

# Asia-Pacific Regional Meeting of the Economic Science Association(ESA)

December 15-17(Thursday-Saturday), 2011

## Abstract

**Thursday, December 15, 2011**

**8:45am-9:50am          Opening Comments and Plenary I**

Cooperation in a series of field experiments

Charles Noussair (Tilburg University, [C.N.Noussair@uvt.nl](mailto:C.N.Noussair@uvt.nl))

**Abstract:** I describe a series of field experimental studies conducted at a private recreational fishing facility in the Netherlands. Regular customers participate in various paradigms in which a social dilemma is present. The focus is on whether cooperation occurs in these settings, whether prosociality differs between the laboratory and field settings, and to what extent reward and punishment promote cooperation.

**9:50am-10:20 am          Group Photo and Coffee Break, Location**

**10:20am-12:00pm          Parallel Session I.A-D**

**Session I.A    Field Experiments I**

[1] Cooperativeness and Social Norms among Himalayan Peasants

Arijit Das (Jawaharlal Nehru University, [arijitdas22@gmail.com](mailto:arijitdas22@gmail.com))

**Abstract:** This paper analyzes behaviour and choices of mid-Himalayan peasants in Indian sub-continent. Focus of this study is to observe the effectiveness of social norms on their cooperativeness. We find social norms are more effective in homogeneous society rather than heterogeneous society. We have played a baseline and a treatment environment using same subjects in two consecutive rounds (round one and round two) and the change in the behaviour of the subjects depends on the norms in their society. The change in their behaviour manifests their attachment to the existing norms in their society. The result shows that the change in offer is significant in Jalna village where as in the other village the change in behaviour is insignificant. Jalna peasants increased their offer by 32 percent in the treatment round where Sillaghrat peasants higher their offer by 15 percent. We also found that upper caste peasants are more cooperative than other castes. Combining both the villages the result shows that upper caste significantly offers more than the lower castes. In Jalna village, upper caste (social division in Indian society) subjects offered 16 percentage points more than other castes. Apart from caste we did not find any other significant factor.

[2] Does Infrastructure Facilitate Social Capital Accumulation? Evidence from Natural and Artefactual Field Experiments in a Developing Country

Yasuyuki Sawada (University of Tokyo, [sawada@e.u-tokyo.ac.jp](mailto:sawada@e.u-tokyo.ac.jp))

**Abstract:** While social capital is recognized essential for economic activities, its accumulation mechanisms are largely unexplored. We investigate the impact of infrastructure on social capital accumulation. We use unique dataset from an irrigation project in Sri Lanka under a natural experimental situation where a significant portion of irrigated land was allocated through a lottery mechanism. Also, we capture the level of social capital using artefactual field experiments. By combining these two datasets, we find that physical distance embedded by construction of irrigation system explain the trust across irrigation communities. Yet, within-community variation in social capital is driven largely by the years of access to the irrigation and not necessarily affected by social distance between farmers, suggesting that social preference emerges from technological environment by physical access to irrigation

[3] Trust, Trustworthiness, and Development in Vietnam

Hui Xu (GATE Lyon Saint-Etienne, [hui.xu@ens-lyon.fr](mailto:hui.xu@ens-lyon.fr))

**Abstract:** Using a combination of a field experiment conducted in 2010 in Vietnam and the “2002 Vietnam Household Living Standards Survey (VHLSS2002)”, we examine whether trust can be influenced by the experience of receiving gifts from others like receiving remittances. We also investigate two related interesting questions: i) whether trust varies within a country according to regional differences as a result of different social systems; and ii) how an individual’s risk aversion and time preference relate to trust. The paper highlights that both international and internal remittances are highly related to the receiver’s trust behavior. While internal remittances have no significant relationship to trusting behavior, international remittances demonstrate a significantly positive connection. On the other hand, international remittances are negatively related to trustworthiness, while internal remittances are positively associated. We interpret that the positive effect of international remittances on trusting behavior is a result of a learning effect from receiving international remittances, and the negative effect of international remittances on reciprocating is a reflection of participants’ “pure” receiving role for material gifts in the process of interpersonal or inter-familial interaction with the senders who live abroad. These findings have important implications for development. We also find that the degree of the impact of remittances depends on the region. Internal remittance receivers in the south are more likely to be reciprocal as compared to the rest of the population, suggesting that the positive impact of receiving remittances is greatly strengthened in the south, where we also find a significant higher level of trustworthiness as compared to the north. We suggest that this difference between the south and the north may be due to the historical influence of 20 years of a capitalist regime in the south (1954-1975). Finally, consistent with some other studies, trust is not tightly connected to a person’s risk attitude; more patient people are more likely to be reciprocal, reflecting the role of patience in investing a long-term interest rather than an immediate one-shot benefit.

