backward induction or iterated elimination of dominated strategies. In order to shed light on players' decision making process, I elicit players' beliefs about others' actions in a normal form centipede game. I find that players place nontrivial weight on their starting beliefs about others, even as they receive feedback over multiple plays of the game. Players also update their beliefs based on past experience but anticipate that others may change how they play over the course of the experimental session. This belief updating leads to a gradual convergence toward the Nash equilibrium prediction, as observed in other studies. I also find that factors external to the game may alter beliefs and thus alter behavior.
How Well Does Evolutionary Theory Predict Evolution of Play in Infinitely Repeated Prisoner’s Dilemma Games in the Laboratory?

Laura Razzolini
Department of Economics, School of Business, Virginia Commonwealth University

ABSTRACT:
We use Replicator dynamics predictions to study the evolution of play in infinitely repeated Prisoners’ Dilemma games. To give theory the best shot, we propose a novel design in which players choose strategies instead of actions. While statistical tests reject the exact functional prediction of replicator dynamics, for seven out of eight sessions the theory correctly predicted 20-steps-ahead the evolution of strategies based on initial distribution of play.

Authors: Atin Basuchoudhary, Oleg Korenok and Laura Razzolini

Cost Asymmetry and Uncertainty in an Experimental Volunteer’s Dilemma

Jennifer Pate
Loyola Marymount University

ABSTRACT:
The Volunteer’s Dilemma is a provision point version of the classic public goods game where, once the level is obtained, all n players enjoy the benefit of the public good. Each member faces a binary set of options including a costly decision to volunteer and a costless no volunteer choice. The volunteer’s dilemma is a unique version in that only one volunteer is needed to supply the public good. Typical examples of the volunteer’s dilemma range from helping potential victims of violent crime to political vetoes, where volunteering comes at a real cost, monetary or otherwise.
Following prior studies, the situation is modeled as n members of a group receiving a monetary payoff of V if at least one player volunteers at a cost of C. In the event of a no-volunteer outcome, members receive a lower payoff of L. Since V >L, the preferred outcome for any player is to not volunteer while at least one other group member volunteers. However, it is assumed that C<V–L, which makes volunteering at cost C better than a no-volunteer outcome for every individual player. The trade-off between costly volunteering and the benefit to free-riding while possibly receiving L is the dilemma. Our experimental design features 10 sessions testing cost asymmetry in the volunteer’s dilemma, with complete and incomplete information, across group sizes of N = 2 and N = 6, funded by the Russell Sage Foundation.
We find that increasing the cost to volunteer significantly decreases the rate of volunteering. We are also able to show that the rate of volunteering is positively correlated with other group members’ costs, which suggests that people tend to take their turn volunteering when their cost to volunteer is relatively low.
Additionally we find that incomplete information results in an increased volunteer rate.
We find weak evidence that this translates into improved outcomes, although there may be other environments that have higher rates of no-volunteer outcomes in which the increased volunteerism caused by incomplete information may lead to clearer results in terms of overall efficiency.

**Authors:** Healy, A and J. Pate

**Cooperation in Stochastic Games: A Prisoner’s Dilemma Experiment**

Andrew Kloosterman
University of Virginia

**ABSTRACT:**
This experiment investigates cooperation in a stochastic generalization of the infinitely repeated prisoner's dilemma. The stochastic element introduces the importance of beliefs about dilemmas played in future periods in determining the scope for punishing defectors. Additionally, it introduces the possibility of cooperation and defection on the most cooperative equilibrium path. The results of the experiment suggest that subjects understand the importance of beliefs, although only after they gain sufficient experience in the lab. However, there is little evidence in favor of cooperation and defection in the way that is predicted by the most cooperative equilibrium path.

**The Role of Risk Aversion and Cautiousness on Explaining Individual Behavior in a Repeated Coordination Game**

Sining Wang
Economics Department, University of Connecticut

**ABSTRACT:**
This paper will examine how risk aversion and cautiousness will affects a decision maker’s subjective judgment and strategy selection in a social cooperation environment. More specifically, we will look at whether the economic concept of risk aversion or the related psychological construct of cautiousness can explain the origin and the evolution of people’s subjective judgment on another person’s action in a repeated coordination game.

