FUR XV International Conference

Foundations and Applications of Utility, Risk and Decision Theory (FUR)

June 30 - July 3 2012 — Georgia State University, USA

Plenary Speakers

Jerome Busemeyer, Indiana University

Edi Karni, Johns Hopkins University

Harris Schlesinger, University of Alabama

Nathaniel T. Wilcox, Chapman University

Hosted By Experimental Economics Center (ExCEN)
and Center for the Economic Analysis of Risk (CEAR)

FUR XV International Conference

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Abstract and Additional Program Information

FUR XV Conference Schedule

Saturday, June 30

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Sunday, July 1

08:00 – 09:00	**Continental Breakfast**
09:00 – 10:00	**Plenary Session I**
10:00 – 10:20	**Break**
10:20 – 12:00	**Parallel Sessions I**
12:00 – 13:00	**Lunch**
13:00 – 14:00	**Plenary Session II**
14:00 – 14:20	**Break**
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19:00 – 22:00	**Gala Dinner**

Tuesday July 3

08:00 – 09:00	**Continental Breakfast**
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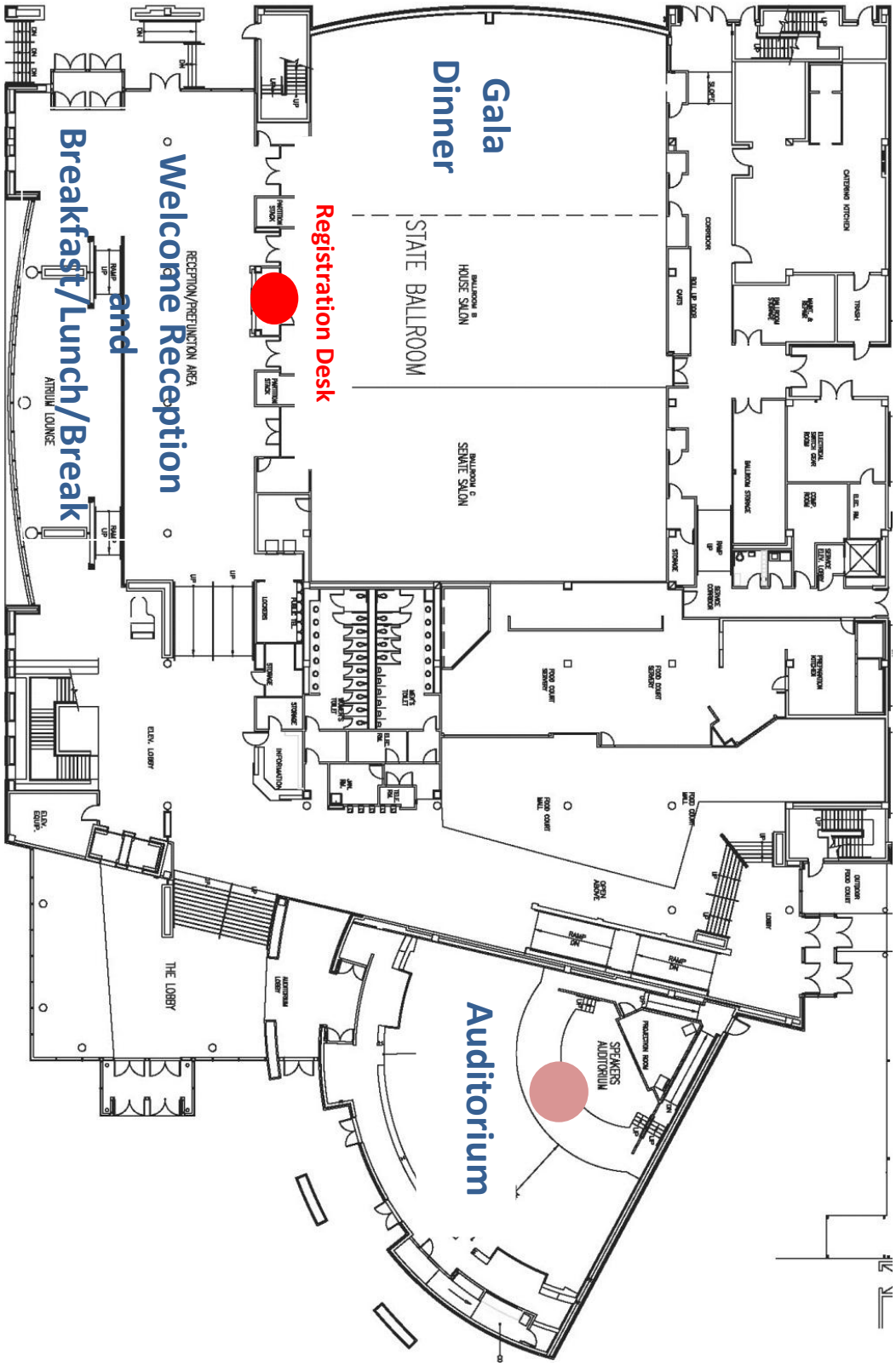
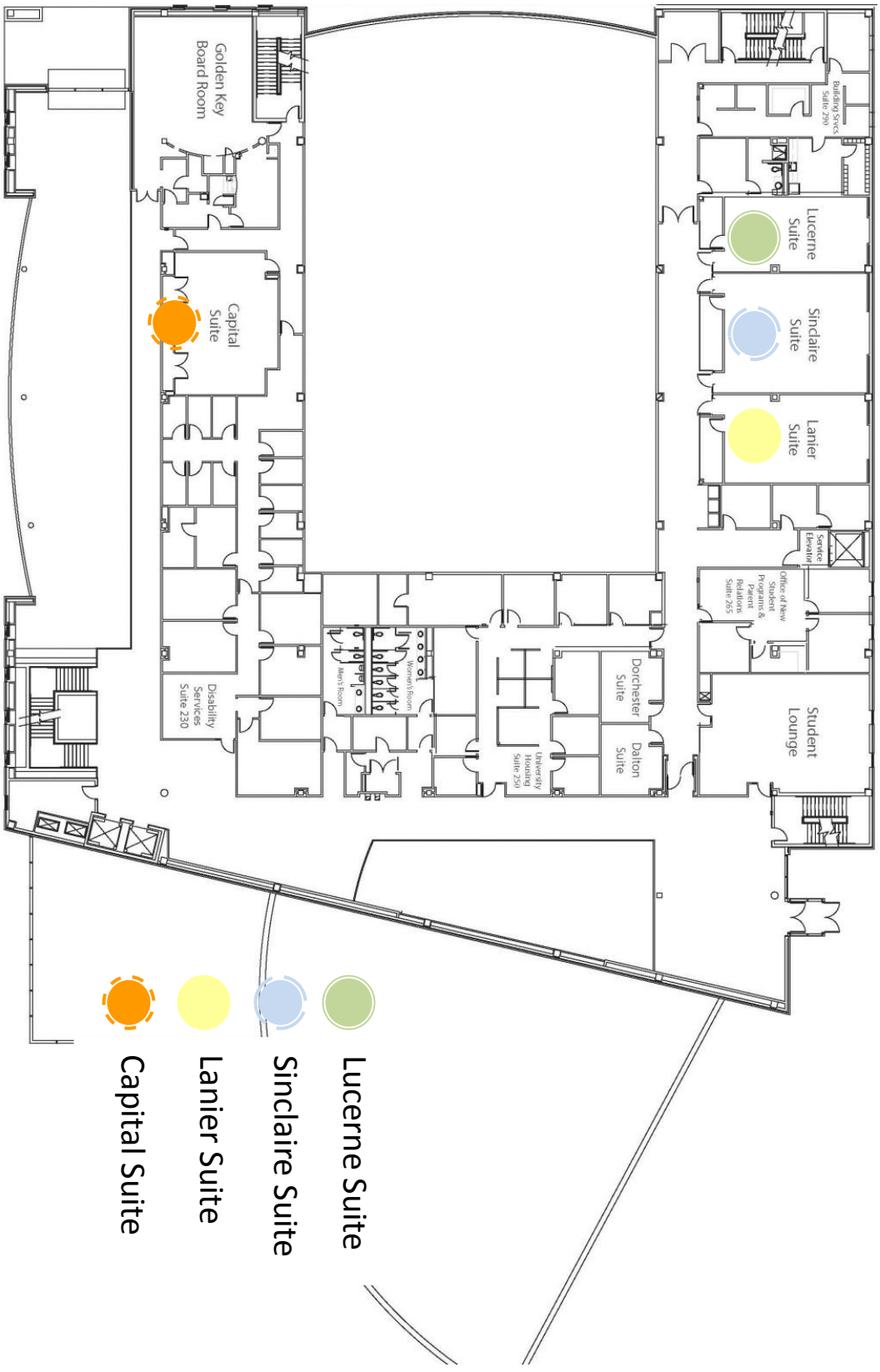
10:40 – 11:00	**Break**
11:00 – 12:40	**Parallel Sessions VIII**
12:40 – 2:00	**Lunch and Discussion of the Next Conference**

Student Center First Floor



Student Center Second Floor



Plenary Sessions
(Auditorium)

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Nathaniel T. Wilcox, Chapman University

"Heterogeneity and Stability of Probability Weights"

Plenary Session II - Sunday July 1, 13:00 – 14:00

Jerome Busemeyer, Indiana University

"Forging Together Cognitive and Decision Principles to Build Decision field theory"

Plenary Session III - Monday July 1, 09:00 – 10:00

Harris Schlesinger, University of Alabama

"Higher Order Risk Attitudes"

Plenary Session IV - Monday July 2, 13:00 – 14:00

Edi Karni, Johns Hopkins University

"Reverse Bayesianism: A Choice-Based Theory of Growing Awareness"

Parallel Sessions I

Sunday July 1, 10:20 – 12:00

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Eike B. Kroll
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Kim Kaivanto
Alternation Bias and Reduction in St. Petersburg Gambles: An Experimental Investigation

Pietro Ortoleva
Allais, Ellsberg, and Preferences for Hedging

Zhong Songfa
An Experimental Study of Attitude towards Second Order Risk

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Term Structure of Discount Rates under Multivariate s-Ordered Consumption Growth

Jinrui Pan
Liminal Exponential Discounting

Olivier Renault
An Investigation of Time Consistency for Subjective Discounted Utility

Nathaniel Higgins
Time Preference and Technology Adoption: A Single-Choice Experiment with U.S. Farmers

Dynamic Choice, Regret Decision Errors (Lanier Suite)

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*Mental Accounting, Reference Price **Adaptation, and Anomalies in Consumption-Payment Decision***

A. Nebout
When Allais meets Ulysses: Dynamic axioms and the Common Ratio Effect

Han Bleichrodt
A Tailor-Made Test of Intransitive Choice

Junyi Dai
Towards a dynamic, probabilistic, and attribute-wise model of intertemporal

RISK MANAGEMENT & INSURANCE (Lucerne Suite)

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Subjective probability estimates and source preference for flooding risks: a South-East Asian case study

Morten I. Lau
Willingness to Pay for Insurance in Denmark

Jimmy Martínez-Correa
Risk Management and Insurance Decisions Under Ambiguity

Elisabet Rutström
Behavioral Responses towards Risk Mitigation: An Experiment with Wild Fire Risks

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Robert Nau
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Victoria Prowse
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Moritz Lueck
Information Aggregation With Endogenous Ordering

Parallel Sessions II

Sunday July 1, 14:20 – 16:00

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Disentangle Ambiguity Aversion and Probabilistic Risk Aversion in the Lab

Aurelien Baillon
Prudence (and more) with respect to Uncertainty and Ambiguity

Anisa Shyti
Entrepreneurial choice under ambiguity and the impact of the overconfidence bias

Frédéric Cherbonnier
Decreasing aversion under ambiguity

AUCTIONS, MECHANISMS, & LIABILITY RULES (Sinclaire Suite)

Miguel Carvalho
Static vs. Dynamic Auctions with Ambiguity Averse Bidders

Luciano de Castro
Uncertainty, Efficiency and Incentive Compatibility

Vadim Timkovsky
Hedging Risk in Cloud Computing Markets by Cloud Service Option Contracts: An Extended Abstract

FIELD EXPERIMENTS (Lanier Suite)

Li Hao
Preferences of Migrants: A Field Experiment in China

Jan Stoop
From the lab to the field: envelopes, dictators and manners

S.T. Trautmann
Higher Order Risk Attitudes, Demographics, and Financial Decisions

Angelino Viceisza
Comprehension and Risk Elicitation in the Field

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Discounting Behavior and the Magnitude Effect: Evidence from a Field Experiment in Denmark

R K Rajagopal
Anchoring Bias in Forecast Information Sharing in a Supply Chain

Olivier Armantier
Inflation Expectations and Behavior: Do Survey Respondents Act on their Beliefs?

Manel Baucells
Felicity during Anticipation and Recall

RISK AVERSION (Auditorium)

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Jonathan Alevy
Risk attitudes and the length of days

Jeffrey V. Butler
The role of intuition and reasoning in driving aversion to risk and ambiguity

Melayne McInnes
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David Butler
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Vinayak Dixit
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Eyal Ert
Sampling Experience Reverses Preferences for Ambiguity

John Hey
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Zhenxing Huang
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Christian Kellner
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David Gill
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Kota Saito
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Godfrey Charles-Cadogan
A Confidence Representation Theorem with Ambiguity Aversion and Applications to Financial Markets and Trade Algorithm

Konrad Grabiszewski
On the Rejectability of the Subjective Expected Utility Theory

Michel Regenwetter
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UPDATING, STAKES, & CONTEXTS (Lanier Suite)	**BEHAVIORAL ECONOMICS II (Lucerne Suite)**
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Monday July 2, 16:20 – 18:00

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ECONOMETRICS (Lucerne Suite)	**SEMI PLENARY II (Auditorium)**
Xavier Gassmann *Eliciting farmers' risk and ambiguity preferences* **Peter G. Moffatt** *The Impact of Financial and Macroeconomic Factors on Individual Risk Attitude* **Jani Saastamoinen** *Are Gambling Behaviour and Allais Paradox Two Sides of the Same Coin? Evidence from Horse Race Betting* **Michel Regenwetter** *Qtest: Quantitative Tests for Theories of Pairwise Preference and Binary Choice Data, with Applications*	**Peter Klibanoff** *Polarization and Ambiguity* **Mark Machina** *Ambiguity Aversion with Three or More Outcomes*

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Placido Laetitia *Ambiguity and compound risk attitudes: an experiment* **Dolchai La-ornual** *Diversifying over Ambiguity: How People Evaluate Multiple Uncertain Prospects* **Craig S. Webb** *Methods for Incentive Compatible Measurement of Time Preferences* **Adam Dominiak** *"Agreeing to Disagree" Type Results under Ambiguity*	**Zhihua Li** *Prior Incentive System: A New Approach to Improve the Implementation of Individual Choice Experiments* **J. Todd Swarthout** *Inducing Risk Neutral Preferences with Binary Lotteries: A Reconsideration* **Luciano de Castro** *A New Approach to Correlation of Types in Bayesian Games* **Peter Moffatt** *The use of discrete choice experiments to capture the preferences towards risky treatments*

Parallel Sessions VIII

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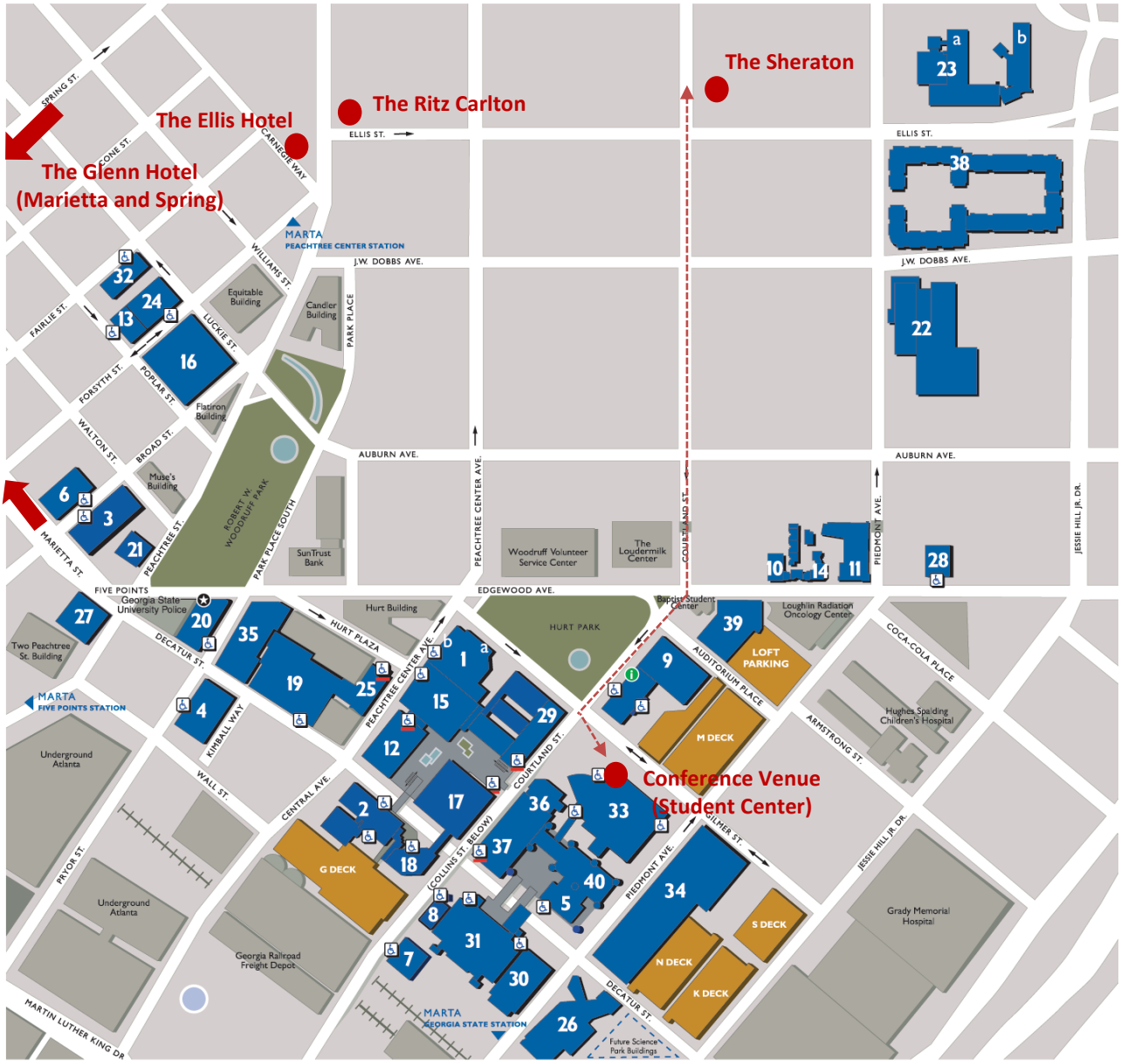
Notes for Presenters

We have scheduled each parallel session for 100 minutes. Most sessions have 4 papers. This means that presenters are limited to a total of 25 minutes. There are no assigned discussants, but we recommend that presenters leave at least the final 5 minutes for questions and comments. If a session has only 3 papers, we ask that each paper only take 25 minutes, including discussion. This will allow conference participants to move between sessions.