## Session I.B Public Goods I

[1] New Insights into Conditional Cooperation and Punishment from a Strategy Method Experiment

Stephen Cheung (University of Sydney, [S.Cheung@econ.usyd.edu.au](mailto:S.Cheung@econ.usyd.edu.au))

**Abstract:** Understanding the forces that enhance or erode cooperation in social dilemmas is a fundamental question in social science. Previous experiments have found that selfish bias is an important source of fragility in conditional cooperation, and that opportunities for punishment can strengthen cooperation – however potential efficiency gains are threatened by antisocial punishment of high contributors. This paper

examines how these behaviours vary in response to the full range of variation in the contributions of others. A key finding is that both conditional cooperation and punishment depend not only upon the average of others' contributions – as widely presumed in the past – but also the distribution. Selfish bias is found to become significantly worse as others contribute more unequally, while punishment increases both with decreasing contributions by the target player and increasing contributions by a third player. Antisocial punishment is not directed specifically toward high contributors, but may be motivated by pre-emptive retaliation.

[2] Effective Punishment Needs Legitimacy

Xiaoting Zheng (Sun Yat-sen University, [zheng\\_xiaoting@hotmail.com](mailto:zheng_xiaoting@hotmail.com))

**Abstract:** Whom should I punish and why I am punished? When private punishment is introduced in public goods games, we find that legitimacy is important to reduce perverse punishment and help maintain cooperation. By limiting every participant to punishing one player in each period, cooperative punishment can be isolated from perverse punishment. We designed two punishment institutions, anonymous punishment (AP) and public punisher ID (PPID), to understand how the legitimacy of punishment reduces perverse punishment. Considering possible revenge in the future, punishers are concerned about the legitimacy of the punishment, which thereby enhances cooperation. The results of the experiment indicate that individuals in AP are 7.7% more likely to punish than are those in PPID. On average, individuals in PPID are 5% more likely to punish the lowest contributor than are individuals in AP. The number of punishments imposed on a particular individual has significant effects on increasing later contribution. However, whether or not a subject is punished has no significant effects on later contribution. The experiment also shows that AP is more vulnerable to perverse punishment than is PPID when the group size is larger. Contributions in PPID are relatively stable across different group sizes, while VCM and AP are more sensitive to changes in group size.

[3] How Does Punishment and Reward Run into Effect? An Experimental Examination

Liangcong Fan (Zhejiang University, [flc1984@163.com](mailto:flc1984@163.com))

**Abstract:** While most previous studies found that punishment being more effective in promoting cooperation in public goods game than reward, David G. Rand et al.(2009) found that reward is as effective as punishment. However, such inconsistency may result from different experimental designs in those studies, especially that subjects in Rand et al's experiments could establish high reputation by tracing partners' identities in 50 rounds. In this paper, we present some experiments eliminating the reputation effect by changing players' identities from round to round, and meanwhile limiting the game to 10 rounds. Our results show that reward is effective in enhancing cooperation though its effectiveness is weaker than punishment in later rounds. Although neither punishment nor reward could induce more cooperations of those who are punished or rewarded, punishment mechanism could not only enhance the convergence of those who contributed less than the average, but also sustain the contributions of those who contributed more than the average, whereas reward has only weak effects in these two aspects, insignificantly.

[4] Peer Punishment with Third-Party Approval in a Social Dilemma Game

Fangfang Tan (Max Planck Institute for Tax Law and Public, [F.Tan@uvt.nl](mailto:F.Tan@uvt.nl))

**Abstract:** This paper investigates how punishment promotes cooperation when the punishment enforcer is independent of its proposer. In a prisoner's dilemma experiment, compared with the case when the implicated parties are allowed to punish each other, cooperation is lower when the enforcement of punishment requires approval from an independent third party. Our data show that the independent third party mitigates the severity of punishment and consequently diminishes the effectiveness of punishment on promoting cooperation when antisocial punishment proposals are rare.

### **Session I.C Individual Choice under Certainty**

#### [1] Imperfect Perception of Calling Plan Costs and Simplicity Premium

Sen Geng (Xiamen University, [sen.geng@nyu.edu](mailto:sen.geng@nyu.edu))

**Abstract:** Field evidence shows that consumers make ex post mistakes in choosing calling plans: conditional on their usage pattern, they would be better off had they chosen a different plan. One typical explanation for these mistakes is that consumers overestimate the precision of their demand forecasts. In this paper, we show that in experiments choice mistakes are possible even when consumers know exactly their usage. The novelty of this paper is introducing the layer of measurable misperception concerning costs. Given the precise cost data, there is some subjective transformation that makes it highly uncertain, and it is on the basis of this uncertainty that choice is made. We find that it appears to some feature of complexity that produces subjective uncertainty and that rationally according to expected utility therefore guides the decision maker to choose a plan, which may be different from the objectively "right" plan.