As a typical case of decision making where cooperation entails risk, the coordination game has attracted a lot of attention in the last two decades. While there is a large amount of research that has investigated how the institution of the game will affect individual behavior and outcomes in different types of coordination games, few attempts have been made to investigate how the decision maker’s characteristics can influence one’s strategy selection. Notable exceptions include Neumann and Vogt (2009), Buyukboyaci (2012) and Al-Ubaydli et al. (2013). All of them examined the relationship between the decision maker’s risk preference (measured under the assumption of constant relative risk
aversion) and her strategy selection. Their results suggested that risk aversion is independent from people’s strategy selection in the coordination game. In this paper, we argue that cautiousness, as a personality trait, plays a central role in explaining individual behavior in the coordination game. Moss (1960) defined cautiousness as the tendency to behave in a manner designed to avoid potential failure or disapproval experiences, and this goal is achieved often at the expense of other satisfactions. In this study, using laboratory experiment: we found that 1. In line with past studies, the traditional measure of risk aversion cannot explain individual behavior in the repeated coordination game; 2. The psychological concept of cautiousness is negatively correlated with the decision maker’s subjective judgment in the first period of the game; 3. In a repeated game, cautiousness can help explaining the evolution of these judgments. In specific, cautiousness is negatively associates with the probability that one achieve the Pareto Optimal equilibrium.

The Impact of Overconfidence in Acquiring Information

Klajdi Bregu
University of Arkansas

ABSTRACT: Overconfidence has been shown to produce excess market entry, increased volatility in financial markets, and excessive investments. In this paper we offer a possible mechanism through which overconfidence can lead to such consequences. We argue that overconfident people incur a greater intrinsic cost when they ask for help and as a consequence ask for less help. To test this idea a two-part experiment is employed. In the first part subjects complete a simple counting task which is used to calculate two measures of overconfidence, overestimation and overplacement. The second part of the experiment allows subjects to ask for free help that improves the chances of getting the prize. The results show that both overconfidence measures are negatively correlated with the amount of help that subjects seek, consistent with overconfidence leading to bad market outcomes.

Authors: Klajdi Bregu, Daniel Forbes

Decomposing Models of Bounded Rationality

Ryan Kendall
Los Angeles Behavioral Economics Laboratory, University of Southern California

ABSTRACT: This paper illustrates a general disconnection between many models of bounded rationality and human decision making in 2 by 2 games. A new mathematical approach allows for any game to be decomposed into unique components. The strategic component of a game contains the necessary and sufficient information to determine the prediction for a broad class of models focused on bounded rationality. Among others, this class of
models includes the most commonly used specifications for Quantal Response (QRE), Noisy Introspection (NI), level-k, and Cognitive Hierarchy (CH). These bounded rationality models are shown to exhibit a mathematical invariance to changes in a game's non-strategic components, and this paper's primary hypothesis is that humans do not exhibit this invariance. Using a laboratory experiment consisting of simple 2 by 2 games, we find that human subjects systematically respond a game's behavioral component, which is ignored by the QRE, NI, level-k, and CH models. The value added of this paper is two-fold. First, we show that previous results and puzzles related to these models are special cases of our general finding. Second, our approach can predict the settings in which contemporaneous models of bounded rationality will generate good (and poor) fits of human behavior before the data is collected, making it a valuable tool for future research.

Authors: Daniel Jessie and Ryan Kendall

Rational Indolence

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ABSTRACT:
Indolence (or laziness) is usually viewed as a bad, even irrational, behavior. This common sense view can be misleading and conceal its true motives. In this paper indolence is considered as a rational behavior, which allows to dig deeper and identify its causes. Based on this analysis, some suggestions as to how nudge people towards more desirable outcomes are discussed.

The paper builds a model that indicates the conditions under which we should observe indolence. These conditions are hard to control in the field, but are easily controlled in the lab, which provides us with a clean environment to test the model. Given that the observed choices are inherently noisy, I enhance the standard model by introducing a probabilistic choice rule. This allows me to specify the data generating process and develop a design that gives the theory its best shot. Since the model involves several behavioral parameters, like risk aversion and noise, that are necessary for experimental design, I use the most reliable estimates available in the literature as proxies. Risk preferences are controlled by running a separate risk elicitation task to estimate the behavioral parameters using maximum likelihood.

Revealed difference

Mikhail Freer
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ABSTRACT:
How heterogeneous are individual preferences? Are men's preferences more heterogeneous than women's? In this paper, we consider the revealed different relation. Two people are revealed different if their decisions considered jointly are less rational than their decisions considered separately. We show that not all measures of rationality can characterize the heterogeneity of preferences since not all of these measures are distance functions (two people considered jointly can be more rational than each person separately). The proposed approach is completely non-parametric and it can be adapted to consider heterogeneity in behavior under additional assumptions (e.g. homotheticity or independence). Using data from the Netherlands, we show that men have more heterogeneous preferences than women.