Area Map



Walking direction from the Sheraton to conference venue (9 minutes)

Head south on Courtland St NE (follow one way traffic direction). The Student Center is 5 blocks from the Sheraton.

Walking direction from conference venue to the Sheraton (9 minutes)

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Andrew Young School of Policy Studies
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Abstract List

On the Equivalence of Linear Option Pricing And Utility Indifference Valuation

Presenter: Ali Abbas
Author: Ali Abbas

Linear pricing models replicate the pay-off of an underlying asset(the option) with the pay-off of an associated traded asset (the stock) and a risk-free interest-bearing asset. The price of the underlying asset is a linear functional of the prices of the assets used for its replication. In a complete market, the linear option price also has an expected utility interpretation: it is the expected value of the option pay-off calculated using the risk neutral probability measure. This paper derives general conditions under which the linear price of an option, obtained by replicating its pay-offs, has a utility indifference interpretation under some probability measure. We derive the general forms of the asset dynamics, probability measures, and utility functions that enable this equivalence.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/aabbas.pdf

Anti-comonotone random variables and Anti-monotone risk aversion

Presenter: Moez Abouda
Author: Moez Abouda, Elyéss Farhoud

This paper focuses on the study of decision making under risk. We, first, recall some model-free definitions of risk aversion and increase in risk. We propose a new form of behavior under risk that we call anti-monotone risk aversion (hereafter referred to as ARA) related to the concept of anti-comonotony a concept investigated in Abouda, Aouani and Chateauneuf (2008). Note that many research has already been done in this field e.g. through the theory of comonotonicity. We give relationships between comonotone, strict comonotone, anti-comonotone and strict anti-comonotone random variables. Then, after the motivation of ARA, we show that this new aversion is weaker than monotone risk aversion while stronger than weak risk aversion.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mabouda.pdf

Risk attitudes and the length of days

Presenter: Jonathan Alevy
Author: Jonathan Alevy

Financial economists have presented evidence that there are systematic differences in returns in financial markets that are linked to seasonal changes in the number of daylight hours. One hypothesis is that seasonal variation in risk preferences underlies the cyclicality in market returns. This paper explores directly whether there is seasonal variation in risk preferences using two complementary datasets. One dataset is constructed from risk elicitations conducted over a broad range of latitudes in both the northern and southern hemispheres. The second examines variation within subjects in Anchorage, Alaska, a location with significant seasonal variability.

Inflation Expectations and Behavior: Do Survey Respondents Act on their Beliefs?

Presenter: Olivier Armantier
Author: Olivier Armantier, Wändi Bruine de Bruin, Giorgio Topa, Wilbert vander Klaauw, Basit Zafar

We compare the inflation expectations reported by consumers in a survey with their behavior in a financially incentivized investment experiment designed such that future inflation affects payoffs. The inflation expectations survey is found to be informative in the sense that the beliefs reported by the respondents are correlated with their choices in the experiment. Furthermore, most respondents appear to act on their inflation expectations showing patterns consistent (both in direction and magnitude) with expected utility theory. Respondents whose behavior cannot be rationalized tend to be less educated and to score lower on a numeracy and financial literacy scale. These findings are therefore the first to provide support to the micro-foundations of modern macro-economic models.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/oarmantier.pdf

Disentangle Ambiguity Aversion and Probabilistic Risk Aversion in the Lab

Presenter: Giuseppe Attanasi
Author: Attanasi, G., Gollier, C., Montesano, A., Pace, N.

We propose a theoretical model and a related experimental analysis in order to capture and disentangle different motivations for the lower willingness to pay to participate in a lottery when probabilities of the events are unknown. Our theoretical model combines Rank-Dependent Expected Utility Theory (henceforth RDEU) with Choquet Expected Utility (henceforth CEU). RDEU in decision under risk captures the distortion of known probabilities through the probability weighting function. CEU with probabilistic risk aversion under uncertainty captures the distortion of unknown probabilities through an event weighting function, which we interpret as the composition of the probability weighting function and the subjective probability on the event. The results of a pilot study do not corroborate the null hypothesis that the decision maker "weighs" probabilities in the same way both under risk and under uncertainty. This could be due to a complementarity between probabilistic risk aversion and ambiguity aversion, that we are currently analyzing through additional experimental sessions.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/gattanasi.pdf

Relative Performance of Liability Rules: Experimental Evidence

Presenter: Giuseppe Attanasi
Author: Vera Angelova, Giuseppe Attanasi, Yolande Hiriart

We compare the performance of liability rules for managing environmental disasters when third parties are harmed and cannot always be compensated. A firm can invest in safety to reduce the likelihood of accidents. The firm's investment is unobservable to authorities. Externality and asymmetric information call for public intervention to define rules aimed at increasing prevention. We determine the investment in safety under No Liability, Strict Liability and Negligence, and compare it to the first best. Additionally, we investigate how the(dis)ability of the firm to fully cover potential damages affects the firm's behavior. An experiment tests the theoretical predictions. In line with theory, Strict Liability and Negligence are equally effective; both perform better than No Liability; investment in safety is not sensitive to the ability of the firm to compensate potential victims. In contrast with theory, prevention rates absent liability are much higher and liability is much less effective than predicted.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/gattanasi2.pdf

Prudence (and more) with respect to Uncertainty and Ambiguity

Presenter: Aurelien Baillon
Author: Aurelien Baillon

Several studies have recognized the importance of risk prudence and risk temperance, for instance in precautionary savings behavior. Under expected utility, they are equivalent to the third and the fourth derivatives being positive and negative respectively. Eeckhoudt and Schlessinger (2006) have proposed behavioral definitions of these concepts and extended them by defining risk apportionment of order n, determining the sign of the nth derivatives of the utility function. In this paper I propose similar definitions for prudence and temperance with respect to uncertainty (when probabilities might be unknown) but also for uncertainty apportionment of order n. Moreover, I extend these concepts to ambiguity attitude, i.e., the change of behavior between risk and uncertainty. Implications for several models are derived. For instance, it is shown that Hansen and Sargent's(2001) multiplier preferences imply ambiguity apportionment of order n for all n. The relationship between uncertainty and ambiguity prudence and savings behavior is analyzed in simple savings models.

Mental Accounting, Reference Price Adaptation, and Anomalies in Consumption-Payment Decisions

Presenter: Manel Baucells
Author: Manel Baucells and Woonam Hwang

We propose a modification of discounted utility that incorporates the effect of reference prices and mental accounting. Consumers hold reference prices in mind. The reference price yields the book value of the item purchased or consumed.When evaluating the hedonic benefits of an economic act, a consumption or a payment, consumers compare the utility obtained, or the price paid, to its reference price. The static model produces a novel version of the endowment effect, and explains the basic sunk cost effect. In the dynamic version, a standard process of reference price adaptation explains payment depreciation, the mitigation of the endowment effect, and the flat-rate bias.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mbaucells.pdf

Felicity during Anticipation and Recall

Presenter: Manel Baucells
Author: Manel Baucells and Silvia Bellezza

We adopt the framework of experienced utility, where utility is the sum integral of a felicity (instant utility) function over time. We propose the Anticipation-Recall (AR) model, which provides the felicity of anticipation and recall associated with the consumption of an event. Under our assumptions, the felicity is U- shaped during anticipation and decreasing during recall. Too much anticipation raises expectations, and may lead to a less enjoyable experience. Shortening anticipation makes the event more surprising, and leads to an increase in utility from recall. For positive events, the optimal duration of anticipation is finite. We identify conditions under which a surprise is optimal, and discuss the optimal level of created expectations. For negative events, optimal anticipation is either very large or zero. We discuss the level of anticipation in order to manage the created expectation. Through a series of lab experiments, we provide empirical evidence in favor of the main implications of the model.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mbaucells.pdf

Elicitation of Attribute Weights Using Ordinal Judgments about Utilities

Presenter: Vicki Bier
Author: Vicki Bier, Chen Wang

We introduce a simple elicitation process where stakeholders express their preferences by giving rank orderings to utilities of a collection of alternatives, where the utility of each alternative is assumed to involve multiple attributes. The probability distributions over the various attribute weights are then mathematically derived (using either probabilistic inversion or Bayesian density estimation). This elicitation process reduces the burden of time-consuming orientation and training in traditional methods of attribute weight elicitation, and explicitly captures the existing uncertainty and disagreement among stakeholders, rather than attempts to achieve consensus by eliminating them. We illustrate the use of our elicitation process by a case study using hypothetical expert judgments on the adversarial preferences over major US urban areas. Results show that asking for rank orderings for only a small subsets of alternatives (e.g., top five) can provide reliable results for the attribute weights. This bodes well for application of the elicitation process, since there may be no need for stakeholders to rank large numbers or the whole set of alternatives.

Constant Consequence Paradoxes of Allais: Coalescing, Restricted Branch Independence, or Error?

Presenter: Michael H. Birnbaum
Author: Michael H. Birnbaum and Ulrich Schmidt

This paper evaluates a version of true and error theory in which the probability of making an error when responding to a choice problem might depend on a person's true preference pattern. When testing a behavioral property such as an Allais paradox with two choice problems, this model allows up to eight different error rates; this error model is more general than has been applied in previous research. If the study is appropriately designed, this model makes testable predictions and could in principle be rejected by empirical data; however, our data remain compatible with the model. Results indicate that constant consequence Allais paradoxes cannot be attributed to errors in this model. This research also analyzes whether the constant consequence paradoxes of Allais are due to violations of coalescing, the assumption that when two branches lead to the same consequence, they can be combined by adding their probabilities, or to violations of restricted branch independence (a weaker form of Savage's sure thing axiom). When errors are factored out, violations of restricted branch independence are minimal or even opposite from the direction of traditional Allais paradoxes, suggesting that rank-dependent models such as cumulative prospect theory that satisfy coalescing and attribute Allais paradoxes to violations of restricted branch independence should be rejected. Instead, violations of coalescing appear to account for the traditional pattern of Allais constant consequence paradoxes.

A Tailor-Made Test of Intransitive Choice

Presenter: Han Bleichrodt
Author: Aurélien Baillon, Han Bleichrodt, Alessandra Cillo

We performed a new test of intransitive choice based on individual measurements of regret theory, the most influential intransitive theory. Our test is tailor-made and, therefore, more likely to detect violations of transitivity than previous tests. In spite of this, we observed only few cycles and we could not reject the hypothesis that they were due to random error. Moreover, there was little evidence that regret affected people's choices. A possible explanation for the poor predictive performance of regret theory is that, unlike other non-expected utility models, it assumes that preferences are separable over states of nature. Our data suggest that to account for the violations of expected utility event-separability has to be relaxed.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/hbleichrodt.pdf

A Robust Approach to Risk Aversion

Presenter: Antoine Bommier
Author: Antoine Bommier and François Le Grand

Antoine Bommier and François Le Grand Paper Abstract: We explore the whole set of Kreps and Porteus recursive utility function and look at classes of utility functions that are well ordered in terms of risk aversion. It is found that the only possibility is provided by the class of preferences introduced by Hansen and Sargent in their robustness analysis. Applications show that working with preferences leads to unambiguous and intuitive result on the impact of risk aversion on the risk free rate, the market price for risk and on risk sharing, contrary to what is obtained when using Epstein and Zin preferences. The paper suggests therefore a shift from the traditional approach to study risk aversion in recursive problems.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/abommier.pdf

Bayesian model comparison of quantum versus traditional models of decision making for explaining violations of the dynamic consistency principle of decision making

Presenter: Jerome Busemeyer
Author: Jerome Busemeyer, Zheng Wang, Rich Shiffrin

Recently, quantum decision theory has achieved considerable success as a new theory for providing a coherent account of a variety of divergent empirical findings that appear paradoxical for traditional decision theory. But critics argue that this success may simply mean that quantum theories can be better because they are more complex. To examine this issue, we compared quantum models with traditional models using a Bayes factor, which provides one of the most rigorous methods for evaluating

models with respect to accuracy and parsimony. For this comparison, we used a large data set with a large number of conditions and subjects that examined a puzzling phenomenon called dynamic inconsistency - the failure of decision makers to carry out their planned decisions. The results of this model comparison supports the quantum model as compared to the traditional model of decision making.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jbusemeyer.pdf

Eliciting Strength of Preference Judgments using Money Incentives: Panacea or Chimera?

Presenter: David Butler

Author: David Butler, Andrea Isoni, Graham Loomes, Daniel Navarro-Martinez

In earlier work we elicited subjects' strength of preference judgments in a series of choices between lotteries and obtained useful and intuitive results. However those judgments were not elicited using task-related incentives. In this paper we seek to incorporate suitable money incentives into our experimental design. We make a number of attempts to do so but despite these efforts end up with less intuitive results. We argue that incorporating task-related money incentives in these ways is not a simple task and appears to unavoidably distort the constructs we seek to study.

The role of intuition and reasoning in driving aversion to risk and ambiguity

Presenter: Jeffrey V. Butler

Author: Jeffrey V. Butler, Luigi Guiso and Tullio Japelli

Using a large sample of retail investors as well as experimental data we find that risk and ambiguity aversion are positively correlated. We show the common link is thinking mode: intuitive thinkers tolerate more risk and ambiguity than effortful reasoners. One interpretation is that intuitive thinking confers an advantage in risky or ambiguous situations. We present supporting lab and field evidence that intuitive thinkers outperform others in uncertain environments. Finally, we find that risk and ambiguity aversion vary with individual characteristics and wealth. The wealthy are less risk averse but more ambiguity averse, which has implications for financial puzzles.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jbutler.pdf

Static vs. Dynamic Auctions with Ambiguity Averse Bidders

Presenter: Miguel Carvalho
Author: Miguel Carvalho

This paper presents the outcome of a dynamic price-descending auction when the distribution of the private values is uncertain and bidders exhibit ambiguity aversion. In contrast to sealed-bid auctions, in open auctions the bidders get information about the other bidders' private values and may therefore update their beliefs on the distribution of the values. The bidders have smooth ambiguity preferences and update their priors using consequentialist Bayesian updating. It is shown that ambiguity aversion usually affects bidding behavior the same way risk aversion does, but the main result is that this is not the case for continuous price descending auctions. This is new among a few theoretical cases where ambiguity aversion does not reinforce the risk aversion implications.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mcarvalho.pdf

A New Approach to Correlation of Types in Bayesian Games

Presenter: Luciano de Castro
Author: Luciano de Castro

Despite their importance, games with incomplete information and dependent types are poorly understood; only special cases have been considered and a general approach is not yet available. In this paper, we propose a new approach to the model of correlation of types in Bayesian games, which also allows asymmetries. This is related to the idea that “beliefs do not determine preferences,” and consists of modeling types with two explicit parts: one for preferences and another for beliefs. Building on this idea, we are able to provide the first pure strategy equilibrium existence for a general model of multi-unit auctions where types can be correlated. We also provide further results for a particular case of this idea, which we call “very simple distributions.” These distributions are defined by density functions which are constant in squares covering the support of all types. We provide necessary and sufficient conditions for the existence of a symmetric monotonic pure strategy equilibrium in first-price auctions with these distributions.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/lcastro2.pdf

Uncertainty, Efficiency and Incentive Compatibility

Presenter: Luciano de Castro
Author: Luciano De Castro and Nicholas C. Yannelis

The conflict between efficiency and incentive compatibility, that is, the fact that some Pareto optimal (efficient) allocations are not incentive compatible is a fundamental fact in information economics, mechanism design and general equilibrium with asymmetric information. This important result was

obtained assuming that the individuals are expected utility (EU) maximizers. Although this assumption is central to Harsanyi's approach to games with incomplete information, it is not the only one reasonable. In fact, a huge literature criticizes EU's shortcomings and considers many alternative preferences. Thus, it is natural to ask: does the mentioned conflict extend to other preferences? Is there any preference where this conflict does not exist? Can we characterize those preferences? We show that in an economy where individuals have complete, transitive, continuous and monotonic preferences, every efficient allocation is incentive compatible if and only if all individuals have maximin preferences.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/lcastro.pdf

A Confidence Representation Theorem with Ambiguity Aversion and Applications to Financial Markets and Trade Algorithm