Individual choice under certainty, perception errors,

#### [2] Can there ever be too many flavors of Häagen-Dazs? Revisiting “Variety Aversion”

David Ong (Peking University HSBC School of Business, [dvdng@ucdavis.edu](mailto:dvdng@ucdavis.edu))

**Abstract:** A growing body of research in psychology and economics has attempted to demonstrate, seemingly contrary to rational choice theory, that agents can be made worse off with more choice. Much of the literature was initiated by Iyengar & Lepper's (2000) field experiment. They showed that though people were more likely to visit a jam display with more varieties, they were less likely to purchase. Attempts at replication have yielded mixed results. A meta-analysis of 63 studies with N=5,036 showed a “mean effect size of virtually zero,” and concluded that there was as yet no sufficient condition for choice overload behavior. We hypothesized that choice overload was driven by uninformed consumers anticipating the possibility of negative surplus from sampling new products. To test our hypothesis, we first surveyed subjects for possible “disgust” (as rhubarb jam or dog meat are to some people) in 6 product categories. We then randomly chose 4 among these and did a modified version of Iyengar & Lepper's (2000) field experiment in a medium sized Chinese supermarket. We secretly observed consumers after we switched between high and low variety treatments. Consistent with the literature, visits increased with variety. However, as predicted, we also found that purchasing decreased with variety according to surveyed level of disgust. To explain our and prior results, we propose a simple non-search, non-contextual inference model of the uninformed consumer choice to sample new products. We show that variety loving and choice overload behavior are predicted depending upon the relation of the prior probability of success (positive surplus) and the required proportion of successes from sampling. To our knowledge, this is the first model of sampling by uninformed consumers when variety can vary based upon anticipatory beliefs.

[3] A Field Experiment on Exams with Weights Chosen by Students

Benjamin Chiao (Shanghai University of Finance and Economics, [marshall999@gmail.com](mailto:marshall999@gmail.com))

**Abstract:** The authors accidentally rediscovered a grading scheme which can be traced back as early as about thirty years ago by Richardson(1984). Under this scheme, students are allowed to choose a weight for the score (within a range) of each question during the exam. Without the knowledge of Richardson(1984), one of the authors developed the same scheme and implemented it to his students in Beijing and Shanghai universities. Some other professors also started to use it. Richardson(1984) provided a verbal description of the scheme and did not provide much economic analysis nor any models. In this paper, we derived some decision rules to model the students' behaviors on weights chosen. Our model predicts that mediocre students take the most advantage of this scheme by choosing different weights while students in the two extremes behave as if it is a conventional fixed weight exam. We also derive how students should adjust their effort levels before the exam under this scheme. The field data are largely consistently with our predictions.

**Session I.D    Physiology & Emotion**

[1] Imaging Genetics Reveals Dissociation of Attitude Towards Loss and Gain Oriented Risks

Qiang Shen (National University of Singapore, [johnsonzhj@gmail.com](mailto:johnsonzhj@gmail.com))

**Abstract:** Recently, Zhong et al. (2011) examined neural and genetic correlates of valuation of risks over losses and gains and found the serotonergic polymorphism STin2 to mediate amygdala responses for utility over loss and the dopaminergic polymorphism DAT1 to mediate striatal responses for utility over gain. Here we reanalyzed our previous imaging genetics data to disentangle the neurogenetic underpinnings of loss- and gain-oriented risks both proxied by variance. We find the serotonergic polymorphism STin2 to be linked to individual risk attitude in the loss domain and the dopaminergic polymorphism DRD4 (120bp duplication) to be associated with individual risk attitude over the gain domain. Functional MRI results showed that the anterior insula and anterior cingulate cortex/dorsal medial prefrontal cortex were linked to variances over both the loss and the gain domains. Moreover, STin2 modulated connectivity between risk-related brain areas and the executive control areas in the loss domain whereas DRD4 (120bp duplication) mediated bilateral anterior insula connectivity in the gain domain. These findings reveal divergent neurogenetic correlates of attitude towards loss- and gain-oriented risks, support a dual-system model of loss-gain processing, and contribute to a deeper understanding of decision making under risk.