Authors: Marco Castillo and Mikhail Freer

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Breaking the glass ceiling with "No": Gender differences in accepting and receiving requests for non-promotable tasks

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ABSTRACT:
Gender differences in task allocations may help sustain vertical gender segregation in labor markets. If women hold more non-promotable tasks then they may progress more slowly than men in organizations. Examining environments where a volunteer must be found for a task that everyone prefers be completed by someone else (writing a report, serving on a committee, etc.) we find that, relative to men, women more frequently volunteer, more frequently are asked to volunteer, and more frequently accept requests to volunteer. These differences are consistent with the belief that women, less than men, say 'No' to request to perform non-promotable tasks.

Co-authors: Lise Vesterlund, Linda Babcock, and Laurie Weingart

Back to Sessions

Price Bubbles and Gender in Asset Markets with a Flat Fundamental Value

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ABSTRACT:
Laboratory asset markets are typically run for a short duration in a setting with a declining fundamental value that equals the sum of expected dividends for all remaining periods. This paper adds an alternative investment with a safe rate of return in a manner that induces a flat fundamental value for the risky asset. The fundamental value is a
share price for the risky asset that equates the expected return from random dividends to the deterministic rate of return for the safe asset. Trading sessions are run for participants grouped by gender. Asset price bubbles above fundamental value are observed in all sessions, regardless of gender. Analysis of the elicited price forecasts indicates that speculation is fueled by capital gains that exceed expectations but are expected to continue. The bubbles are generally as large with groups of female traders, a pattern that differs from the stark gender effects observed by Eckel and Fullbrunn (AER, 2015), who report that women do not generate price bubbles in markets with the declining fundamental value setup.

Authors: Charles A. Holt and Megan Porzio

Gender, Competitiveness and Stress – Correlation and Causality

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ABSTRACT:
Women are typically less willing than men to compete even though they perform equally well. In two experiments, we test whether stress can help explain this gender gap in competitiveness. In experiment 1, we study whether salivary cortisol and self-reported stress responses to tournament exposure correlate with willingness to compete. We find that while tournaments increase stress levels, stress reactions do not predict willingness to compete. In experiment 2, we employ the cold pressor task to study whether there is a causal effect of stress on competitiveness. We find no such evidence. Moreover, stress cannot explain any of the gender gap in competitiveness. We also look at two proxies of arousal: skin conductance and self-reported excitement. We find that neither proxy can predict competitiveness.

Authors: Anna Dreber Almenberg, Thomas Buser, Johanna Mollerstrom

Fraudulent Misreporting and the Business Cycle: An Experimental Investigation

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ABSTRACT:
Empirical researchers have documented an increased incidence of corporate fraud during a specific segment of the business cycle, during downturns following booms. This paper investigates possible behavioral explanations for the finding. We develop a signal-jamming model where managers make biased reports to shareholders based on privately observed signals. But shareholders simply adjust these disclosures by the equilibrium amount of the bias. Fraud occurs, but does not fool shareholders or affect share values.
We then design an experiment based on the signal-jamming model. As the model predicts, managers’ reports are biased, and the shareholders expect biased reports. However we find that managers’ reports tend to be more fraudulent when their private information is worse than expected. Shareholders are unable to fully adjust the reports, and the fraud does affect share values. Since managers tend to exaggerate by more during relatively poor outcomes, the extent of the fraud is greater in downturns, mirroring the empirical finding.

AUTHORS: BRIAN D. KLUGER, STEVE L. SLEZAK

Willingness to Pay Sovereign Debt: Does Type of Renegotiation Clause Matter?

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College of Business University of Louisville

ABSTRACT:
A government’s ability to credibility represent its populace’s willingness to accept austerity measures is important for future borrowing. In recent years some yields on Greek government debt have risen over 20%, much higher than comparable countries, such as Italy. Of note, Bi and Traum (2012) access that Italy had a higher probability of default at that time. This empirical evidence suggests that investors in the sovereign bond market are factoring in a country-character risk that reflects a populace’s willingness to accept austerity measures, and therefore increase the likelihood of creditor repayment. Prior to the 2007 financial crisis, unanimous agreements were the prevalent bond restructuring clause for sovereign debt but post crisis more sovereign governments are issuing debt with collective action clauses. Pitchford and Wright (2007) argue that policy changes to collective action clauses obtain an optimal tradeoff between efficient borrowing ex ante and the cost of default ex post. Using paid experiments with college students we examine the effect these two contractual renegotiation clauses have on participants’ willingness to accept personal cost in order to provide a higher probability of repayment for everyone. We find that unanimous agreement sessions relative to collective action clauses produce on average higher ex post contribution levels by the non-negotiators (populace), and are more likely to renegotiate equal ex post outcome distributions. However, unanimous agreements also tend to have a higher variance of outcomes, creating an ex ante trade-off between the two types of clauses.