Presenter: Godfrey Charles-Cadogan
Author: Godfrey Charles-Cadogan

This paper extends the solution space for decision theory by introducing a behavioural operator that (1) transforms probability domains, and (2) generates sample paths for confidence from catalytic fuzzy or ambiguous sources. First, we prove that average sample paths for confidence/sentiment, generated from within and across source sets, differ. So conjugate priors should be used to mitigate the difference. Second, we identify loss aversion as the source of Langevin type friction that explains the popularity of Ornstein-Uhlenbeck processes for modeling mean reversion of sample paths for behaviour. However, in large markets, ergodic confidence levels, imbued by Lichtenstein and Slovic (1973) and Yaari(1987) type preference reversal operations, predict bubbles and crashes almost surely. Third, simulation of the model confirms that the distribution of priors, on Gilboa and Schmeilder (1989) source sets, controls confidence momentum and term structure of fields of confidence. For example, it explains the asset pricing ''anomaly'' of sensitivity of momentum trading strategies to starting dates in Moskowitz, Ooi, Pedersen(2012). Fourth, we provide several applications including but not limited to a sentiment based computer trading algorithm. For instance, our computer generated field of confidence mimics trends in CBOE VIX daily sentiment index, and survey driven Gallup Economic Confidence Index (GEDCI) sounding in Tversky and Wakker(1995) type impact events. We show how VIX splits GEDCI into source sets that depict term structures of confidence for relative hope and fear. A simple statistical test for relative confidence beta upholds our theory that the average sample path for confidence/sentiment differs within and across source sets. It plainly shows that sentiment beta explains response to bubbles and crashes.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/gcharles_cadogan.pdf

Decreasing aversion under ambiguity

Presenter: Frédéric Cherbonnier
Author: Frédéric Cherbonnier and Christian Gollier

Under which condition does the set of desirable uncertain prospects expand when wealth increases? We show that the decreasing concavity (DC) of the utility function u is necessary and sufficient in the maxmin expected utility model. In the smooth ambiguity aversion model with the ambiguity valuation function phi, the DC of u and of phi(u) is necessary and sufficient. An alternative definition of decreasing aversion is based on the hypothesis that the investment in a risky asset is increasing in wealth. We show that this hypothesis does not hold in general under ambiguity aversion, and that one needs to constrain the structure of ambiguity to obtain unambiguous results of an increase in wealth in this portfolio choice problem.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/fcherbonnier.pdf

Rationalizing Variations in Behavioral Decisions

Presenter: Anton Cheremukhin
Author: Anton Cheremukhin, Anna Popova, Antonella Tutino

We show that rational inattention theory of Sims (2003) provides a rationalization of choice models à la Luce and gives a structural interpretation to probability curvature parameters as reflecting costs of processing information. We use data from a behavioral experiment to show that people behave according to predictions of the theory. We estimate attitudes to risk and costs of information for individual participants and document overwhelming heterogeneity in these parameters among a relatively homogeneous sample of people. We characterize, both theoretically and empirically, the aggregation biases this heterogeneity implies and find these biases to be substantial.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/acheremukhin.pdf

Discounting the risky future

Presenter: Stephen L. Cheung
Author: Stephen L. Cheung

The relationship between risk and time preferences has been a lively topic of recent research in experimental economics. Andersen et al (2008) demonstrate procedures for joint estimation of risk and time preferences under the assumption that the same utility function applies to both. However, Andreoni and Sprenger (in press) argue that two distinct utility functions govern choices under risk and certainty. If this claim is correct, the Andersen procedure will result in incorrect inferences. On the other hand, the inter-temporal portfolio allocation instrument of Andreoni and Sprenger may itself be confounded in risky settings if subjects perceive an opportunity for diversification. I will present the findings of two studies intended specifically to evaluate the validity of these two procedures, and to disentangle their implications for the estimation of time preferences.

An Experimental Examination of Hedging and Portfolio Selection

Presenter: Bryan Church
Author: Lucy Ackert, Bryan Church and Li Qi

Investors do not hold portfolios of assets that appear to be optimal. This paper reports the results of four experiments designed to inform us about how individuals make portfolio allocation decisions. Across all four experiments, we use a very simple experimental design with two risky assets that have payoffs that are perfectly negatively correlated so that participants can eliminate all risk. Participants make investment allocation decisions over a series of periods. Each period portfolios can be rebalanced at no cost because the assets are traded at a fixed price set equal to the expected payoff. Hence, all risk can be eliminated by simply holding the stocks in equal numbers. We find that participants, in general, do not hold balanced portfolios, except under very specific conditions. In particular, participants tend to hold a balanced portfolio when no outcome feedback is provided over time and their payout is contingent on a single period. Absent these specific conditions, we find that individuals make decisions that are consistent with cognitive bias, including the endowment effect and gambler's fallacy.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/lqi.pdf

Paradoxes and Mechanisms for Choice under Risk

Presenter: James C. Cox
Author: James C. Cox, Vjollca Sadiraj, and Ulrich Schmidt

Experiments on choice under risk typically involve multiple decisions by individual subjects. The choice of mechanism for selecting decision(s)for payoff is an essential design feature unless subjects isolate each one of the multiple decisions. We review theoretical properties of mechanisms including properties of two new mechanisms introduced herein. We report an experiment with several payoff mechanisms that generate data that show systematic differences across mechanisms in subjects' revealed risk preferences. We illustrate the importance of these mechanism effects by identifying their implications for tests of classic properties of theories of decision under risk. We also identify behavioral properties of mechanisms that diverge from theoretical incentive compatibility and may introduce bias in risk preference elicitation.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/CSS4-18-2012.pdf

Towards a dynamic, probabilistic, and attribute-wise model of intertemporal choice

Presenter: Junyi Dai
Author: Junyi Dai and Jerome R. Busemeyer

Abstract Most theoretical and empirical research on intertemporal choice assumes a deterministic perspective, leading to the widely adopted delay discounting paradigm. As a form of preferential choice, however, intertemporal choice might well be probabilistic in nature. Two empirical studies were conducted to demonstrate this property, in which the delay amount effect, common difference effect and magnitude effect in intertemporal choice were revealed in a probabilistic manner. The results, especially those associated with the delay amount effect, challenge the traditional deterministic view and call for alternative approaches. Consequently, a number of probabilistic models were explored and fitted to the choice response data, including one alternative-wise random utility model, two alternative-wise diffusion models, and six attribute-wise diffusion models employing the general framework of decision field theory. The alternative-wise models were derived from the traditional hyperbolic discount function while the attribute-wise models were built upon direct and/or relative differences in money and delay amounts. Furthermore, response times for intertemporal choice were recorded for the first time and the diffusion models, which assume a dynamic structure, were also fitted to the response time data so that more information can be utilized to find a better model. The results showed that attribute-wise diffusion models involving only direct differences performed the best and were able to account for all three intertemporal effects. In addition, the empirical relationships between choice proportions and response times are consistent with diffusion models and thus favor a dynamic instead of static model structure.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jdai.pdf

Induced Competition

Presenter: Daniel Dittmer
Author: Daniel Dittmer, Phillip E. Otto

We experimentally investigate ultimatum bargaining with multiple proposers. Even though the setting is non-competitive, responder use strategies which induce competition among proposers. More precisely, a given offer is more frequently rejected when it is lower than another one received by the same responder simultaneously. This behavior is not consistent with inequity aversion. Moreover, we find proposers' offers to be strongly positively correlated when they act sequentially, indicating that the responder's strategy is common knowledge. Furthermore, when interaction is repeated some responders successfully use discriminatory strategies to force proposers to increase offers beyond the 50percent stake.

The Subjective Risks of Driving

Presenter: Vinayak Dixit
Author: Vinayak V Dixit, Glenn Harrison, Elisabet Rutstrom

We examine the subjective risks of driving behavior using a controlled virtual reality experiment. Use of a driving simulator allows us to observe choices over risky alternatives that are presented to the individual in a naturalistic manner, with many of the cues one would find in the field. However, the use of a simulator allows us the type of controls one expects from a laboratory environment. The subject was tasked with making a left-hand turn into incoming traffic, and the experimenter controlled the rate of flow of oncoming traffic. The subjects were rewarded for making a successful turn, and lost income if they crashed. The experimental design provided opportunities for subjects to develop subjective beliefs about when it would be safe to turn, and it also elicited their attitudes towards risk. A simple structural model was used to explain behavior, and showed clear indications of heterogeneity in both the subjective beliefs that subjects formed and their risk attitudes. We find that subjective beliefs change with experience in the task and the driver's skill. Though a significant difference was observed in the perceived probability to successfully turn among the inexperienced driver's who did and did not crash, no significant difference in drivers' risk attitudes among the two groups. We use experimental economics to design controlled, incentive compatible tasks that provide an opportunity to evaluate the impact of subject's subjective beliefs about when it would be safe to turn, and their attitudes towards risk on their driving safety. This method can help insurance companies determine risk premiums associated with risk attitudes or beliefs of crashing, to better incentivize safe driving.

"Agreeing to Disagree" Type Results under Ambiguity

Presenter: Adam Dominiak
Author: Adam Dominiak and Jean Philippe Lefort

In this paper we characterize the conditions under which it is impossible for non-Bayesian agents to "agree to disagree" on their individual decisions. The agents are Choquet expected utility maximizers in the spirit of Schmeidler (1989, Econometrica 57, 71-587). Under the assumption of a common prior capacity distribution, it is shown that whenever each agent's information partition is composed of unambiguous events in the sense of Nehring (1999, Mat. Soc. Sci. 38,197-213), then it is impossible that the agents disagree on common knowledge decisions, whether they are either posterior capacities or posterior Choquet expectations. Conversely, an agreement on posterior Choquet expectations – but noton posterior capacities - implies that each agent's private information consists of Nehring-unambiguous events. These results indicate that under ambiguity - contrary to the standard Bayesian framework - asymmetric information matters and can explain differences in common knowledge decisions due to the ambiguous nature of agents' private information.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/adominiak.pdf

A quantum approach for determining a state of opinion

Presenter: Francois DuBois
Author: Francois DuBois

We propose to define a notion of state of opinion in order to link politician popularity estimations and voting intentions. We present two ways of modeling: a classic approach and quantum modeling. We test this idea on French data obtained during spring 2012

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/fdubois.pdf

On Prospect Theory In The Dynamic Context

Presenter: Sebastian Ebert
Author: Sebastian Ebert and Philipp Strack

: We show that already a small amount of probability weighting has strong implications for the application of prospect theory in the dynamic context. A naive agent will never stop a stochastic process that represents his wealth. This holds for a very large class of processes, and independently of the reference point and the curvatures of the value and weighting functions. This dynamic result is a consequence of a static result that we call skewness preference in the small: At any wealth level there exists an arbitrarily small gamble (which is sufficiently right-skewed) that a prospect theory agent wants to take. By choosing a proper stopping strategy the agent can always implement such a gamble and thus never stops. We illustrate the implications for dynamic decision problems such as irreversible investment, casino gambling, and the disposition effect.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/sebert.pdf

Tactical ignorance? Selective attention and the trading behavior of individual investors

Presenter: Daniel Egan
Author: Daniel Egan, Svetlana Gherzi, Emily Haisley

Selective attention to information has been extensively explored in psychology. Postman et al. (1947) called Perceptual Defense Phenomenon (PD) the process where individuals' recognition of offensive, unpleasant, or threatening nature stimuli is delayed or distorted. By measuring skin response, McGinnis (1949)showed that emotional reactivity plays a role in PD, and stated: "perceptual defense is designed to delay the greater anxiety that accompanies actual recognition of the stimulus". We examine individual investors' selective attention to stock market information, building on a recent study by Karlsson, Loewenstein and Seppi. (2009) (KLS). KLSanalyze two data sets, one composed of Swedish citizens and the other of Vanguard clients, and show that portfolio monitoring is influenced by recent market returns. KLS describe the motivation for selective attention as, "… avoiding exposing oneself to

information that one fears will cause psychological discomfort", a pattern they term the Ostrich Effect. In their model, investors log-in more in the rising markets, and less in falling markets. We improve on KLS with a deeper dataset, including individual level logins, transactions, and demographic data and a restructured analysis which removes several potential sources of bias. We confirm the persistence of the "recognition utility" of positive returns- from a pooled baseline login probability of 30%, each 1%increase in today's market return increases the probability of logging in by 7%. However, we also find that market uncertainty (as represented by the implied market volatility index (VIX)) likewise increases log-ins. An increase in the VIX of 10increases the probability of login by 4%. As this uncertainty (VIX) is purely a forward-looking measure, we find evidence that investors do not "stick their heads in the sand", but rather increase attention during stressful or uncertain periods. Individuals do log-in for purely gratification seeking purposes after positive moves, but also log-in more when market risk is higher. We extend the analysis to transactions, and find that trades-per-login show systematic patterns consistent with the "recognition utility" theory. In flat and rising markets, trades-per-login are low, but trades-per-login increase sharply during days with negative returns. In other words, good periods are associated with more logins and less trading, which reverses sharply when markets fall. Finally we examine selective attention influences behavior in a positive manner. We hypothesize that if investors who do not log-in during volatile periods are using' emotional coping mechanisms' to improve their trading behavior. We compare similar baseline investors, and contrast the performance of those who log-in less during volatile and falling markets compared to those who log-in more than expected. We discuss the influence of selective attention on common investing phenomena such as myopic loss aversion and the disposition effect.

Preferences or Constraints? An Explanation for Probability-Dependent Risk Attitudes

Presenter: Thomas Epper
Author: Thomas Epper

A large body of evidence documents that people weight probabilities nonlinearly. This paper shows that this behavior is not necessarily driven by decision makers' probabilistic risk preferences, but may result from rational expected utility maximizers' responses to environmental constraints. Limited market access and poor endowments may induce risk averse decision makers to take higher risks than their preferences suggest. I derive a simple model capturing this intuition and demonstrate that it accommodates a large number of phenomena indecision making under risk, some of which cannot be explained by extant models of choice under risk.

Reference Dependence or Asset Integration? A Test of Competing Hypotheses for Choice under Risk

Presenter: Thomas Epper
Author: Thomas Epper and Helga Fehr

We analyze a rich data set on 153 individuals' risky choices over a large number of gain and loss prospects. Prospects covered a wide range of outcomes, up to an average subject's monthly income. Subjects were paid in an incentive-compatible manner. Each loss prospect was accompanied by an initial endowment leading to the same terminal outcome as a gain prospect. Therefore, prospects in the loss domain differed from prospects in the gain domain only in presentation format. This framing manipulation permits us to test three main hypotheses: First, asset integration which predicts identical behavior over gains and losses; second, reference dependence which predicts domain-specific behavior; third, an even stronger hypothesis, reflection (Kahneman and Tversky 1979), which predicts risk aversion over gains and risk seeking over losses. Our analysis yields surprising results: We find that the large majority of subjects are risk averse in both domains or risk seeking in both domains. However, they exhibit comparatively higher risk tolerance over losses, but the effect is extremely small. While not perfectly consistent with asset integration, the weakness of the effect clearly contradicts an S-shaped utility function as well as the reflection hypothesis. A minority of subjects exhibit systematic domain-specific behavior that can be classified as follows: One group displays the classical reflection effect while an even smaller group exhibits reverse reflection. We discuss potential explanations.

Sampling Experience Reverses Preferences for Ambiguity

Presenter: Eyal Ert
Author: Eyal Ert, Stefan Trautmann

People often need to choose between alternatives with known probabilities (risk) and alternatives with unknown probabilities (ambiguity). Such decisions are characterized by attitudes towards ambiguity, which are distinct from risk attitudes. Studies of ambiguity attitudes have thus far focused on the static case of single choice, finding ambiguity aversion for medium and high probability events, and ambiguity seeking for low probability events. However, in many situations, decision makers may be able to sample outcomes of an ambiguous alternative, allowing for inferences about its probabilities. The current paper finds that such sampling experience completely reverses ambiguity attitudes. It further shows that this reversal of preferences cannot be explained by participants' updated probabilistic beliefs, suggesting more complex motivational and processing effects.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/eert.pdf

Impatience and Incentive Effects

Presenter: Helga Fehr
Author: Thomas Epper and Helga Fehr

A substantial number of experimental studies of time discounting behavior is based on hypothetical choices. However, little is known about the effects of monetary incentives on discounting behavior, and the evidence so far is inconclusive. In this paper we study the discounting behavior of a representative sample of the adult German speaking Swiss population. There were two treatment groups: One group of subjects responded to hypothetical tasks, in the other group every single subject was paid in an incentive-compatible manner. Subjects we represented with the same intertemporal choice tasks 8 months after the first wave of experiments. The following results emerged: Contrary to risk taking behavior, where we did not find any significant treatment effect, average discount rates in the hypothetical treatment exceeded discount rates in the real treatment by 17percentage points p.a. in the first wave. This substantial and highly significant incentive effect even increased in the second wave: Whereas average discount rates in the hypothetical treatment remained stable, real rates declined, resulting in a treatment effect of28 percentage points p.a. Our findings suggest that, in the domain of time discounting, real decisions are fundamentally different from hypothetical decisions.

Calibration without reduction for nonexpected utility

Presenter: David Freeman
Author: David Freeman

Evidence from the lab and the field shows that most people exhibit substantial risk aversion over stakes of hundreds of dollars. Expected utility cannot capture nonnegligible risk aversion over such small stakes without producing implausible risk aversion over large stakes, and under the reduction of compound lotteries axiom, neither can nonexpected utility preferences. Motivated by experimental evidence, this paper assumes that compound lotteries are evaluated recursively and shows that popular nonexpected utility models can be consistent with empirically plausible risk aversion over both small and large stakes.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/dfreeman.pdf

Time-tradeoff Sequences for Analyzing Time Inconsistency in Health and Money

Presenter: Yu Gao
Author: Han Bleichrodt, Yu Gao, Kirsten I.M. Rohde

Intertemporal choice concerns choices between small-sooner and larger-later outcomes. Several methods have been used to study intertemporal choices in different domains (e.g., money, health, holidays, restaurant meals, etc). This paper focuses on delay discounting and time inconsistency in both health and money, and uses time-tradeoff (TTO) sequences as a general tool to analyze data provided by an experiment. The novelty of this paper is that it uses TTO sequences to analyze time preferences for

health, and to compare these with time preferences for money. More specifically, TTO sequences measure the deviation from stationarity. Although discount rates for money and health have already been compared by some studies (Cairns 1992, Chapman and Elstein 1995, Chapman 1996, Hardisty and Weber 2009, etc), we are the first to compare the degree of deviation from stationarity for health with the one for money.