[2] Eliciting Risk Preferences: Dynamics and Physiological Evidence

Markus Schaffner (Queensland University of Technology, [m.schaffner@qut.edu.au](mailto:m.schaffner@qut.edu.au))

**Abstract:** Risk preferences are a central theme for many economic questions. A general risk-averting behaviour can be observed in many settings. Most prominent is the elicitation of risk preferences using lottery choice experimental stages, as control elements in different experimental setups. While the behaviour of participants in such experiments is well studied and a number of estimation techniques exist, questions remain about the exact nature of the phenomena. A key hypothesis is that decisions are influenced by emotional processes or states, outside the rational control of the participant. This study closely examines lottery choice stages of two distinct experiments with a total of more than 300 participants to address the

question how decisions are taken and if mental stress plays a role in the lottery selection process. This is achieved by recording and analysing the exact timing of the choices and the participants' heart rate variability (HRV) - a physiological indicator of mental stress - during the selection process. The findings indicate that more risky choices, in this case lotteries with a higher spread between high and low payoff induce a higher level of mental stress. Further the ordering of the choices and the duration of the individual choices are taken into consideration to improve the model. Overall this is consistent with the notion that emotional states influence risk preferences and further investigation in this direction might be fruitful to better understand decision making processes.

[3] MAOA VNTR Polymorphism Modulates Limbic System Morphometries Mediating Individual Longshot Preference

Jungang Qin (National University of Singapore, [allsimpleasy@gmail.com](mailto:allsimpleasy@gmail.com))

**Abstract:** Longshot prospects, e.g., lottery tickets, delivering sizable gains with low probabilities are often valued above their expected payoffs even by those averse to risks in financial and insurance markets. To better understand the neural mechanisms underlying longshot preference, we employ a combined genetic and structural brain imaging approach using voxel based morphometry (VBM) and the Monoamine Oxidase A (MAOA) gene which has been shown to be associated with attitude towards longshot prospects. We found the MAOA high activity carriers to be associated with enlarged gray matter volumes in left insula, right parahippocampal gyrus, right caudate and right thalamus of limbic system. Increased structural coupling with the left posterior parietal cortex were found for MAOA high activity carriers in both left insula and right parahippocampal gyrus where the corresponding brain volumes could predict subjects' longshot preference behavior. Path analysis further provided evidence that MAOA genotype regulated longshot preference indirectly by modulating brain morphometries in left insula and right parahippocampal gyrus. Our findings reveal a genetic controlled neuroanatomical circuit for longshot preference and suggest superordinate roles of sensitivity to emotion and sensation underpinned by the limbic system and posterior parietal cortex in risk attitude towards longshot prospects.

[4] Risk-taking, Making a Tough Decision under Pressure and Physiological States in the Laboratory

Jonas FooKen (Queensland University of Technology, [j.fooKen@qut.edu.au](mailto:j.fooKen@qut.edu.au))

**Abstract:** The concept of risk aversion in economics is mainly based on a theoretical framework, although much of its intuition is also based on the daily observation that people avoid or are at least hesitant when taking risks. Both the theoretical as well as commonsense understanding of risk aversion are based on the idea that some (stable) underlying element reflects that some individuals make more risky choices than others. However, it seems nontrivial to clearly measure risk attitudes of individuals in an experimental laboratory environment (e.g. Isaac & James 2000). Starting from these premises, in our experiment we try to establish a link between theory-motivated risk aversion measures in the laboratory, a stressful trade-off decision between two options and the psychophysiological state of individuals. We use elicitation methods by Holt and Laury (2002) and Andreoni and Harbaugh (2009) to get information about individual's risk attitudes. Afterwards, participants have to decide to save one of two individuals from drowning in a dilemma situation. At the same time we measure the heart activity of our participants that provides us with physiological information during the decision making process. Physiological measures, such as heart rate variability, have been linked to the processing of information in the brain (Critchley et al. 2003) and heart

activity has also been investigated as a physiological indicator in the context of gambling (Meyer et al. 2000; Wulfert et al. 2005). In our study, we explore risk attitudes and participants' physiological state during the decision making process. Preliminary results indicate that risk averse participants are more likely to be hesitant when having to save one of two drowning individuals. This effect is paralleled by their physiological activity during this decision, which supports the idea that risk taking, which is also related to our physiological measures, and hesitation in (not obviously) economic decisions are connected by underlying individual-typical psychophysiological states.