Vote Buying with Cash vs. Promises

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ABSTRACT:
Vote buying is defined as payments (or promises of payments) given by candidates to voters in exchange for their votes. This exchange suffers from commitment problems on both sides and these commitment problems are shaping which kinds of payments are made in practice. This paper studies what would happen if we were able to eliminate these commitment problems – is there an optimal payment form predicted by theory? By building up on a vote buying model by Dekel, Jackson and Wolinsky (2009) and probabilistic voting models, we model the interaction of a candidate and a voter. We allow the candidate to make two kinds of offers: up-front payment and conditional payment. The up-front payment is the counterpart of the payments made to the voters prior to the election, and the conditional payment is the post-election counterpart that is also conditional on the candidate winning. We allow the voters to choose only one form of payment if they choose to sell their votes. We find that in the presence of either risk aversion or inequity aversion, conditional payment dominates up-front payment. Moreover, inequity aversion implies the offers responsive to the candidate’s potential earnings, whereas this effect should not be present under selfish preferences. We test our hypotheses in a lab experiment. The candidates make offers that are more generous than predicted by selfish preferences. In addition, our results are consistent with inequity aversion in that vote buying overwhelmingly occurs through conditional payments and the amount offered is responsive to the potential earnings of the candidate.

Coauthor: Erkut Ozbay

Collusion with Private Information: An Experiment on the Role of Side Payments

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ABSTRACT:
We design an experiment to examine the role of side payments in facilitating collusion and fostering productive efficiency in a repeated Bertrand duopoly market. Sellers in the experiment are privately informed about their costs, which are randomly drawn every period. Theory predicts that a seller facing a favorable cost shock will offer a side payment to a high-cost rival for the latter to stay out of the market. The low-cost seller then proceeds to serve the entire market at the monopoly price, thereby achieving joint profit maximization and productive efficiency. In the experiment, we find that the sellers who choose to use side payments post higher prices. However, the mere availability of the side payment option does not lead to greater collusion, as compared to a baseline treatment without that option. Furthermore, side payments have a weak but positive effect on productive efficiency. Finally, regardless of cost, the modal side payment offer is equal to fifty percent of profit, which suggests that implementing equal payoffs across sellers plays an important role in sustaining collusion.
Unleashing Animal Spirits - Self-Control and Overpricing in Experimental Asset Markets

David Schindler
Department of Economics, University of Munich

ABSTRACT:
One explanation for overpricing on asset markets is a lack of self-control abilities among traders. Self-control is the individual capacity to override or inhibit undesired behavioral tendencies such as impulses, and to refrain from acting on them. We implement the first experiment that is able to address a potential causal relationship between self-control abilities and systematic overpricing on financial markets by introducing an exogenous variation of self-control abilities. Moreover, our experimental treatments seek to detect some of the channels through which individual self-control problems could transmit into irrational exuberance on the aggregate level. We observe a strong and causal effect of self-control abilities on market overpricing. Low self-control traders are associated with significantly larger levels of overpricing, and they earn significantly less on exuberant markets as a consequence of holding assets for too long.

Authors: Martin G. Kocher, Konstantin E. Lucks and David Schindler

Testosterone and Trading: A Biological Driver of Asset Mispricing

Amos Nadler
Ivey Business School at Western University

ABSTRACT:
Traditional finance theories state that asset prices are determined by firm fundamentals, such as per-share earnings and relative risk. However, a growing body of literature shows prices often do not reflect underlying value and are largely formed by expectations of future cash flows that are discordant with financial fundamentals and are vulnerable to cross-sectional sentiment influences. This paper demonstrates asset mispricing by a biological driver of competitive bidding—testosterone—in experimental asset markets. We show that testosterone drives competitive bidding leading prices to dissociate from fundamental value, producing larger and longer-lasting bubbles. Further, testosterone reduces trading performance and increases trader overconfidence.