Eliciting farmers' risk and ambiguity preferences

Presenter: Xavier Gassmann
Author: Douadia Bougherara, Xavier Gassmann, Laurent Piet And Arnaud Reynaud

Risk and ambiguity are pervasive in farming activities. Although agricultural economists have a long tradition of analyzing risk, there is still alack of understanding of farmers' risk and ambiguity preferences. We aim at structurally estimating these preferences. We use a model that combines a second order model for ambiguity and a model that allows for differences in utility in the gain and loss domains and probability distortion. Moreover, we allow for an endogenous reference point that we estimate. We collect responses from 197 farmers. We find (i) farmers are slightly risk averse in the gain and loss domains and havean inverse s-shaped probability weighing function for risk; (ii) farmers are slightly ambiguity averse in the gain domain and ambiguity neutral in the loss domain and have an inverse s-shaped probability weighing function in the gain domain but do not distort probabilities in the loss domain; (iii) farmers have a positive reference point.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/xgassmann.pdf

Desert and inequity aversion in teams

Presenter: David Gill
Author: David Gill (Oxford University), Rebecca Stone (NYU)

Teams are becoming increasingly important in work settings. We develop a framework to study the strategic implications of a meritocratic notion of desert under which team members care about receiving what they feel they deserve. Team members find it painful to receive less than their perceived entitlement, while receiving more may induce pleasure or pain depending on whether preferences exhibit desert elation or desert guilt. Our notion of desert generalizes distributional concern models to situations in which effort choices affect the distribution perceived to be fair; in particular, desert nests inequity aversion over money net of effort costs as a special case. When identical teammates share team output equally, desert guilt generates a continuum of symmetric equilibria. Equilibrium effort can lie above or below the level in the absence of desert, so desert guilt generates behavior consistent with both positive and negative reciprocity and may underpin social norms of cooperation.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/dgill.pdf

On the Rejectability of the Subjective Expected Utility Theory

Presenter: Konrad Grabiszewski
Author: Konrad Grabiszewski

State space is an element of the Subjective Expected Utility (SEU) theory that is constructed in the agent's mind but is not directly observable. The researcher who verifies whether or not the agent violates the SEU theory could presume a state space but he risks reaching conclusions based on false assumptions. As an alternative approach, I propose SEU-rationalization: From the agent's observable choices, the researcher constructs the state space and belief over that state space such that the agent appears to satisfy the SEU theory. I derive conditions under which it is possible to SEU-rationalize the agent's behavior.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/kgrabiszewski.pdf

Learning to be Probabilistically Sophisticated

Presenter: Yoram Halevy
Author: Yoram Halevy

Risk equivalents to uncertain environments are elicited in an experiment that controls the instruction level subjects receive. We find much higher frequency of probabilistically sophisticated behavior than in previous experiments that elicited certainty equivalents, and establish a causal relation between reduction of compound objective lotteries and ambiguity attitude.

Preferences of Migrants: A Field Experiment in China

Presenter: Li Hao
Author: Li Hao, Daniel Houser, Lei Mao and Marie Claire Villeval

In this paper we study whether migration decisions can be predicted by one's preferences regarding risk, ambiguity, inequality aversion, and competitiveness. We conducted field experiments in six locations in China. Three on the east coast (East China), and three inland (West China). Subjects are either (i)migrant workers, (ii) non-migrant workers in an area with migrants, or (ii)non-migrant workers in an area without migrants. Our main findings are twofold. First, migrants are significantly more likely to enter in a market entry game than non-migrants. Second, workers in East China, whether migrants or not, demonstrate a higher tolerance for risk, ambiguity and inequality than their counterparts in West China. Our results suggest that migration may be driven more by competitive impulses than attitudes towards risk or inequality. If holding a job is considered 'winning', then this competitive orientation may help to explain both the nature of positions offered to migrants, as well as their willingness to devote substantial work effort to those positions.

Asset Integration and Attitudes to Risk: Theory and Evidence

Presenter: Glenn Harrison
Author: Steffen Andersen, James C. Cox, Glenn W. Harrison, Morten Lau, E.

Measures of risk attitudes derived from experiments are often questioned because they are based on small stakes bets and do not account for the extent to which the decision-maker integrates the prizes of the experimental tasks with personal wealth. We exploit the existence of detailed information on individual wealth of experimental subjects in Denmark, and directly estimate risk attitudes and the degree of asset integration consistent with observed behavior. The behavior of the adult Danes in our experiments is consistent with partial asset integration: they behave as if some small fraction of personal wealth is combined with experimental prizes in a utility function, and that this combination entails less than perfect substitution. Our subjects do not perfectly asset integrate. The implied risk attitudes from estimating these specifications imply risk premia and certainty equivalents that are a priori plausible under expected utility theory or rank dependent utility models. These are reassuring and constructive solutions to payoff calibration paradoxes. In addition, the rigorous, structural modeling of partial asset integration points to a rich array of neglected questions in risk management and policy evaluation in important field settings.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/gharrison.pdf

Multiattribute Utility Theory, Intertemporal Utility and Correlation Aversion

Presenter: Glenn Harrison
Author: Steffen Andersen, Glenn W. Harrison, Morten Lau and E. Elisabet Rutström

Convenient assumptions about qualitative properties of the intertemporal utility function have generated counter-intuitive implications for the relationship between a temporal risk aversion and the intertemporal elasticity of substitution. If the intertemporal utility function is additively separable then the latter two concepts are the inverse of each other. We review a simple theoretical specification with a long lineage in the literature on multi-attribute utility, and demonstrate the critical role of a concept known as intertemporal risk aversion or intertemporal correlation aversion. This concept is the intertemporal analogue of amore general concept applied to two attributes of utility, but where the attributes just happen to be the time-dating of the good. In the context of intertemporal utility functions, the concept provides an intuitive explanation of possible differences between (the inverse of) a temporal risk aversion and the intertemporal elasticity of substitution. We use this theoretical structure to guide the design of a series of experiments that allow us to identify and estimate intertemporal correlation aversion. Our results show that subjects are correlation averse over lotteries with intertemporal income profiles, and that the convenient additive specification of the intertemporal utility function is not an appropriate representation of preferences over time.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/gharrison2.pdf

On the Axiomatization of the Satiation and Habit Formation Utility Models

Presenter: Ying He
Author: Ying He, James S Dyer, John C Butler

We propose a preference condition called shifted difference independence to model reference point dependent measurable time preference. Based on this condition, we axiomatize a general habit formation and satiation model (GHS) to capture both habit formation and satiation effects. This model allows for a general habit formation and satiation function that contains the functional forms in the existing literature as special cases. Since the GHS model can be reduced to either a general satiation model (GSa) or a general habit formation model (GHa), our theory also provides approaches to axiomatize both the GSa model and the GHa model. By adding more preference conditions into our framework, we axiomatize a GHS model with a linear habit formation function and a recursively defined linear satiation function. Finally, we show that the ideas developed in this paper also apply to the axiomatization of models for risky time preference.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/yhe.pdf

Prudential Saving: Evidence from a Laboratory Experiment

Presenter: Christoph Heinzel
Author: AJ A. Bostian, Christoph Heinzel

Prudence is a behavioral attitude that is broadly applicable to settings involving risk. It has particular importance in intertemporal choice theory, where it can be interpreted as the intensity of intertemporal substitution. Prior laboratory experiments to elicit prudence have addressed it in a pure-risk sense, by examining behavior in static lotteries and other gambles. It is tempting to impute these results into an intertemporal context, leveraging the fact that “risk aversion” and "elasticity of intertemporal substitution” are directly mappable under univariate discounted expected utility. However, many empirical studies of intertemporal behavior suggest that the two ideas may be distinct. To address prudence in its intertemporal sense, we instead design a small-scale laboratory experiment around a two-period consumption/savings model. The utility concept in this model disentangles risk preferences from intertemporal preferences, and suggests the type of exogenous variation to present to subjects in the experiment. The experiment uses a constrained “fill in the blank" design with scenarios involving either income risk or interest-rate risk. In each scenario, subjects must choose how much of their first-period income to save for the second period. The design also implements field-like wealth levels and real time lags to ameliorate the possibility of the decisions being a laboratory artifact. We estimate risk and intertemporal preferences at the individual level using a subject's savings data and the model’s structural Euler equation. Excluding outliers, the average coefficient of relative risk aversion is 2.06, the average elasticity of intertemporal substitution is 0.75, and the average coefficient of relative prudence is 3.90. These averages mask a good deal of subject-level heterogeneity, as the respective coefficients of variation are, at a minimum, 70%.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/cheinzel.pdf

Term Structure of Discount Rates under Multivariate s-Ordered Consumption Growth

Presenter: Christoph Heinzel
Author: Christoph Heinzel

The statistical relationship between future changes in consumption can be exploited to derive, under certain assumptions on investor preferences, an unambiguous effect on the yield-curve shape of zero-coupon bonds, viz., the term structure of discount rates. Thus, an increase in concordance in uncertain consumption growth has a negative impact on the yield-curve slope if, and only if, the representative investor is correlation averse (Gollier, "Pricing the future", to appear). Using multivariate s-concave stochastic orderings, this paper generalizes this relationship to multivariate higher-order risk preferences. The result under concordance is included for bivariate (1,1)-concave orders. Similar generalizations arise for the good-specific discount rates and their relationships in a stochastic multigood economy. The effect on the yield curve decreases absolutely with initial consumption for a given stochastic deterioration in the random addends to initial consumption. In an approximate representation of the interest rate for the univariate case, the effects on the yield curve are controlled by the Ross coefficients of risk aversion.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/cheinzel.pdf

The Neural Substrate and Functional Integration of Uncertainty in Decision Making: An Information Theory Approach

Presenter: Franz Heukamp
Author: Joaquin Goni, Maite Aznarez-Sanado, Gonzalo Arrondo, Maria Fernandez-Seara, Francis R. Loayza, Franz H. Heukamp, Maria A. Pastor

Decision making can be regarded as the outcome of cognitive processes leading to the selection of a course of action among several alternatives. Borrowing a central measurement from information theory, Shannon entropy, we quantified the uncertainties produced by decisions of participants within an economic decision task under different configurations of reward probability and time. These descriptors were used to obtain blood oxygen level-dependent (BOLD)signal correlates of uncertainty and two clusters codifying the Shannon entropy of task configurations were identified: a large cluster including parts of the right middle cingulate cortex (MCC) and left and right pre-supplementary motor areas(pre-SMA) and a small cluster at the left anterior thalamus. Subsequent functional connectivity analyses using the psycho-physiological interactions model identified areas involved in the functional integration of uncertainty. Results indicate that clusters mostly located at frontal and temporal cortices experienced an increased connectivity with the right MCC and left and right pre- SMA as the uncertainty was higher. Furthermore, pre-SMA was also functionally connected to a rich set of areas, most of them associative areas located at occipital and parietal lobes. This study provides a map of the human brain segregation and integration (i.e., neural substrate and functional connectivity respectively) of the uncertainty associated to an economic decision making paradigm.

Non-Multiple Prior Models of Decision Making Under Ambiguity: experimental evidence

Presenter: John Hey
Author: John D Hey and Noemi Pace

We examine the performance of non multiple-prior models of decision making under uncertainty/ambiguity from the perspective of their descriptive and predictive power. Focusing on the class of theories that proceed indirectly through the use of a preference functional, we try to answer the question as to whether the new generalizations of the Subjective Expected Utility theory are significantly better than SEU. We employ an innovative experimental design which enables us tore produce ambiguity in the laboratory in a transparent and non-probabilistic way, using a Bingo Blower (BB). We operate with a very simple experiment in which there are three possible events (the colors of the table-tennis balls in the BB). We ask subjects to allocate a given total number of tokens to the three events, given certain exchange rates between tokens and money. When we play out a particular decision problem, we draw one ball from the BB and subjects are paid in money the number of tokens that they allocated to that event multiplied by the exchange rate. In contrast with previous experiments, rather than carrying out statistical test comparing the various theories, we apply a constrained maximum likelihood procedure for the generation of maximum likelihood estimates of models with general constraints on parameters to assess which of the new generalizations of SEU has the relatively better performance. In implementing the maximum likelihood procedure we use three different stochastic specifications; interestingly we find that there are bigger differences in the maximised log-likelihoods across stochastic specifications than across preference functionals.

Time Preference and Technology Adoption: A Single-Choice Experiment with U.S. Farmers

Presenter: Nathaniel Higgins
Author: Eric Duquette, Nathaniel Higgins, John Horowitz

We elicit experimentally time-discounting behavior from U.S. farmers that are known to be either late or early adopters of a broadly-defined agricultural technology. Within a singlechoice experiment framework, we estimate bounds on the average discount rate for each group and find that late adopters have a mean discount rate that is thirteen percentage points higher (compounded daily) than the mean rate of early adopters. We show through simulations that this difference is, in contrast to previous research, vastly less affected by potential differences in riskaversion when farmers are assumed to optimally smooth consumption of experimental payments. Our findings provide strong evidence for the potential effects of time discounting on the technology adoption behavior of farmers and suggest the possibility for cost-effective improvements in programs that aim to improve agricultural outcomes.

Time pressure and ambiguity attitude

Presenter: zhenxing huang
Author: Aurelien Baillon, Asli Selim, Zhenxing Huang

Since Ellsberg constructed his classical experiment in 1961,ambiguity has been widely studied in economics and decision theory. The recent study by Abdellaoui et al (2011, American Economic Review) proposed a source method to decompose ambiguity attitude into two components: (1) ambiguity aversion and (2)ambiguity-generated insensitivity (abbreviated a-insensitivity). The latter is a cognitive component capturing the difficulty for people to discriminate between likelihood levels under ambiguity. This paper examines the impact of time pressure on both components in a lab experiment. By eliciting subjects' matching probabilities of uncertain events (stock indexes) both with and without time pressure and with real monetary incentives, we measured ambiguity aversion and a-insensitivity and studied how time pressure affected them. Our results show that time pressure leads to more a-insensitivity, implying that the cognitive ability to discriminate different levels of likelihood pressure is worsened under time pressure. Time pressure does not affect ambiguity aversion. These results are consistent with the cognitive interpretation of a-insensitivity versus the motivational interpretation of ambiguity aversion.

Price as a choice and nonstochastic randomness in finance

Presenter: Yaroslav Ivanenko
Author: Yaroslav Ivanenko and Bertrand Munier

Closed sets of finitely-additive probabilities are statistical laws of statistically unstable random phenomena. Decision theory, adapted to such random phenomena, is applied to the problem of valuation of European options. Embedding of the Arrow-Debreu state preference approach to options pricing into decision theoretical framework is achieved by means of considering option prices as decision variables. A version of indifference pricing relation is proposed that extends classical relations for European contingent claims to statistically unstable random behavior of the underlying. A static hedge is proposed that can be called either the model specification hedge or the uncertainty hedge or the generalized Black-Scholes delta. The obtained structure happens to be a convenient way to address such traditional problems of mathematical finance as derivatives valuation in incomplete markets, portfolio choice and market microstructure modeling.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/yivanenko.pdf

Discovered Preferences for Risky and Non-Risky Goods

Presenter: Sarah Jacobson
Author: Jason Delaney, Sarah Jacobson, Thorsten Moenig

Are preferences stable or do they evolve with experience? While the assumption of stable preferences seems reasonable for many items, the stochastic nature of experience with risk could make risk preferences appear unstable because of incomplete learning. This accords with evidence of apparent instability of or evolution in risk preferences from lottery experiments. We develop a model of preference learning that could yield both well-formed (fully learned) preferences for most non-stochastic goods and imperfectly-formed preferences for stochastic items. In the model, an agent's value for a non-stochastic good is learned with a single experience but her value for a stochastic good requires several experiences to be learned. When infinite time has elapsed, nearly all stochastic good and stochastic goods have their values fully updated; however, because of this difference, at finite time stochastic goods are less likely to be correctly valued. Further, if learned preferences are imperfectly remembered (if they decay), agents' values for stochastic items tend to remain farther from their true values as compared to values for non-stochastic items. This model retains stable inherent preferences, but allows for evolution of expressed preferences in a predictable and intuitively appealing manner.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/sjacobson.pdf

Alternation Bias and Reduction in St. Petersburg Gambles: An Experimental Investigation

Presenter: Kim Kaivanto
Author: Kim Kaivanto and Eike B. Kroll

The Reduction of compound lotteries is an implicit assumption both in the statement of the St. Petersburg Paradox as well as in its resolution by Expected Utility (EU). Yet despite the pivotal role of this assumption, to date there has been no empirical substantiation of its validity. Here we report three real-money experiments in which the standard compound-lottery form of the (truncated) St. Petersburg Gamble is explicitly juxtaposed with its reduced form. In the first experiment, we elicit Subjects' Certainty Equivalents for each form of the gamble. In the second experiment, Subjects choose between reduced and compound forms within a multiple price list format, where a different sure payment (in Euro 1 increments), is added either to the reduced or the compound form. With this instrument, we can test for both `weak-form' and `strong-form' violations of Reduction. The third experiment replicates the second and then checks for robustness against range and increment manipulation. In the first experiment we find that the Certainty Equivalent of the compound form is stochastically dominated by, and significantly smaller than, the objectively equivalent reduced form. This bias toward the reduced form is borne out in the second and third experiments, where 90%–100% display weak-form violation and 48%–87.5% display strong-form violation. These results are consistent with the operation of

alternation bias, which may be understood as a subjective distortion of conditional probability. Together these experiments offer evidence that the Reduction assumption may have limited descriptive validity in St. Petersburg Gambles.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/kkaivanto.pdf

The Effect of Ambiguity Aversion on Reward Scheme Choice

Presenter: Christian Kellner
Author: Christian Kellner, Gerhard Riener

We test the implications of ambiguity aversion in a principal-agent problem with multiple agents. Models of ambiguity aversion suggest that, under ambiguity, comparative compensation schemes may be-come more attractive than independent wage contracts. We test this by presenting agents with a choice between comparative reward schemes and independent contracts, which are designed such that under uncertainty about output distributions (that is, under ambiguity), ambiguity averse agents (and only those) should typically prefer comparative re-ward schemes, independent of their degree of risk aversion. We indeed find that the share of agents who choose the comparative scheme is higher under ambiguity than in the case of known output distributions.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/ckellner.pdf

When is Ambiguity Attitude Constant

Presenter: David Kelsey
Author: Jurgen Eichberger, Simon Grant and David Kelsey

This paper studies how updating affects ambiguity-attitude. In particular we focus on the generalized Bayesian update of the Jaffray-Phillipe sub-class of Choquet Expected Utility preferences. We find conditions for ambiguity-attitude to be the same before and after updating. A necessary and sufficient condition for ambiguity-attitude to be unchanged when updated on an arbitrary event is for the capacity to be neo-additive. We find a condition for updating on a given partition to preserve ambiguity-attitude. We relate this to necessary and sufficient conditions for dynamic consistency. Finally we study whether ambiguity increases or decreases after updating.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/dkelsey.pdf

Natural Characterizations of Classical Discount Models in terms of Present Values

Presenter: Umut Keskin
Author: Han Bleichrodt, Umut Keskin, Kirsten Rohde, Vitalie Spinu, Peter Wakker

In a finite and discrete time setting with no uncertainty, we study individuals' time preferences in terms of present values. We find that a specific mathematical formula for present value can be justified if and only if the present value behaves in a certain way from the relevant agent's point of view. In addition, we show that each one of these behavioral characterizations of present value also constitutes the necessary and sufficient condition for a different utility representation form and its underlying preference conditions. This gives us a four-fold characterization for six different models commonly used in economics and finance, which enables us to analyze rather complex components of each model with a very intuitive and simple concept, i.e. the present value.