**12:00 pm-1:30 pm      Lunch**

**1:30 pm-3:10 pm      Parallel Session II.A - D**

### **Session II.A   Field Experiments   II**

[1] Fairness in the Family: An Experiment

Alistair Munro (National Graduate Institute for Policy Studies, [alistair-munro@grips.ac.jp](mailto:alistair-munro@grips.ac.jp))

**Abstract:** Standard dictator games are often used to examine altruism and attitudes to fairness. However, for a dictator game played within a household, decisions may be undone after the experiment is complete. In this experiment played between husbands and wives in a poor community in Bogota, Colombia, subjects play games in which transfers to partners are either costly or subsidized. In this way we distinguish between spouses who are selfish, altruistic, household income maximizers and those who care about intrahousehold inequality. We find relatively few subjects maximize household income. Many subjects make choices consistent with some weight placed on intrahousehold equality.

[2] Can Integrated Education Reduce Discrimination toward Persons with Disabilities? Evidence from a Field Experiment in Nepal

Yuhei Miyauchi (The University of Tokyo, [yuhei.miyauchi@gmail.com](mailto:yuhei.miyauchi@gmail.com))

**Abstract:** This paper studies the impact of integrated education on students' discriminatory behavior toward persons with disabilities using a framed field experiment. We newly constructed an experimental procedure that exploits the nature and the degree of discriminatory behavior. Our experiment is based on the prisoner's dilemma game, but there are two additional features. First, participants can select their partners from different social groups of people. Second, we extract the belief on opponents' strategies. This procedure enables us to differentiate taste-based and information-based discrimination, which has been the long-standing issue in the literature of discrimination. Our actual experiments with secondary (middle) school students were conducted in an integrated school in Nepal. In a developing country such as Nepal, discrimination toward persons with disabilities is one major source of pushing those people to extreme poverty, and resolving the discrimination is an important policy issue. By utilizing the natural experimental situation that students without disabilities are randomly assigned to either of classes with or without students with disabilities, we can evaluate the effect of integrated education toward students' discriminatory behavior. By analyzing data from our field experiments, we found that integrated education reduces taste-based discrimination for male students and information-based discrimination for female students.

- [3] Knowing That You Matter, Matters! The Effect of Non-pecuniary Motivators on Work Performance  
Xiaolan Yang (Zhejiang University, [yangxiaolanju@gmail.com](mailto:yangxiaolanju@gmail.com))

**Abstract:** A skilled workforce, cutting edge technological proficiency, exemplary customer service, and high quality are essential for competitiveness in today's business environments. These demands require high employee motivation. Employee surveys suggest that a large part of this potential still lies idle (Pfeffer, 1995, 1998; Stajkovic and Luthans, 2003). Therefore, new approaches to HR management are essential for improving competitiveness (Ichniowski and Shaw, 2003). Recent evidence suggests that non-financial motivators such as honor, recognition and attention play a central role. So far, it is unclear why such non-financial rewards work (status or self-image?). Specifically, we have little understanding of how effective such non-pecuniary rewards are in comparison with traditional piece-rate and, moreover, how such extrinsic rewards compare with merely providing people with a meaning for the work they are doing (intrinsic motivation). We conducted a large-scale field experiment in collaboration with a survey center at Zhejiang University to investigate these issues. We hired students to digitalize a large number of surveys. Rewards were either in the form of symbolic recognition or money. Also, we vary the extent to which subjects perceive that their work has an impact/meaning. We find that providing subjects with meaning has by far the biggest effect on productivity.

- [4] Incentives and Social Preferences in a Traditional Labor Contract: Evidence from Rice Planting Field Experiments in the Philippines  
Takeshi Aida (University of Tokyo, [aidatakeshi@gmail.com](mailto:aidatakeshi@gmail.com))

**Abstract:** This paper sheds light on the interplay between economic incentives and social norms in the workplace. We ask how individual performance depends on co-workers' behavior and their social preferences. Moreover, we also examine whether monetary incentives crowd out intrinsic motivation. To this purpose, we combine an individual performance data from field experiments with the data on social preferences constructed from laboratory experiments. We focus on the case of the Central Luzon in the Philippines where informal labor organization has supplied hired labor for rice planting since the 1960s. Team production characterizes its planting process. Interestingly, despite the potential of infestation of opportunistic behaviors by workers, a fixed wage scheme has been adopted and remained unchanged for forty years. We exogenously introduced three distinct labor contracts, which are fixed wage (FW), individual piece rate (IPR), and group piece rate (GPR), to 120 workers during the dry planting season in 2011. We find strong evidence on peer effects that other worker's ability positively affects individual productivity level. In addition, individual social preferences impinge on worker's behavior in three ways. First, altruism and inequality aversion driven by guiltiness incentivize workers to put more effort for peers. Second, those intrinsic motivations, however, are crowded out by the monetary incentives provided in IPR and GPR. Finally, free-riding behavior in GPR is mitigated if peers have the propensity to sanction shirkers although its effect tends to diminish.