Polarization and Ambiguity

Presenter: Peter Klibanoff
Author: Sandep Baliga, Eran Hanany, Peter Klibanoff

We offer a theory of polarization as an optimal response to ambiguity. Suppose individual A's beliefs first-order stochastically dominate individual B's. They observe a common signal. They exhibit polarization if A's posterior dominates her prior and B's prior dominates her posterior. We show a sense in which polarization is impossible under Bayesian updating or after observing extreme signals. However, we also show that polarization after intermediate signals can arise from the efforts of ambiguity averse individuals to implement their optimal prediction strategies. We explore when polarization of this kind will occur and the logic underlying it.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/pklibanoff.pdf

Decision utility or probability weighting?

Presenter: Krzysztof Kontek
Author: Krzysztof Kontek

Prospect Theory (1979) and its Cumulative version (1992) argue for probability weighting to explain lottery choices. Decision Utility Theory (Kontek, 2011) presents an alternative solution, which makes no use of this concept. The new theory postulates a double S-shaped decision utility curve similar to the one hypothesized by Markowitz (1952). The only difference is that gains and losses are considered in relative rather than in absolute terms. This suffices to explain the Allais Paradox and the Common Ratio Effect. Moreover, the convex-concave-convex-concave shape of the decision utility curve substitutes the description of "the fourfold pattern of risk attitude" as the combination of the value and the probability weighting functions.

Aspiration level and unconfidence level are the two psychological effects which determine the shape of the decision utility curve, and explain behaviors observed in risky decision-making. General attitude to risk is described by the area below the decision utility curve. This helps to explain also the Ellsberg paradox.

Expected decision utility vs. Rank-dependent utility

Presenter: Krzysztof Kontek
Author: Krzysztof Kontek

Cumulative Prospect Theory (1992) evaluates multi-outcome lotteries using the RDU model and probabilities considered cumulatively. Decision Utility Theory (Kontek, 2011) applies the expected decision utility value similarly to the theory of von Neumann and Morgenstern (1944). The formula uses, however, gains and losses expressed in relative rather than in absolute terms. Probabilities are considered linearly and expected decision utility determines the probability of the equivalent two-outcome lottery. This results in a single value to describe the lottery, however many outcomes it has.

As stated in the experiment conducted, CPT systematically undervalues multi-outcome lotteries for risk averse subjects and systematically overvalues them for risk seeking subjects. This confirms earlier results of Gonzales and Wu (2003). As a result, roughly 2/3 of the subjects were more accurately described by the decision utility model than by CPT. Even more importantly, the decision utility model prevailed over CPT for 4/5 of the generally risk averse subjects. It turns also out that the way in which CPT evaluates particular multi-outcome lottery payments does not in any way correspond with how respondents subjectively assess them.

The St. Petersburg Paradox despite risk-seeking preferences: An experimental study

Presenter: Eike B. Kroll
Author: James C. Cox, Eike B. Kroll, Vjollca Sadiraj, and Bodo Vogt

The St. Petersburg Paradox is one of the oldest violations of expected utility theory. Thus far, explanations of the paradox aim at small probabilities being perceived as zero and the boundedness of utility. This paper provides experimental results showing that neither risk attitudes nor perception of small probabilities explain the paradox. We find that even in situations where subjects are risk-seeking, and zeroing-out small probabilities supports risk taking, the St. Petersburg Paradox exists. This indicates that the paradox cannot be resolved by the arguments advanced to date.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/ekroll.pdf

Ambiguity and compound risk attitudes: an experiment

Presenter: Placido Laetitia
Author: Mohammed Abdellaoui, Laetitia Placido and Peter Klibanoff

The identification of compound risk attitudes and ambiguity attitudes has recently received experimental support (Halevy, 2007) and been incorporated in decision models (Seo, 2009; Halevy and Ozdenoren, 2008; Segal,1987). Non reduction of compound lotteries is this literature's explanation of Ellsberg type behavior. We conduct an experiment measuring individual behavior under simple risk, under various types of compound risk and under ambiguity. We examine how each of these behaviors changes as the probability (or size) of the winning event varies. We find that attitudes towards all three types of uncertainties move from seeking to aversion as the probability level increases. Controlling for probability level, we find that the link between ambiguity and compound risk attitudes is partial and sensitive to the type of compound risk considered. We do not support the equivalence between reduction of these compound risks and ambiguity neutrality.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/lplacido.pdf

Quantum Type Indeterminacy in Dynamic Decision-Making

Presenter: Ariane Lambert-Mogiliansky
Author: Ariane Lambert-Mogiliansky and Jerome Busemeyer

The Type Indeterminacy model is a theoretical framework that uses some elements of quantum formalism to model the constructive preference perspective suggested by Kahneman and Tversky. In this paper we show that in a dynamic decision context type indeterminacy induces a game with multiple selves. In contrast with standard approaches all interaction is among contemporous potential selves. Indeterminacy alone suffices to deliver a theory of self management in terms of a Markov perfect equilibrium with identity as the state variable. The approach allows to characterize generic personality types.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/alambert_mogiliansky.pdf

Diversifying over Ambiguity: How People Evaluate Multiple Uncertain Prospects

Presenter: Dolchai La-ornual
Author: Dolchai La-ornual

In this essay, I examine whether individuals perceive benefits from diversification when prospects are ambiguous and how those benefits compare to analogous situations under risk. Based on Gilboa and Schmeidler's (1989) maxmin expected utility model, I hypothesize that only risk-seeking individuals would receive non-zero diversification benefits. In particular, these decision-makers would receive negative benefits from diversification. And as the degree of ambiguity increases, these negative benefits would be ameliorated for potential gains, but further exacerbated for potential losses. Results from a

series of experiments suggest that people may perceive less benefit from diversification under ambiguity than under risk. However, individuals tend to diversify over a greater number of prospects when the prospects are ambiguous than when they are risky. This may be due to people's attempt to compensate for the lower marginal benefit of diversifying under ambiguity than under risk. It also implies a decrease in tolerance toward aleatory uncertainty in presence of epistemic uncertainty.

Discounting Behavior and the Magnitude Effect: Evidence from a Field Experiment in Denmark

Presenter: Morten I. Lau

Author: Steffen Andersen, Glenn W. Harrison, Morten I. Lau and E. Elisabet Rutström

We evaluate the claim that individuals exhibit a magnitude effect in their discounting behavior, which is said to occur when higher discount rates are inferred from choices made with lower principals, all else being equal. If the magnitude effect is quantitatively significant it is not appropriate to use one discount rate or discounting function, independent of the scale of the project, for the purposes of cost-benefit analysis and capital budgeting. If the effect is robust, as claimed, we should be able to see it using procedures that are more familiar to economists. Using data collected from a representative sample of adult Danes, we find statistically significant evidence of a small magnitude effect, at levels that are much smaller than is typically claimed. This evidence only surfaces if one carefully controls for unobserved individual heterogeneity in the population.

Willingness to Pay for Insurance in Denmark

Presenter: Morten I. Lau

Author: Rasmus H. Jacobsen, Jan V. Hansen and Morten I. Lau

We estimate the maximum amount that Danish households are willing to pay for three different types of insurance: auto, home and house insurance. We use a unique combination of claims data from the largest private insurance company in Denmark, measures of individual risk attitudes and discount rates from a field experiment with a representative sample of the adult Danish population, and information on household income and wealth from registers at Statistics Denmark. We assume that households maximize expected inter-temporal utility subject to aninter-temporal budget constraint with several possible states of nature, where all uncertainty is realized in the initial period and any loss incurred by an accidents subtracted from initial wealth. The estimated willingness to pay is based on annual claims and should thus be considered as an annual premium. Since there is some uncertainty about the estimates of risk attitudes and discount rates, there is some uncertainty about the estimated willingness to pay. We use a randomized factorial design in our sensitivity analysis where each simulation involves a random draw from independent normal distributions of the estimated risk and time preferences. The results show that the willingness to pay is marginally higher than the actuarial fair value under Expected Utility Theory. However, the willingness to pay may be up to ten times higher for some household groups when we allow for probability weighting and assume Rank Dependent Utility Theory compared to the estimated values under EUT.

Loss Aversion: An Evolutionary Perspective

Presenter: Moshe Levy
Author: Moshe Levy

Loss aversion is a central element of modern theories of choice. While loss aversion has been extensively documented experimentally and empirically, and is employed to explain important economic phenomena such as the equity premium, its origins are not yet well understood. We suggest that loss aversion is a consequence of the evolutionary objective of minimizing the probability of extinction of one's line of descendants. A simple relationship is derived between the equilibrium loss aversion coefficient and the extinction probability. Empirical estimates of the extinction probability imply a loss aversion coefficient of 2.17, a value close to the estimates obtained experimentally.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mlevy.pdf

Learning and Investor Behavior under Ambiguity

Presenter: Chen Li
Author: Aurélien Baillon, Han Bleichrodt, Olivier l'Haridon, Umut Keskin, Chen Li

Although psychological and economic evidence supporting the existence of sources of uncertainty abounds, most of them adopted a static perspective by comparing different sources at a fixed point in time. This paper took a dynamic perspective and the formation and evolution of source is the result of learning of new information. We ran an experiment in which subjects receive new information about sources. By adopting a new elicitation method that allowed us to separate change of belief from change of attitude, we studied the evolution of their attitude towards ambiguity. Our findings show that, new information increased subjects' sensitivity to changes in likelihood but their (dis)like of the source(ambiguity aversion) was unaffected. Sensitivity to likelihood is often considered a cognitive component of people's ambiguity attitude, while ambiguity aversion is considered as a motivational component. Our findings suggest that, through learning of information, subjects became more competent in distinguishing the difference between different likelihoods, implying a cognitive improvement.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/cli.pdf

Prior Incentive System: A New Approach to Improve the Implementation of Individual Choice Experiments

Presenter: Zhihua Li
Author: Cathleen Johnson, Aurélien Baillon, Han Bleichrodt, Dennie van Dolder, Zhihua Li, Peter P. Wakker

We introduce a new experimental design for individual decision theory, the PRior INCEntive system (PRINCE), to measure several decisions from each participant while ensuring that each decision is perceived as one-shot by each participant. We believe PRINCE will bring improvements for overall individual decision making experiments. It enhances isolation thinking and creates an intuitive way for subjects to understand the decision situation. Moreover, our system also incentivizes chained experiments without any space for strategic answering. Finally, we demonstrate that PRINCE can make the experiment procedure be 100% verifiable.

Group decision rule and group rationality underrisk

Presenter: Ning Liu
Author: Aurélien Baillon, Han Bleichrodt, Ning Liu, Peter P. Wakker

This paper is about helping groups to be more rational when making decisions under risk. Based on the previous research on individual decision rationality, we carry out this study to investigate group rationality under risk contingent on two group decision rules, the majority rule and the unanimity rule. In the experiment, the subjects make decisions at three sequential stages, the first and last of which are individual decision making stages. At the second stages of the majority treatment and the unanimity treatment, subjects make decisions in group of three using the corresponding decision rules. This design, with a control treatment of three individual decision making stages, enables us to compare group decisions under the two rules. We find that groups under unanimity rule are less rational than those under majority rule, since the unanimity groups make more decisions that violate expected utility than the majority groups do.

Information Aggregation With Endogenous Ordering

Presenter: Moritz Lueck
Author: Moritz Lueck, Markus Noeth

Investment decisions are often based on private information and on observing other investors' choices. If choices are made sequentially and timing is determined endogenously, choice ordering may reveal others' information quality. In our experiment with endogenous timing, subjects receive either strong or weak signals. Due to waiting costs, subjects with strong (weak) signals have an incentive to invest immediately (wait). As expected, investment success is significantly higher than in a similar framework with random ordering. However, participants' impatience prevents information aggregation relatively

often. Based on the sophistication of subjects' timing decisions, three types are identified. The classification helps to explain prediction precision both analytically and in a computer simulation.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mlueck.pdf

Preference Reversals and Range effects

Presenter: Hela Maafi
Author: Hela Maafi (GREGHEC – HEC Paris) and Ganna Pogrebna (University of Warwick)

Preference reversals phenomenon occurs when individuals place a higher value on a $-bet (small probability of giving large prize) than on a P-bet (large probability of giving small prize), but prefer the P-bet to $-bet in a straight choice between the two. This paper examines whether, and to what extent, preference reversals between different pairs of lotteries are affected by the interval on which the minimum selling price for each lottery is determined. We constructed two treatments: the narrow range and the wide range treatments. We observe that the selling price of a given lottery increases with the range in which it was elicited. Preference reversals decrease, but do not disappear, when both bets are elicited in the same range. This "range effect" is more pronounced when prices are elicited in a narrow range than in a wide range. Our results suggest that preference reversals cannot be fully explained by existing models of imprecision.

Ambiguity Aversion with Three or More Outcomes

Presenter: Mark Machina
Author: Mark Machina

Ambiguous choice problems which involve three or more outcome values can reveal aspects of ambiguity aversion which cannot be displayed in the classic two-outcome Ellsberg urn problems, and hence are not always captured by models designed to accommodate them. This is primarily due to features of the models which have little bite in the classic examples but which impose strong restrictions in choice over more general prospects. This paper considers several such examples and examines how the standard models of ambiguity aversion perform in such cases.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mmachina.pdf

Reduction of Compound Lotteries with Objective Probabilities: Theory and Evidence

Presenter: Jimmy Martinez-Correa
Author: Glenn W. Harrison, Jimmy Martínez-Correa and J. Todd Swarthout

The reduction of compound lotteries (ROCL) has assumed a central role in the evaluation of behavior towards risk and uncertainty. We present experimental evidence on its validity in the domain of objective probabilities. Our experiment explicitly recognizes the impact that the random lottery incentive mechanism payment procedure may have on preferences, and so we collect data using both"1-in-1" and "1-in-K" payment procedures, where K>1. We do not find violations of ROCL when subjects are presented with only one choice that is played for money. However, when individuals are presented with many choices and random lottery incentive mechanism is used to select one choice for payoff, we do find violations of ROCL. These results are supported by both non-parametric analysis of choice patterns, as well as structural estimation of latent preferences. We find evidence that the model that best describes behavior when subjects make only one choice is the Rank-Dependent Utility model. When subjects face many choices, their behavior is better characterized by our source-dependent version of the Rank-Dependent Utility model which can account for violations of ROCL. We conclude that payment protocols can create distortions in experimental tests of basic axioms of decision theory.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jcorrea2.pdf

Risk Management and Insurance Decisions Under Ambiguity

Presenter: Jimmy Martinez-Correa
Author: Jimmy Martinez-Correa

I study the impact of ambiguity on insurance decisions and the optimality of insurance contracts. My tractable approach allows me to study the interaction between risk and ambiguity attitudes. When insurance decisions are made independently of other assets, for a given increase in wealth, both risk and ambiguity attitudes interact in nontrivial ways to determine the change of coinsurance demand. I derive sufficient conditions to guarantee that the optimal coinsurance demand is decreasing in wealth. When a non-traded asset is introduced, my model predicts behavior that is inconsistent with the classical portfolio theory that assumes Subjective Expected Utility theory; however, it provides hints to a possible solution of the under-diversification puzzle of households. I also identify conditions under which more risk or ambiguity aversion decreases the demand for coinsurance. Additionally, I show a counterexample to a classical result in insurance economics where an insurance contract with straight deductible is dominated by a coinsurance contract. Finally, I find that a modified Borch rule characterizes the optimal insurance contract with bilateral risk and ambiguity attitudes and heterogeneity in beliefs.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jcorrea.pdf

Utility model with a stationary time discount factor

Presenter: Yutaka Matsushita
Author: Yutaka Matsushita

This paper axiomatizes the utility model with an exponential temporal discount rate. An l-PCS with left identity is defined as a PCS with left identity for which the solvability and Archimedean properties are satisfied only related to left-concatenation. This structure has two partial binary operations---multiplication and right division---and a new binary operation is defined on it. Then three conditions are provided to make the l-PCS with left identity into an extensive structure with identity with respect to the newly defined operation. Finally, the utility model is derived from an additive representation on the extensive structure, so that distinct m-period and n-period temporal sequences can be compared.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/ymatsushita.pdf

An Heir and A Spare: Birth Order, Risk Attitude and Teen Risky Behaviors

Presenter: Melayne McInnes
Author: Melayne Morgan McInnes, Erica Von Nessen

Scientific research on the influence of birth order reaches back to at least 1874 and has been the subject of hundreds of published articles across a variety of disciplines. Although a significant amount of research has been directed towards the effects of birth order, there has been less work exploring differences in risk attitudes and participation in risky teenage behaviors between birth orders. Early initiation of these activities has been shown to be associated with serious long term consequence in terms of health and economic outcome variables compared to later initiation. Using data from the Children of the National Longitudinal Survey of Youth we measure the impact of birth order on initiation into the activities of smoking, marijuana usage, sexual intercourse, and drinking. Significant birth order effects are found for the last born of two and three child families across all four activities. These behavior differences suggest firstborns may be more risk averse than their later born siblings. To investigate further, we use the Holt and Laury risk elicitation method to estimate risk attitudes for 399 subjects and also gather information about birth order. We find that participants who are the eldest sibling are significantly more risk averse than their peers.

Testing for Constant Time Preferences without the Utility Curvature Confound

Presenter: Melayne McInnes
Author: Susan K. Laury, Melayne M. McInnes, J. Todd Swarthout, Erica Von Nessen

Much of the literature finding evidence in favor of hyperbolic over exponential discounting has relied on parametric assumptions about the utility function. We use a new method for eliciting curvature-controlled discount rates that require no such assumptions to explore whether elicited discount rates are sensitive to the length of time participants must wait for payment. We manipulate both the horizon

(i.e., the delay between the Sooner and Later payment dates) and the front-end delay (FED) (i.e., the waiting period before the payment date of the Sooner option). In a previous experiment, we used a 3 week FED to hold constant the transaction costs and risks of receiving payment, and our new experiment has FEDs of2 weeks, 1 day, or 0 (i.e., payment is made at the end of the session before the subject leaves the laboratory). Our estimates provide new evidence against constant discounting, particularly when there is the chance at an immediate or one-day payment. However, if the soonest payment date is at least two weeks in the future, then we do not reject constant discounting. Moreover, comparing results from the baseline treatment in the new experiment to those from a previous experiment with similar parameters (2 vs. 3 week FED, 7 vs. 9 week horizon), we find similar estimates(11.3% versus 12.2%).

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mmcinnes.pdf

Optimal choice for finite and infinite horizons

Presenter: Zsombor Z. Meder
Author: Z. Z. Méder, J. Flesch, R. Peeters

This paper lays down conceptual groundwork for optimal choice of a decision maker facing a finite-state Markov decision problem on an infinite horizon. We distinguish two notions of a strategy being favored on the limit of horizons, and examine the properties of the emerging binary relations. After delimiting two senses of optimality, we define a battery of optimal strategy sets – including the Ramsey-Weizacker overtaking criterion – and analyze their relationships and existence properties. We also relate to the work on point wise limits of strategies by Fudenberg and Levine (1983).

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/zmeder.pdf

The use of discrete choice experiments to capture the preferences towards risky treatments

Presenter: Peter Moffatt
Author: Angela Robinson, Anne Spencer and Peter Moffatt

Discrete choice experiments (DCEs) allow a number of characteristics to be traded-off against one another. An overriding methodological challenge faced is how best to apply DCEs to questions involving those attributes commonly used in value elicitation exercises such as risk, time (Bansback et al. 2012) and numbers treated (Robinson et al, 2010). Flynn (2010) concluded that in developing the methods, it was important to understand more fully the preferences of individual respondents. The study reported here sets out to provide such insights by enhancing a DCE design with additional questions that allow utility values to be derived at the individual level also. The DCE presented respondents with eight pairwise risky choices to estimate aggregate utility values for three EQ-5D health states, ranging from mild to severe. The design allowed the elicitation of utility values for worse-than-dead states and visual

aids were used to illustrate the risk information (developed by EuroVaQ http://research.ncl.ac.uk/eurovaq/). Three main devices were used to collect additional individual level data. Firstly we included six additional DCE questions that were not used to estimate the aggregate DCE model but allowed the utility value of one health state to be estimated at the level of the individual. These six questions provided more extensive tests of the internal consistency of the pairwise choices undertaken in the DCE. Secondly, respondents were asked three questions where the risk in one of the two treatments was fixed, and they set the risk of the other treatment (a modified SG question). These questions allowed us to again estimate utility values for the three health states. Finally, we collected respondents risk attitudes using Kuilen and Wakker's 2011 measure. We collected data on a convenient sample of 59 students studying Economics or Geography at the University of London and Exeter in 2011/12. Preliminary results show that 22 of the 59 respondents gave a series of DCE responses that were internally inconsistent. We report here the implications of the results for the inclusion of risk as an attribute in DCEs and for preference elicitation more broadly.

The Impact of Financial and Macroeconomic Factors on Individual Risk Attitude

Presenter: Peter G. Moffatt
Author: Philomena M. BACON, Peter G. MOFFATT

The impact of financial and macroeconomic factors on individual risk attitude are explored using data from the German Socio-Economic Panel (SOEP) over the period 2004 to 2009. The focus of the analysis is the repeated responses to the survey question about general willingness to take risk. Responses to this question are provided on a 0-10 Likert scale. The framework for estimation is the Panel Ordered Probit (POP) model, which respects both the ordinality and the panel structure of the data. Household members are divided into three types: heads, spouses and offspring. Overall, spouses are found to be the most risk averse of the three types, and offspring the least risk averse. A number of macroeconomic and financial indicators are included as explanatory variables, and the effects of these on risk attitude are estimated separately for the three types, while controlling for individual characteristics. Of the macroeconomic and financial factors, by far the most important is German GDP growth in the previous month, which has a positive effect on willingness to take risk for all three types of individual. Next in importance is the level of the German stock market index (HDAX) in the previous month, which has a positive effect on willingness to take risk of heads and spouses, particularly so if retired, but no effect on that of offspring. Various other factors, including inflation, interest rate, and unemployment, appear to be less important. The significance of GDP growth and the stock index in determining risk attitude has potentially important implications to theoretical models in macroeconomics and finance, since they cast doubt on the widely accepted assumption of the constancy of the coefficient of risk aversion.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/pmoffatt.pdf

Differences in cognitive control between real and hypothetical payoffs

Presenter: Ralf Morgenstern
Author: Ralf Morgenstern, Marcus Heldmann, Bodo Vogt

This paper focuses on the question of neuronal differences in the evaluation of hypothetical and real payoffs. Previous research in experimental economics (e.g. Holt and Laury 2002) has shown that there are differences in subjects' behavior when evaluating hypothetical and real payoffs. We conducted a two sessions EEG-experiment with high-stake payoffs. We used the certainty equivalent method for payoff evaluation in which subjects were asked whether they preferred playing a lottery or receiving a sure payoff instead. Our behavioral results are inline with former studies indicating that subjects are more risk averse when being faced with real payoff. The EEG data provides evidence that these decision processes are different in brain activity. A greater N2 could be evoked for hypothetical payoffs, which shows that higher cognitive control is present in hypothetical decisions. These neuronal underpinnings provide an indication for additional evaluation processes for hypothetical decisions which could explain a shift of the certainty equivalent toward the expected value of a lottery.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/rmorgenstern.pdf

What Can the Big Five Personality Factors Contribute to Explain Small-Scale Economic Behavior?

Presenter: Julia Müller
Author: Julia Müller, Christiane Schwieren

Growing interest in using personality variables in economic research leads to the question whether personality as measured by psychology is useful to predict economic behavior. Is it reasonable to expect values on personality scales to be predictive of behavior in economic games? It is undoubted that personality can influence large-scale economic outcomes. Whether personality variables can also be used to understand micro-behavior in economic games is however less clear. We discuss reasons in favor and against this assumption and test in our own experiment, whether and which personality factors are useful in predicting behavior in the trust or investment game. We can also use the trust game to understand how personality measures fare relatively in predicting behavior when situational constraints vary in strength. This approach can help economists to better understand what to expect from the inclusion of personality variables in their models and experiments, and where further research might be useful and needed.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jmuller.pdf

Risk Neutral Equilibria of Noncooperative Games.

Presenter: Robert Nau
Author: Robert Nau

Game-theoretic solution concepts such as Nash equilibrium are commonly used to model strategic behavior in terms of precise probability distributions over outcomes. However, there are many potential sources of imprecision in beliefs about the outcome of a game: incomplete knowledge of payoff functions, non-uniqueness of equilibria, heterogeneity of prior probabilities, unobservable background risk, and distortions of revealed beliefs due to risk aversion, among others. This paper presents a unified approach for dealing with these issues, in which the typical solution of a game is a convex set of probability distributions that, unlike Nash equilibria, may be correlated between players. In the most general case, where players are risk averse, the probabilities do not represent beliefs alone. Rather they must be interpreted as products of subjective probabilities and relative marginal utilities for money.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/rnau.pdf

When Allais meets Ulysses: Dynamic axioms and the Common Ratio Effect

Presenter: A. Nebout
Author: Nebout, A. and Dubois, D.

We report experimental findings about subjects' behavior in dynamic decision problems involving multistage lotteries with different timings of resolution of uncertainty. Our within-subject design allows us to study violations of the Independence axiom and of the dynamic axioms': Dynamic Consistency, Consequentialism and Reduction of Compound Lotteries. More precisely we investigate the extensions in a dynamic framework of the pattern of choices observed in the Common Ratio Effect (CRE). We study the effects of changes in probability and outcomes over CRE-like violations of each dynamic axiom as well as the eventual association between the independence axiom and each dynamic axiom. We find that for Reduction of Compound Lottery and Dynamic Consistency, the CRE-like behavior is more frequently observed for small ratio values, but is not affected by the outcome level; whereas for Consequentialism CRE-like behavior is more frequently observed with high outcomes, but is not affected by the ratio level. Moreover, we find that an important proportion of our subjects verify the Independence axiom but violate some dynamic axioms in a systematic manner. This accounts for the fact that dynamic axioms are not only extensions of the Independence axiom to a dynamic framework but also capture preferences that are independent of the one observed with single stage lotteries.

Allais, Ellsberg, and Preferences for Hedging

Presenter: Pietro Ortoleva
Author: Mark Dean and Pietro Ortoleva

We study the relation between ambiguity aversion and the Allais paradox. To this end, we introduce a novel definition of hedging which applies to objective lotteries as well as to uncertain acts, and we use it to define a novel axiom that captures a preference for hedging which generalizes the one of Schmeidler(1989). We argue how this generalized axiom captures both aversion to ambiguity, and attraction towards certainty for objective lotteries. We show that this axiom, together with other standard ones, is equivalent to two representations both of which generalize the MaxMin Expected Utility model of Gilboa and Schmeidler (1989).In both, the agent reacts to ambiguity using multiple priors, but does not use expected utility to evaluate objective lotteries. In our first representation, the agent treats objective lotteries as 'ambiguous objects,' and use a set of priors to evaluate them. In the second, equivalent representation, lotteries are evaluated by distorting probabilities as in the Rank Dependent Utility model, but using the worst from a set of such distortions. Finally, we show how a preference for hedging is not sufficient to guarantee an Ellsberg-like behavior if the agent violates expected utility for objective lotteries. We then provide an axiom that guarantees that this is the case, and find an associated representation in which the agent first maps acts to an objective lottery using the worst of the priors in a set; then evaluates this lottery using the worst distortion from a set of convex Rank Dependent Utility functionals.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/portoleva.pdf

Great expectations: Prospect theory with a consistent reference point

Presenter: Asa B. Palley
Author: Asa B. Palley

I apply a prospect theory model of risk preferences with an endogenously determined reference point to propose an alternative objective of maximizing expected outcome rather than maximizing expected utility. I show that an agent can always form a consistent expected outcome for any binary gamble and derive a parametric formula, which can then be used to examine the effects of loss aversion, risk aversion, and probability weighting on behavior. To illustrate the applicability of the results, I use this model to consider the incentives of an agent purchasing insurance against the possibility of a loss and show that it is optimal for him to either purchase full insurance or purchase no insurance.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/apalley.pdf

Liminal Exponential Discounting

Presenter: Jinrui Pan

Author: Craig Webb and Jinrui Pan

A decision maker's propensity to forgo current utility for future utility is known as their discount rate. The classical model of decision making overtime, exponential discounting, assumes that the discount rate is constant. This paper introduces a new model we call Liminal Discounting. This model generalises exponential discounting model in a simple way, yet the model can accommodate preferences exhibiting decreasing or increasing impatience. An individual with such preferences has a constant rate of time preference up to some threshold point in time. After this threshold the rate may change, but will then remain constant at the new rate. Such preferences are stationary before and after the threshold. These long periods of stationarity make the model especially tractable for economic applications. Violations of stationarity, such as the present bias, may occur when comparing the near and distant future. Our main theorem provides a preference foundation for the Liminal Discounting model. The theorem is proved within the standard framework, so is a genuine generalisation of the exponential discounting model. In particular, the threshold time arises as a consequence of our preference axioms.

Identification of Risk vs Ambiguity Aversion in Public Good Provision

Presenter: Giovanni Ponti

Author: Iñigo Iturbe, Giovanni Ponti and Ismael Rodriguez-Lara

We consider a simple model of public good provision as a stereotypical example of an individual decision problem under both risk and uncertainty. The risk component comes from the fact that the (privately observed) individual cost of contributing is an independent random drawn from a uniform distribution (and this fact is publicly known); while uncertainty is essentially strategic, in that group members have to form subjective beliefs over the others' contribution strategy. We design four experimental treatments in which we vary subjects' informational conditions to estimate two alternative models of individual decision making over uncertainty: i) one in which players form subjective beliefs over the overall uncertainty in the game, ii) the other in which risk and uncertainty are treated separately.

Social Preferences, Risk Preferences and the Hexagon Condition

Presenter: Giovanni Ponti

Author: Xavier Del Pozo, Arianna Galliera, Giovanni Ponti, Iryna Sikora

This paper reports experimental evidence from a 3-player Dictator Game in which Dictators decide over the distribution of probabilites of winning a fixed, indivisible, monetray prize. This evidence is compared with a standard (control) treatment in which money is perfectly divisible, and Dictators allocate shares of the prize across the group members, and also with an "hybrid" protocol, by which a fraction of the prize is allocated deterministically, and the remainder through a lottery. Dictators' decisions are framed within (a suitably modified version of) Karni and Safra's [22] model of distributional justice, which allows us to identify "consequentialist" vs. "procedural fairness", also controlling for (own-payoﬀ) risk aversion. Our evidence shows that both views of fairness are complementary in explaining subjects' social preferences, and how they relate with individuals' attitudes to risk.

The Robust Beauty of APA Presidential Elections: An Empty-Handed Hunt for the Social Choice Conundrum.

Presenter: Anna Popova
Author: Popov, S., Popova, A., Regenwetter, M.

Social choice theory in Economics and Political Science has highlighted that competing notions of rational social choice are irreconcilable. This established wisdom is based on hypothetical thought experiments, mathematical impossibility theorems, and computer simulations. We provide new empirical evidence that challenges the practicality of these discouraging predictions. We analyze the ballots from thirteen presidential elections of the American Psychological Association. We report on an empirical comparison of the Condorcet, the Borda, the Plurality, the Anti-Plurality, the Single Transferable Vote, the Coombs, and the Plurality Runoff rules. We find that these rules frequently agree both on the winner and on the social order. Boot strapping reveals that the coherence among competing rules is a property of the empirical distribution of voters' choices, and it is not specific to a particular sample. Our findings are highly robust to changes in the modeling assumptions that enter our analysis. These findings suggest many interesting open research questions for the emerging paradigm of behavioral social choice: Why do competing social choice procedures agree in real-world electorates? How broadly does the accumulated evidence against the social choice conundrum generalize to other electorates and other candidate choice sets?

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/apopova.pdf

The Response of Professional Traders to Earnings Shocks: Evidence from a Field Experiment

Presenter: Michael Price
Author: Jonathan Alevy and Michael K. Price

We examine two aspects of behavior using an experimental protocol designed to study risk taking and myopic loss aversion amongst financial market professionals. Initial shocks to earnings have a persistent effect on subsequent investment decisions in the high frequency treatment. Subjects who experience lottery winnings in the first round of play take significantly less risk over the remaining rounds. In contrast, those who loose in the initial round, tend to maintain or increase subsequent investments in the risky lottery. Moreover, we find that overnight traders invest significantly less than day traders in treatments where risk is resolved more frequently.

Cognitive Ability and Learning to Play Equilibrium: A Level-k Analysis

Presenter: Victoria Prowse
Author: David Gill, Victoria Prowse

In this paper we investigate how cognitive ability influences behavior, success and the evolution of play towards Nash equilibrium in repeated strategic interactions. We study behavior in a p-beauty contest experiment and find striking differences according to cognitive ability: more cognitively able subjects choose numbers closer to equilibrium, converge more frequently to equilibrium play and earn more even as behavior approaches the equilibrium prediction. To understand better how subjects with different cognitive abilities learn differently, we estimate a structural model of learning based on level-k reasoning. We find a systematic positive relationship between cognitive ability and levels; furthermore, the average level of more cognitively able subjects responds positively to the cognitive ability of their opponents, while the average level of less cognitively able subjects does not respond at all. Our results suggest that, in strategic environments, higher cognitive ability translates into better analytic reasoning and a better 'theory of mind.'