## Session II.B Public Goods II

- [1] Group Size and the Effectiveness of the Punishment Mechanism in the VCM: An Experimental Investigation  
Liangcong Fan (Zhejiang University, [flc1984@163.com](mailto:flc1984@163.com))

**Abstract:** This study examines the effectiveness of the individual-punishment mechanism in larger groups, comparing groups of four versus 40 participants. We find that the individual punishment mechanism is remarkably robust when the MPCR is held constant despite the coordination problems inherent in an institution relying on decentralized individual punishment decisions in the context of a larger group. This reflects increased per-capita expenditures on punishment that offset the greater coordination difficulties in the larger group. However, if the marginal group return stays constant, resulting in an MPCR that shrinks with group size, no such offset occurs and punishment loses much but not all of its effectiveness at encouraging voluntary contributions to a public good.

[2] Session Size and Identity on Cooperation: Experimental Evidence from a Public Good Experiment

Haoran He (Beijing Normal University, [haoran.he@bnu.edu.cn](mailto:haoran.he@bnu.edu.cn))

**Abstract:** The effect of session size on individual behavior has long been ignored in experimental studies on cooperation, while it may play a role in affecting behavior via changing people's perceptions of the teams they are randomly assigned to. Using a finitely repeated public goods experiment, we investigate how the size of a session and strength of identity influence contribution to the public good. We vary the session size with either 8 or 24 participants to create a small or large organization and manipulate the strength of a manufactured organization identity by carrying out an identity building activity with all participants in a session (strong identity) or not (weak identity). We find that only when session size is small and identity is strong higher level of contribution can be induced. Our finding hence suggests that the control of session size is needed if there is a variation of identity strength, otherwise the ad hoc choice is fine.

[3] Endowment heterogeneity, identity, punishment and cooperation: Evidence from a public good experiment

Qian Weng (University of Gothenburg, [qian.weng@economics.gu.se](mailto:qian.weng@economics.gu.se))

**Abstract:** Using a finitely repeated linear public good experiment, we investigate how endowment distribution (homogenous or heterogeneous), identity strength (strong or weak), and punishment (without and with punishment opportunities) interactively influence contribution to a public good. We find that the existence of punishment opportunities is effective in fostering cooperation in all endowment distribution and identity strength combinations. When punishment is not available, strong identity can counteract the negative impact of heterogeneous endowment on cooperation, whereas it has no effect on the homogenous groups. When punishment is available, contribution rates in homogenous endowment and strong identity treatment significantly outstand the rest. When breaking down heterogeneous groups to various endowment levels, we observe that when punishment is not possible, lowest endowment subjects always contribute the largest share of their endowment compared to subjects of higher endowment levels, irrespective of the strength of identity. Strong identity increases contribution rates in all endowment levels. When punishment is possible, subjects of different endowment levels contribute similar share to the public good, and identity does not have any effect.

[4] Learning away from the dominant strategy: experimental analysis of a public goods game with punishment institution

Ai Takeuchi (Waseda University, [ai-tak@moegi.waseda.jp](mailto:ai-tak@moegi.waseda.jp))

**Abstract:** This study investigates a condition in which subjects' choices may diverge from the equilibrium in the long run. The condition of focus is whether an equilibrium strategy is a finite population evolutionary stable strategy (FESS). We study this condition in a linear public goods game with a centralized punishment institution. By varying one parameter, we compare treatments in which a dominant strategy is and is not a FESS by using a laboratory experiment. In both treatments, subjects' choices bifurcate to the dominant strategy and the FESS. Although the dominant strategy is played more frequently, in a treatment where the two are different, the number of FESS choices gradually increases with repetition. In the game considered, this implies a decrease in efficiency as the FESS outcome is Pareto dominated by the dominant strategy equilibrium. The increase in the frequency of FESS choices is reduced by limiting the available feedback information to an aggregated measure (the sum of contributions), rather than individuals' choices and payoffs.

## Session II.C Individual Time Preferences

### [1] Discounting the risky future

Stephen Cheung (University of Sydney, [S.Cheung@econ.usyd.edu.au](mailto:S.Cheung@econ.usyd.edu.au))

**Abstract:** The nature of the relationship between risk and time preferences has been a lively field 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 (2010) have recently argued 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 design and preliminary findings of a study specifically intended to evaluate the validity of these two procedures, and to disentangle their implications for the estimation of time preferences.