Reference Dependence and Loss Aversion in Probabilities: Theory and Experiment of Ambiguity Attitudes

Presenter: Jianying Qiu
Author: Jianying Qiu and Utz Weitzel

In standard models of ambiguity, the evaluation of an ambiguous asset, as of a risky asset, is considered as an independent process. In this process only information directly pertaining to the ambiguous asset is used. These models face significant challenges from the finding that ambiguity aversion is more pronounced when an ambiguous asset is evaluated alongside a risky asset than in isolation. To explain this phenomenon, we developed a theoretical model based on reference dependence in probabilities. According to this model, individuals (1) form subjective beliefs on the potential winning probability of the ambiguous asset; (2)use the winning probability of the (simultaneously presented) risky asset as a reference point to evaluate the potential winning probabilities of the ambiguous asset; (3) code potential winning probabilities of the ambiguous asset that are greater than the reference point as gains and those that are smaller than the reference point as losses; (4) weight losses in probability heavier than gains in probability. We tested the crucial assumption, reference dependence in probabilities, in an experiment and found supporting evidence.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jqui.pdf

Anchoring Bias in Forecast Information Sharing in a Supply Chain

Presenter: R K Rajagopal
Author: N. Karthikram and R. K. Rajagopal and G. Janarthanan and R K Amit

This paper investigates the behavioral aspects of decision making of retailers, in a supply chain, sharing private forecast information to suppliers. Ina retailer-supplier setting, before the demand realization, the retailer shares the demand forecast followed by a ``pull'' wholesale price contract between a supplier and a retailer in which the inventory risk is borne by the supplier. In a one-shot interaction, the normative solution recommends that, in the equilibrium, the retailer inflates the demand and the supplier ignores the demand forecast. Hence, no credible demand forecast information is communicated. In this paper, we conjecture that, in the pull contract, the retailer deviates from the normative behavior due to the anchoring heuristic. We designed an experiment with human subjects to test this conjecture. We also study the extent of anchoring with different demand forecasts as anchors. Our experiment establishes the presence of anchoring in forecast information sharing.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/ramit.pdf

Behavioral Variability of Choices Versus Structural Inconsistency of Preferences

Presenter: Michel Regenwetter
Author: Michel Regenwetter and Clintin Davis-Stober

Theories of rational choice often make the structural consistency assumption that every decision maker's binary strict preference among choice alternatives forms a strict weak order. Likewise, the very concept of a utility function over lotteries in normative, prescriptive, and descriptive theory is mathematically equivalent to strict weak order preferences over those lotteries, while intransitive heuristic models violate such weak orders. Using new quantitative interdisciplinary methodologies, we dissociate the variability of choices from the structural inconsistency of preferences. We show that laboratory choice behavior among stimuli of a classical "intransitivity" paradigm is, in fact, consistent with variable strict weak order preferences. We find that decision makers act in accordance with a restrictive mathematical model that for the behavioral sciences is extraordinarily parsimonious. Our findings suggest that the best place to invest future behavioral decision research is not in the development of new intransitive decision models but rather in the specification of parsimonious models consistent with strict weak order(s), as well as heuristics and other process models that explain why preferences appear to be weakly ordered.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mregenwetter.pdf

Qtest: Quantitative Tests for Theories of Pairwise Preference and Binary Choice Data, with Applications

Presenter: Michel Regenwetter

Author: Michel Regenwetter, Clintin P. Davis-Stober, Shiau Hong Lim, William Messner and Chris Zwilling

Quantitative Tests for Theories of Pairwise Preference and Binary Choice Data, with Applications Paper Authors: Michel Regenwetter, Clintin P. Davis-Stober, Shiau Hong Lim, William Messner & Chris Zwilling Paper Abstract: We provide a state-of-the art quantitative framework and public-domain statistical inference software package, QTest, for testing algebraic theories of pairwise preference on binary choice data. This framework bridges the conceptual, mathematical, and statistical gap between algebraic decision theory in the deterministic realm and highly variable empirical data that originate from sampling processes in the empirical realm. We discuss several probabilistic specifications that all leverage break through developments in statistical inference. Most of these are ready to use across a broad range of algebraic theories without further theoretical derivations. This approach also allows researchers to level the playing field between non-nested theories with different numbers of free algebraic parameters. It thus clears the path for full-fledged quantitative contests among rival theories of decision making, in most cases without requiring expertise in advanced quantitative methods. One class of probabilistic specifications, the mixture based specifications, aka "random preference models," generally requires additional(possibly hard)mathematical derivations. In addition, we use QTest to test leading decision theories such as Cumulative Prospect Theory (CPT) and Transfer of Attention-Exchange(TAX).

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mregenwetter.pdf

An Investigation of Time Consistency for Subjective Discounted Utility

Presenter: Olivier Renault

Author: André Lapied and Olivier Renault

A well-known common agreement in decision theory is that only exponential decision makers are time consistent i.e. with the mere passage of time, future choices must not contradict the initial choice. Building on this result, a large range of works has studied time inconsistency as a direct application of hyperbolic discounting. These articles share the common objective time assumption under which decision makers have a perfect perception of future periods. This paper firstly highlights that, when no further condition than separability is mentioned, any discount mechanism is compatible with time consistency. Then, we investigate time consistency assuming that individual time perception may be submitted to time distortion. In particular, an axiomatic discounting model called Subjective Discounted Utility (SDU) is provided to illustrate how hyperbolic decision makers may be time consistent.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/orenault.pdf

Lending Schemes and Risk Taking Behavior in Rural Credit Market

Presenter: Endrizal Ridwan
Author: Endrizal Ridwan

Lending with joint liability (known as group lending) has been theoretically considered as a solution for the repayment problems due to asymmetric information in rural credit market. However, some empirical studies found no significant differences in the repayment rate between joint and individual lending. While the theoretical explanations mainly assume that an individual behaves the same when participating in both lending schemes (i.e. take risks and returns as given),we argue that individuals could change their risk taking behavior when joining a group lending (i.e. endogenous risks and returns). Therefore, the repayment rate is not necessarily higher only due to group lending per se. This paper employs the Markowitz-CAPM portfolio selection model to compare entrepreneurs' choices of risks and returns in projects funded by joint liability loans to those funded by individual liabilities. Three interesting results emerge (i) joint liability lending encourages risks taking behavior of low skilled entrepreneurs while individual lending does for relatively higher skills, (ii) regardless the lending schemes, higher skill entrepreneurs tend to success more often and yield higher returns, and (iii) higher interest rates forces entrepreneurs to higher the risks, but higher collateral and joint liability rate tend to lower the risks.

Ambiguity as a Source of Temptation: Modeling Unstable Beliefs

Presenter: Thomas Rongiconi
Author: André Lapied and Thomas Rongiconi

The ”General-Self-Control-Preference” model introduced by Noor and Takeoka (2010) allows to take into account non linear costs of Self-Control. In this paper we extend this theory to situations in which a decision-maker faces ambiguity. We focus on the fact that lack of information is a potential source of temptation. Indeed lack of information doesn’t allow the decision-maker to put a probability measure on uncertain events. Our basic hypothesis is that in an ambiguous situation, individuals are not confident enough about their beliefs and could therefore be tempted to use other beliefs to evaluate the alternatives in the second period. We study a two period model where ex ante dominated choice may tempt the decision-maker in the second period. Individuals have preferences over sets of alternatives that represent second period choices. We provide a Choice-Theoretic model where the ex ante belief is a probability measure whereas ex post belief is a Choquet-capacity, allowing to take into account individual attitudes towards ambiguity in the second period.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/rthomas.pdf

Does good advice come cheap? - On the assessment of risk preferences in the lab and the field

Presenter: Benjamin Roth
Author: Andrea Leuermann, Benjamin Roth

We investigate how individuals assess risk preferences of others given sociodemographic characteristics or pictures. Both students and financial professionals participate in this artefactual field experiment. Our results show that subjects have substantial knowledge about the correlation between sociodemographic variables and risk tolerance. When assessing others, subjects mainly rely on the advisee's self-assessment of risk preferences and gender. On average, people consider themselves to be less risk-tolerant than the person they evaluate. Subjects use their own risk attitude as a reference point for predicting others' risk preferences. This false consensus effect is especially pronounced for experienced professionals.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/broth.pdf

Behavioral Responses towards Risk Mitigation: An Experiment with Wild Fire Risks

Presenter: Elisabet Rutstrom
Author: Gregory J. George, Glenn W. Harrison, Elisabet Rutstrom, Shabori Sen

We ask if voluntary risk mitigation leads to optimal decisions when probabilities are not known to agents. We further test if there are significant differences in inferred risk attitudes and subjective beliefs when voluntary mitigation is an option compared to when it is not. We design a laboratory experiment that uses Virtual Reality simulations of forest fires where subjects form perceptions of the damage probabilities through experience. We find that subjective probabilities underestimate the risk when voluntary mitigation is not an option, but overestimate the risk when it is. We also find that the inferred risk aversion is significantly stronger in the presence of voluntary mitigation. Together these findings imply that voluntary action will lead to over mitigation of risk, while public action, if based on beliefs estimated from actions that do not involve mitigation, would lead to under mitigation of risk.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/RiskMitigationVersionFURXV.pdf

Are Gambling Behaviour and Allais Paradox Two Sides of the Same Coin? Evidence from Horse Race Betting

Presenter: Jani Saastamoinen
Author: Suhonen, Niko, Saastamoinen, Jani and Linden, Mika

This paper shows that the empirical observations from real-life gambling markets correspond with the Allais' experiments. Risk behaviour is modeled with an uncertainty function which is based on the dual theory model with probability weighting. We use a multinomial model with horse race betting data to estimate risk parameters. Our results imply that the assumption of risk aversion should not be rejected because probability weighting affects gambling decisions.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jsaastomoinen.pdf

Probabilistic Risk Attitudes and Local Risk Aversion: a Paradox

Presenter: Vjollca Sadiraj
Author: Vjollca Sadiraj

Prominent theories of decision under risk that challenge expected utility theory model risk attitudes at least partly with transformation of probabilities. This paper shows how attributing local risk aversion to attitudes towards probabilities can produce extreme probability distortions that imply paradoxical risk aversion.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/vsadiraj.pdf

Social Image in Choice--Pride, Shame, Temptation, and Social Pressure

Presenter: Kota Saito
Author: Kota Saito

A decision maker can behave generously because of his concern about social image. Specifically, the decision maker might feel pride if other agents observe his generous action; he would feel shame if other agents observe his selfish action. On the other hand, his temptation to behave selfishly deters his generous behaviors. To distinguish between these phenomena and pure generosity, we provide an axiomatic model of preferences over sets of allocations between the decision maker and other passive agents. In the model, those phenomena and pure generosity are captured by unique parameters separately. Moreover, we show that the model is consistent with experiments on dictator games under single blindness as well as double blindness, dictator games with exit option, and dictator games under uncertainty over recipients' payoffs. Finally, we apply the model to show that concerns about social image can cause warm glow giving proposed by Andreoni (1988).

Why do the eyes have it?

Presenter: Asli Selim
Author: Aurelien Baillon, Asli Selim, Dennie van Dolder

Humans often behave in an altruistic manner, even to completely unrelated strangers. From economics to evolutionary biology, researchers have investigated what mechanisms underlie such altruism. Recent findings show that even irrelevant pictures of eyes make people more generous. This phenomenon is typically explained by claiming that images of eyes, by inducing feelings of being watched, trigger social evaluation and reputation concerns. In an experiment, we show that the effect of pictures of eyes cannot be explained by this mechanism. Although pictures of eyes increase prosocial behavior in interaction tasks, they do not influence decisions in individual decision making tasks. This stands in sharp contrast to past findings on social evaluation and to the results obtained from a comparison treatment designed to trigger social evaluation concerns. Our results, however, can be explained by the role that eyes play in relations of dominance and submissiveness, as found both in animal and human studies. This suggests that research on altruism should not focus solely on higher level social constructs such as reputation building, but also consider the impact of more primitive, lower level instincts.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/aselim.pdf

An experimental examination of auction and bargaining

Presenter: Jason Shachat
Author: Jason Shachat, and Lijia Tan

Auctions are a popular method of procurement. In practice, the auctioneer often retains the right bargain for further concessions from the auction winner. Bulow and Klemperer (1996) showed that an English auction with the auctioneer retaining the right to make a take-it-or-leave-it offer to the auction winner implements the optimal mechanism, and thus is an optimal form of auction-bargaining. We report on a laboratory experiment of this mechanism. Bidders follow the dominant strategy of bidder their cost and then accepting any offer that gives a positive result - in contrast to the literature on ultimatum games. Further, the theory accurately predicts when the procurement official chooses to engage in bargaining, but fails to predict the take-it-or-leave offer amount. Offers depend upon the auction price while in theory the offered amount should not. We find that a model incorporating probability weighting explains these deviations, while commonly proposed alternative models based upon risk aversion and anticipated regret aversion can't.

Entrepreneurial choice under ambiguity and the impact of the overconfidence bias

Presenter: Anisa Shyti
Author: Anisa Shyti

Uncertainty surrounds most entrepreneurial activities, yet there is little evidence on ambiguity attitudes in entrepreneurial decision making. Entrepreneurial decisions are also often related and/or attributed to overconfidence, or to individuals' tendency to perceive themselves more favorably than they objectively should. Although ambiguity and overconfidence both influence individual's likelihood perceptions, there are few studies that examine how these two dimensions interact and influence choice behavior. One important finding indecision making under ambiguity shows that individuals who feel skilled in a given uncertain situation are more ambiguity seeking than those who feel less skilled(this is known as the "competence hypothesis", Heath and Tversky, 1991). Thus, we expect overconfident entrepreneurs to exhibit more ambiguity seeking behavior. This paper examines experimentally the effect of overconfidence on attitude towards ambiguity with Executive MBA students. In the first part of the experiment, subjects were randomly assigned to three priming treatments: overconfidence, neutral, and under confidence priming. Each priming treatment consisted in a general knowledge test, where task difficulty was manipulated across treatments: easy, medium, and difficult, respectively for overconfidence, neutral, and under confidence. In the second part of the experiment, after receiving the test feedback, subjects performed a set of binary choices between an ambiguous prospect and a risky prospect. The ambiguous prospect (x,[p_low, p_high]) offers € x with a probability between p_low and p_high, and the risky prospect offers the same outcome, € x, with a probability p_r. For a given binary choice set, the probability of the risky prospect, p_r, varies between p_low and p_high. To develop our hypotheses, we build on Budescu's et al. (2002) model, a generalized version of Prospect Theory with an additional parameter for ambiguity. Our results confirm that overconfidence increases ambiguity seeking behavior

An Experimental Study of Attitude towards Second Order Risk

Presenter: Zhong Songfa
Author: Miao Bin, Zhong Songfa

This paper examines systemically the attitudes toward two-stage lottery by introducing three variants of mean-preserving spread into the second-order risk in an experimental setting. We do not observe consistent aversion to meanpreserving spread in the second-order risk. More importantly, the overall data reject a number of theories, including expected utility (EU), recursive expected utility (REU) and recursive rank-dependent utility (RDEU), together with their underlying axioms – reduction of compound lotteries, time neutrality and second order independence. In the structural estimation, RDEU with a convex probability weighting function fits the data best among various functional specifications of REU and RDEU. At last, a modified REU model with aversion to complexity in the second order risk is proposed to account for the observed behavioral patterns.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/zsongfa.pdf

Manipulating decision making of typical agents

Presenter: D. Sornett
Author: Yukulov, V. I and Sornette, D.

We investigate how the choice of decision makers can be manipulated under the presence of risk and uncertainty. Our analysis is based on the Quantum Decision Theory(QDT) previously introduced by the authors, which we generalize to the case of decision makers that are members of a society. Similarly to the concept of are presentative agent in economics, the notion of a typical decision maker, representing the average behavior within a given society, is introduced and characterized. QDT describes an agent's choice as a probabilistic event occurring with a probability that is the sum of a utility factor and of an attraction factor. The attraction factor embodies subjective and unconscious dimensions in the mind of the decision maker. The most efficient manipulation of decision making is realized by influencing the attraction factors of decision makers. This can be done in two ways. One method is to arrange in a special way the payoff weights, which induces the required changes of values of attraction factors. We show that a variation of the payoff weights can inverse the attraction factor values and reverse the decision preferences, even when the prospect utilities are not changed. The second method of manipulation is by providing information to decision makers or by allowing consultations in the society. The attraction factors can be either decreased, when decision makers obtain correct information, or increased, if the delivered information is wrong. The variation of the attraction factors, induced by positive or negative information, can lead to the reversal of preferences. The methods of manipulating decision making are illustrated by several experiments, whose outcomes are compared quantitatively with the prediction of QDT.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/dsornett.pdf

From Simple to Complex: a general extension framework of behavioral foundations

Presenter: Vitalie Spinu
Author: Vitalie Spinu

This paper develops a general method for the extension of behavioral foundations of decision models, that generalizes and simplifies as such extensions published before. Given a model on a set of simple choice alternatives(prospects), it is possible, under general structural assumptions, to extend the model to the whole domain of interest. Simple prospects are usually functions taking finitely many values, as with simple lotteries in decision under risk. The whole set of objects of interest usually includes continuous and sometimes unbounded prospects, as with lognormal distributions in finance. The proposed method encompasses and unifies many extensions published before on expected utility, rank-dependent utility, prospect theory, and Choquet expected utility. In addition, this paper provides extensions for Fishburn (1983) between nes model, Gul (1991)disappointment aversion model and MaxMin expected utility of Gilboa and Schmeidler(1989), models that had not been extended beyond simple prospects before.

From the lab to the field: envelopes, dictators and manners

Presenter: Jan Stoop
Author: Jan Stoop

Results are reported of the first natural field experiment on the dictator game, where subjects are unaware that they participate in an experiment. In contrast to predictions of the standard economic model, dictators show a large degree of pro-social behavior. This paper builds a bridge from the laboratory to the field to explore how predictive findings from the laboratory are for the field. External validity is remarkably high. In all experiments, subjects display an equally high amount of pro-social behavior, whether they are students or not, participate in a laboratory or not, or are aware that they participate in an experiment or not.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jstoop.pdf

Inducing Risk Neutral Preferences with Binary Lotteries: A Reconsideration

Presenter: J. Todd Swarthout
Author: Glenn W. Harrison, Jimmy Martínez-Correa and J. Todd Swarthout

We evaluate the binary lottery procedure for inducing risk neutral behavior. We strip the experimental implementation down to bare bones, taking care to avoid any potentially confounding assumption about behavior having to be made. In particular, our evaluation does not rely on the assumed validity of any strategic equilibrium behavior, or even the customary independence axiom. We show that subjects sampled from our population are generally risk averse when lotteries are defined over monetary outcomes, and that the binary lottery procedure does indeed induce a statistically significant shift towards risk neutrality. This striking result generalizes to the case in which subjects make several lottery choices and one is selected for payment

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jswarthout.pdf

The Independence Axiom and the Bipolar Behaviorist

Presenter: J. Todd Swarthout
Author: Glenn W. Harrison and J. Todd Swarthout

Developments in the theory of risk require yet another evaluation of the behavioral validity of the independence axiom. This axiom plays a central role in most formal statements of expected utility theory, as well as popular alternative models of decision-making under risk, such as rank-dependent utility theory. It also plays a central role in experiments used to characterize the way in which risk preferences deviate from expected utility theory. If someone claims that individuals behave as if they "probability weight" outcomes, and hence violate the independence axiom, it is invariably on the basis of experiments that must assume the independence axiom. We refer to this as the Bipolar Behavioral

Hypothesis: behavioral economists are pessimistic about the axiom when it comes to characterizing how individuals directly evaluate two lotteries in a binary choice task, but are optimistic about the axiom when it comes to characterizing how individuals evaluate multiple lotteries that make up the incentive structure for a multiple-task experiment. Building on designs that have a long tradition in experimental economics, we offer direct tests of the axiom and the evidence for probability weighting. We reject the Bipolar Behavioral Hypothesis: we find that nonparametric preferences estimated for the rank-dependent utility model are significantly affected when one elicits choices with procedures that require the independence assumption, as compared to choices with procedures that do not require that assumption. We also demonstrate this result with familiar parametric preference specifications, and draw general implications for the empirical evaluation of theories about risk.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jswarthout2.pdf

On the decision to explore new alternatives: The co-existence of over- and under-exploration

Presenter: Kinneret Teodorscu
Author: Kinneret Teodorescu and Ido Erev

The decision between the "exploration of new alternatives" and the "exploitation of familiar alternatives" is implicit in many of our daily activities. How is this decision made? When will deviation from optimal exploration be observed? The current paper examines exploration decisions in the context of a multi-alternative choice task. In each trial, participants could choose a familiar option (the status quo) or a new alternative (risky exploration). The observed exploration rates were more sensitive to the common experience than to the average experience with exploration: participants exhibited under-exploration in "rare treasures" settings when the common outcome from exploration was disappointing and over-exploration in "rare mines" settings when the common outcome from exploration was attractive. This pattern can be captured with the assertion that the decision whether to explore new alternatives reflects reliance on small samples of past experiences. In addition, the findings highlight the value of a distinction between two types of exploration: forward-looking exploration, resulting from data collection tendencies, and backward-looking exploration, resulting from positive experiences with exploratory efforts in previous trials. We present a simple model based on these two motivations to explore new alternatives and demonstrate its high predictive value.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/kteodorescu.pdf

Hedging Risk in Cloud Computing Markets by Cloud Service Option Contracts: An Extended Abstract

Presenter: Vadim Timkovsky
Author: N. Shakhlevich, V. G. Timkovsky

In this article, we consider cloud service option contracts on cloud computing services whose mechanism is similar to that of option contracts on commodity futures. These are \emph{call option} contracts that give the right to buy a specified cloud service of a certain type (underlying instrument) in a certain quantity at a fixed price (exercise price) before or on a specified date (expiration date); and \emph{put option} contracts that give the right to sell. The main attention of our research is focused on multi-leg options contracts that allow the cloud computing brokers to construct risk averse business strategies.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/vtimkovsky.pdf

Higher Order Risk Attitudes, Demographics, and Financial Decisions

Presenter: S.T. Trautmann
Author: Charles N. Noussair, Stefan T. Trautmann, Gijs van de Kuilen

We conduct an experiment to study the prevalence of the higher order risk attitudes of prudence and temperance, in a large demographically representative sample, as well as in a sample of undergraduate students. Participants make pairwise choices between lotteries of the form proposed by Eeckhoudt and Schlesinger (2006). The choices in these lotteries isolate prudent from imprudent, and temperate from intemperate, behavior. We relate individuals' risk aversion, prudence, and temperance levels to demographics and financial decisions. We observe that the majority of individuals' decisions are consistent with risk aversion, prudence, and temperance, in both the student and the demographically representative sample. An individual's level of prudence is predictive of his wealth, saving, and borrowing behavior outside of the experiment, while temperance predicts the riskiness of portfolio choices. Our findings suggest that the coefficient of relative prudence for a representative individual is approximately equal to two.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/strautmann.pdf

Relating Risk Preference, Water Rewards, and Thirst: Wealth and Utility in Monkeys

Presenter: Agnieszka Tymula
Author: Hiroshi Yamada, Kenway Louie, Agnieszka Tymula, Paul W. Glimcher

Standard economic techniques allow us to evaluate human risk-attitudes, although it has been technically difficult to relate these measurements to the overall wealth levels standard models employ

as a critical variable. Previous work has, however, applied these techniques to animals to answer two questions: 1) Do our close evolutionary relatives share both our risk attitudes and our economic rationality? 2) How does satiety state (or wealth level in the language of economics) change risk-attitudes? Previous studies have provided conflicting answers to these questions. To address these issues, we employed standard techniques from human experimental economics to measure monkey risk-attitudes (utility function curvature) for water rewards in captive rhesus macaques as a function of blood osmolality (an objective measure of water wealth). Overall, our monkey subjects were slightly risk-averse in a manner reminiscent of human choosers, but only after significant training. Monkeys consistently violated expected utility theory (violating first order stochastic dominance) early in training, indicating that traditional economic models cannot be used to describe their behavior at that stage. Once these choosers were rational, measured risk-attitudes were thirst-dependent. But unexpectedly, as the animals became thirstier risk-aversion actually increased, a finding that may be incompatible with some standard economic models.

Monotonicity: An Experimental Test

Presenter: Radovan Vadovic
Author: Tridib Sharma and Radovan Vadovic

The Axiom of Monotonicity (AM) is a necessary condition for a number of expected utility representations, including those obtained by de Finetti (1930),von Neumann and Morgenstern (1944), Savage (1954), and Anscombe and Auman (1963).This paper reports on experiments that directly test AM by eliminating strategic uncertainty, context, and peer effects. When the decision problem is simple we do not observe violations of AM; however, when it becomes a bit more obscure, we find a significant portion of subjects violating AM.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/rvadovic.pdf

Risky Choice in the Limelight

Presenter: Dennie Van Dolder
Author: Guido Baltussen, Martijn van den Assem, and Dennie van Dolder

A recurring concern about empirical research on decision making is that specific contextual aspects may restrict the generalizability of results. This experimental study examines how risk behavior in the limelight differs from that in the laboratory. Unlike the common belief, we find that subjects are more risk averse in the limelight than in the anonymity of a typical behavioral laboratory. However, the path-dependence of decisions is not affected: in both treatments, subjects take more risk when the game develops either substantially worse or better than expected. Under both experimental conditions, prospect theory (PT) provides a better explanation for subjects' behavior than expected utility of wealth theory (EU),since the PT model can capture this path-dependent behavior while the EU model

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/dvandolder.pdf

Comprehension and Risk Elicitation in the Field

Presenter: Angelino Viceisza
Author: Gary Charness and Angelino Viceisza

In the past decade, it has become increasingly common to use simple laboratory games and decision tasks as a device for measuring both the preferences and understanding of rural populations in the developing world. This is vitally important for policy implementation in a variety of areas. In this paper, we report the results observed using three distinct risk elicitation mechanisms, using samples drawn from the rural population in Senegal, West Africa. Whatever the intellectual merits of a particular elicitation strategy, there is little value in performing such tests if the respondents do not understand the questions involved. We test the understanding of and the level of meaningful responses to the typical Holt-Laury task, to a simple binary mechanism pioneered by Gneezy and Potters in 1997 and adapted by Charness and Gneezy in 2010, and to a nonincentivized willingness-to-risk scale à la Dohmen et al. We find a disturbingly low level of understanding with the Holt-Laury task and an unlikely-to-be-accurate pattern with the willingness-to-risk question. On the other hand, the simple binary mechanism produces results that closely match the patterns found in previous work, although the levels of risk-taking are lower than in previous studies. Our study is a cautionary note against utilizing either sophisticated risk-elicitation mechanisms at the possible cost of seriously diminished levels of comprehension or nonincentivized questions in the rural developing world.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/aviceisza.pdf

Stake effects on ambiguity attitudes for gains and losses

Presenter: Ferdinand M. Vieider
Author: Vieider, Ferdinand M., Peter Martinsson and Haileselassie Medhin

We test the effects of stake size on ambiguity attitudes. Compared to a baseline condition, we find subjects to be more ambiguity seeking for small-probability gains and large-probability losses under high stakes. They are also more ambiguity averse for large-probability gains and small-probability losses. We trace these effects back to stake effects on decisions under risk (known probabilities) and uncertainty (unknown probabilities). For risk we replicate previous findings. For uncertainty, we find an increase in probabilistic insensitivity under high stakes that is driven by increased uncertainty aversion for large-probability gains and for small-probability losses. At the individual level, we find inter alia that subjects display more pessimism for small-probability losses than optimism for small-probability gains under uncertainty, and that they display more pessimism for large-probability gains than optimism for large-probability losses. These findings, in turn, may have consequences for financial decision making and insurance uptake, which we discuss.

Subjective probability estimates and source preference for flooding risks: a South-East Asian case study

Presenter: Ferdinand M. Vieider
Author: Vieider, Ferdinand M., Peter Martinsson, and Nam Pham Khanh

Microinsurance has been indicated as a promising tool to shelter small scale farmers in the developing world from potentially devastating risks. Nevertheless, where such instruments have been introduced take-up has generally been low. We look at the potential for microinsurance against flooding in South-East Asia. Specifically, we look at two elements that have not received much attention in the literature so far: subjective probabilities associated to catastrophic events and the source preference for betting on such probabilities for both gains and losses. We show that both may play a role in getting farmers to sign up for insurance. Policy and insurance design consequences are discussed.

Experimental Evidence of Context-Dependent Preferences

Presenter: Bodo Vogt
Author: Eike B. Kroll, Holger Müller, and Bodo Vogt

This paper provides a domain specific test of context effects in risky decision making. In a series of experiments, we analyze the influence of adding a theoretically irrelevant option to a choice set on perceived values of lotteries. The experiments show a significant and systematic influence of context effects on perceived values of lotteries in all subcategories of context effects. This result shows the relevance of context effects in decisions under risk and the need for a unifying theory for all subcategories of context effects.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/bvogt.pdf

Making Case-Based Decision Theory Directly Observable

Presenter: Peter P. Wakker
Author: Han Bleichrodt, Martin Filko, Amit Kothiyal, and Peter P. Wakker

This paper introduces a nonparametric way to elicit Gilboa & Schmeidler's case-based decision theory (CBDT). We need no commitment to parametric families of similarity weights or to a distance measure. Thus the new subjective parameters of CBDT, the similarity weights, can be directly related to decisions, clarifying their empirical meaning. We can measure them at the individual level and in interactive sessions. An experiment on real estate investments demonstrates the feasibility of our method. Because CBDT entails a breakaway from classical revealed preference, a new method of implementing real incentives is needed to obtain incentive compatibility. Not only is the interaction of multiple outcomes (the income effect) to be avoided, but also the interaction of multiple memories must be avoided. Our experiment confirms most of CBDT's predictions, with separability of cases in memory violated in one situation though. The experiment shows that CBDT can give plausible and new insights into (real estate investments) decisions.

The Generosity Effect: Fairness Requirements in Sharing Gains and Losses Under Reference-Dependence and Diminishing Sensitivity

Presenter: Luc Wathieu
Author: Luc Wathieu, Guillermo Baquero, Willem Smit

The purpose of this research is to conduct an experimental exploration of ultimatum games involving gains and losses of varying amounts, and to explain our results with a "Fairness Requirement Theorem" that highlights a heretofore unsuspected implication of S-shaped (reference-dependent with diminishing sensitivity) utility functions. Not much work exists in this area (one notable exception is Buchan, Croson, Johnson and Wu, 2005). To understand the relevance of this research, it suffices to think about the fact that Greece will go bankrupt unless all banks owning claims on Greek bonds negotiate a haircut. If they do not agree to share a loss, every bank will lose the full amount of its claim. Our design involves real-stakes one shot ultimatum games (we also conducted dictator games for comparison purpose) with participants randomly assigned to proposer or respondent roles. We used the strategy method: proposers indicated their offer in a gain game, and their offer in a (neatly comparable) loss game, respondents indicated minimum acceptable gain and maximum acceptable loss. We had 326 subjects, with all sessions conducted in May and June 2011 in Berlin, Germany. We find a significant "generosity effect": average proposers gave a less than fair surplus of 47% in the gain games, and a more than fair surplus of 52% ($p = .015$) in loss games; average responders required a 42% surplus in the gain game and a 47% surplus in the loss game ($p=.031$). The proportion of responders whose requirement was greater than half the pie was 8% in the gain game, and 22% in the loss game. We extensively analyze the data to study the impact of stake size (10 or 20 euros), cultural origin of the subjects, educational background (e.g., economics, etc.), gender, age, form of the game (ultimatum vs. dictator).Our findings are consistent with a new theory that we capture formally in a "fairness requirement theorem." A fairness requirement is an acceptable perceived split, that makes the subject feel sufficiently well treated. A perceived split is the share of perceived value received as a percentage of the maximum perceived value the subject could receive, as evaluated from the point of conflict. The theorem states that with an S-shape value function, any given fairness requirement always implies a greater surplus amount above the conflict point in loss sharing than in gain sharing. For example, a "50-50" fairness requirement will correspond to a respondent's requirement of a small share of gains and a requirement that the proposer endures the lion's share of losses.

Methods for Incentive Compatible Measurement of Time Preferences

Presenter: Craig S. Webb
Author: Craig S. Webb

This paper introduces two new experimental methods for eliciting time discount functions and utility functions at the individual level. Each of these methods gives precise and incentive compatible measurements, achieved in both cases without extending the domain to risky lotteries. The first method, Intertemporal Scoring Rules, elicits any discount function and utility function when the utility function is known to belong to some parametric family. The second method, Timing Rules, elicits discount functions when utility is arbitrary and the discount function is known to belong to some parametric family.

Foundations for Prospect Theory through Probability Midpoint Consistency

Presenter: Katarzyna Werner
Author: Katarzyna Werner, Horst Zank

For the famous prospect theory model there is hitherto no preference foundation for general sets of outcomes. All existing models assume a rich structure for the set of outcomes and propose preference conditions that hinge upon that structure. Yet in many important applications where prospect theory is assumed, like health or insurance, the set of outcomes is degenerate. In these more general settings it is unclear what preference conditions are required, beyond the standard assumptions, to pin down prospect theory. This paper proposes a consistency principle for elicited probability midpoints that requires a consistent treatment of probabilities of gains and similarly a consistent treatment of probabilities of losses. We show that, in the presence of the other standard preference conditions, this consistency principle implies prospect theory.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/kwerner.pdf

Are People Risk-Vulnerable?

Presenter: Marc Willinger
Author: Mickael Beaud and Marc Willinger

We report the results of a within-subject experiment, with substantial monetary incentives, designed to test whether or not people are risk-vulnerable. In the experiment, subjects face a simple portfolio choice problem in which they have to invest part of their wealth in a safe and a risky asset. We elicit risk vulnerability by observing each subject's portfolio choice in two different contexts that only differ by the presence of a significant but actuarially neutral background risk. We find that most subjects, 78.3%, are risk-vulnerable. Precisely, 52.6% have invested less in the risky asset when exposed to background risk and 25.7% were indifferent. Thus only 21.7% of the subjects have invested strictly more in the risky asset when exposed to background risk.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/mwillinger.pdf

Optimal robustness under uncertainty

Presenter: Jingyi Xue
Author: Jingyi Xue

Robustness concern has been long reflected in the decision models under uncertainty since the maxmin expected utility theory. All the models set the degree of robustness concern as fixed across all the payoff profiles. However, a decision maker's robustness concern may well changes when the certainty part or the unit scale of a payoff profile changes. This paper introduces formally a decision maker's robustness order, and characterize together a general class of robustness order and preference order over all the payoff profiles. The preference order has the feature of ranking the payoff profiles using the optimal degree of robustness. The optimal robustness level is endogenous and can change with the certainty part of a payoff profile and its unit scale.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/jxue.pdf

The Behavior of Savings and Asset Prices When Preferences and Beliefs are Heterogeneous

Presenter: Richard Zeckhauser
Author: Ngoc-Khanh Tran and Richard Zeckhauser

Movements in asset prices are a major risk confronting individuals. This paper establishes new asset pricing results when agents differ in risk preference, time preference and/or expectations. It shows that risk tolerance is a critical concept driving savings decisions, consumption allocations, prices and return volatilities. Surprisingly, due to the equilibrium risk sharing, the precautionary savings motive in the aggregate can vastly exceed that of even the most prudent actual agent in the economy. Consequently, a low real interest rate, resulting from large aggregate savings, can prevail with reasonable risk aversions for all agents. One downside of a large aggregate savings motive is that savings rates become extremely sensitive to output fluctuation. Thus, the same mechanism that produces realistically low interest rates tends to make them unrealistically volatile. A powerful isomorphism allows differences in time preference and expectations to be swept away in the analysis, yielding an equivalent economy whose agents differ merely in risk aversion. These results hold great potential to simplify the analysis of heterogeneous-agent economies, as we demonstrate in quantifying how asset prices move and bounding their volatilities. All results are obtained in closed form for any number of agents possessing additively separable preferences in an endowment economy.

Full Paper: http://excen.gsu.edu/fur2012/fullpapers/rzeckhauser.pdf

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The Foundations and Applications of Utility and Risk network

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