Risk Preferences, Time preferences,

### [2] Demand for Commitment Devices: Insights from A Reference Dependent Preferences Model

Quang Nguyen (Nanyang Technological University, [dqnguyen@ntu.edu.sg](mailto:dqnguyen@ntu.edu.sg))

**Abstract:** This study addresses key behavioral factors affecting demand for commitment devices. We explicitly examine the effect of sophistication on demand for Roscas, one of the most well known informal commitment devices. We develop a model following a reference dependent preferences approach, and generalize existing formulations of partial naivete with respect to hyperbolic discounting by O'Donoghue and Rabin (2001). The model predicts that sophistication bias, specifically overestimation of time consistency, can actually increase the likelihood for the agents to take up commitment devices. We also find that the attachment effect, due to loss aversion as well as its interaction with hyperbolic discounting, increases the demand for commitment devices. Utilizing a unique combination of experiment and household data in Vietnam, we analyze the determinants of Rosca participation. The empirical exercise verifies our model's predictions.

[3] A Direct Experimental Test of the Hyperbolic Discounting Hypothesis

Songfa Zhong (National University of Singapore, [zhongsongfa@gmail.com](mailto:zhongsongfa@gmail.com))

**Abstract:** In accounting for the phenomenon of present bias, the hyperbolic discounting and quasi-hyperbolic discounting models have distinct predictions beyond today. In three studies involving 1378 subjects in total, the average discount rates assessed in the delayed menus are each significantly lower than those for a proximate menu, but there is no significant difference between the average discount rates assessed in two of the delayed menus. We provide the first evidence supporting diminishing rate of discounting beyond the present period. Our findings suggest a modified quasi-hyperbolic hypothesis with distinct present and near term bias followed by exponential discounting into the future.

[4] Concavity of Time Discount Function: An Experimental Study

Kan Takeuchi (Hitotsubashi University, [takeuchi.kan@gmail.com](mailto:takeuchi.kan@gmail.com))

**Abstract:** This paper focuses on future bias, a new anomaly in the literature of time preference. The experiment with 37 subjects also provides the evidence in favor of an inverse S-shaped time discount function rather than a hyperbolic (and convex) time discount function. Where the time discount function is concave, the decision-maker exhibits future bias. Future bias has seldom been reported in the literature, since it is not easily identified. To detect future bias, this experiment lets subjects compare two future reward options whose interval is shorter than 4 weeks. The new elicitation method is also independent of the confounding factors that are common in the existing experiments. Specifically, the method does not put any assumption on the form of utility function and does not assume that time and reward are separable either. This is a great advantage that enables us to estimate time preference more precisely.

## Session II.D Games

[1] In-group Favouritism and Out-group Discrimination in Naturally Occurring Groups

Klaus Abbink (Monash University, [klaus.abbink@monash.edu](mailto:klaus.abbink@monash.edu))

**Abstract:** We report an experiment on a multi-player allocation game. One player, the allocator, divides a sum of money between three large groups of 20 individuals each, and him- or herself. The groups consist of supporters of the two main political movements in Thailand, the yellow and the red shirts, and a third group of politically unattached individuals. The allocator is a randomly drawn member of one of the groups. This setting allows us to distinguish between in-group favouritism (allocating more to the own group than to neutrals) and out-group discrimination (allocating less to the opposing group than to neutrals). We also run a control treatment with artificially labelled groups. We find evidence for both favouritism and discrimination, which is stronger in natural than in artificial groups. In contrast to the political claims of the movements, differences between yellow and red supporters cannot be detected.

[2] Experimental Implementations and Robustness of Fully Revealing Equilibria in Multidimensional Cheap Talk

Wooyoung Lim (Hong Kong University of Science and Technology, [wooyoung78.lim@gmail.com](mailto:wooyoung78.lim@gmail.com))

**Abstract:** We design experiments that capture in a simple discrete setting the strategic environment studied

in the theoretical literature of multidimensional cheap talk (Battaglini, 2002). Two senders transmit information to a receiver over a 22 state space; interests are overall misaligned but common interests can be found between each sender and the receiver along different dimensional components of the state. We find that the frequency of the receivers fully identifying the state is significantly higher in two-sender games than in the control game with one sender, in a manner that is consistent with the respective fully and partially revealing equilibria. By manipulating the message/state space to control for the emergence of out-of-equilibrium beliefs, we observe a faster convergence to equilibrium in two-sender games when the fully revealing equilibrium is free of out-of-equilibrium Beliefs and is thus robust; the frequency of full revelation outcomes is, however, significantly lower when the equilibrium requires the support of "implausible beliefs." We rationalize our findings with a behavioral model that features a positive fraction of non-strategic, truthful senders.

### [3] Coordination under Payoff Uncertainty

Lan Yao (Shanghai University of Finance and Economics, [lanyaosh@gmail.com](mailto:lanyaosh@gmail.com))

**Abstract:** We study behavior in a minimum-input coordination game with uncertainty about payoffs. Players select among ordered investment choices, receive a payoff that is increasing in the minimum investment by any player and decreasing in the distance from the player's investment and the minimum (i.e., a minimum-input or weak-link coordination game). To assess how strategic uncertainty is influenced by uncertainty about fundamentals, we introduce a random shock that changes all payoffs by a constant. Thus, in our context, the payoff uncertainty is strategically irrelevant in that players' best responses to opponents' strategy profiles are unchanged by realized states. We find that such uncertainty nevertheless negatively affects efficiency and leads to lower investment choices. We interpret this as evidence that players' perceptions of strategic uncertainty can be influenced by fundamental uncertainty. We find that individual measures of risk aversion partly account for the extent to which a player's strategic choice is influenced by fundamental uncertainty

### [4] A Neuroimaging Study of Strategic Uncertainty: Coordination versus Competition

Chew Soo Hong (National University of Singapore, [chew.soo hong@gmail.com](mailto:chew.soo hong@gmail.com))

**Abstract:** A decision maker may value identically distributed risks arising from different sources of uncertainty differently. This source preference phenomenon encompasses ambiguity aversion (preferring to bet on a known than a less known source of uncertainty) and familiarity bias (preferring to bet on risks from a more familiar source of uncertainty) both of which had been the subject of neuroimaging studies. We extend source preference to strategic uncertainty arising from other's actions in interactive situations and hypothesize that people have a general aversion to strategic uncertainty. We further hypothesize that this aversion may be moderated by the motive underpinning the other player's action. Specifically, people may exhibit an affinity towards games of a cooperative nature but an aversion towards playing more competition-oriented games.

In our neuroimaging study, sixteen subjects each made 48 decisions - entering either a matching pennies game or a coordination game versus receiving a specific amount for sure. The other player made conscious decisions in half the trials and used a dice in the other half. We found a main effect: *playing cooperatively (in the coordination game) is valued higher than playing competitively (in the matching pennies game)*. Across both games, we did not find a significant difference in valuation between playing against a

conscious player versus playing against a randomized player. Yet, *subjects played the coordination game with a conscious player significantly more often than they did against a randomized player, and reversed this pattern when playing matching pennies*. These findings support our second hypothesis but not the first. In terms of imaging, at the perceptual epoch, we found the caudate head to encode the value associated with the decision whether to enter a game. At the decision epoch, the left amygdala and left orbital prefrontal cortex showed an interaction between being strategic and whether the game is cooperative or competitive. *Increased amygdala activation was associated with subjects valuing less the matching pennies game when played against a conscious opponent and the coordination game when played against the dice*.

**3:10 pm-3:40pm          Coffee Break**

**3:40pm-4:55pm          Parallel Session III.A- D**

**Session III.A    Pro and Anti-Social Behavior**

[1] Please Bite the Hand That Feeds You” – an Experimental Test of Stakeholder Legislature

Hanjo Hamann (Max Planck Institute, [hamann@coll.mpg.de](mailto:hamann@coll.mpg.de))

**Abstract:** In whose interest should public corporations be run? Both lawyers and economists have approached this question from different angles, resulting in a wealth of normative literature. Yet positive investigations into the behavioral effects of either stance are lacking. We approach the issue experimentally, using actual German legislature as a backdrop. We build on and extend work by Hamman, Loewenstein and Weber (AER 2010). Their paradigm imitates essential characteristics of a corporation in the lab and thus seems suitable to test different legal interventions. Apart from replicating their findings, we observe that framing subjects to accept obligation for either shareholders or stakeholders has diverse and surprising effects on their behavior, beliefs and attitudes. Our results are particularly relevant for scholars working in law & economics, and we tentatively discuss potential policy implications.

[2] Cheating Under Different Environments—An Experimental Economics Investigation

Xiangdong Qin (Shanghai Jiao Tong University, [xdqin@sjtu.edu.cn](mailto:xdqin@sjtu.edu.cn))

**Abstract:**The primary interest of this study is to compare cheating behaviors under different environment. Our experimental controls are no interaction baseline, symmetric information, competitive environment and low pay versus high pay treatments. Our main findings include that when subjects act alone without information about others cheating behavior, they tend to cheat less. When other subjects' behavior and the consequent payoffs are made known, then cheating increases. However, in the more competitive environment, we observe the bi-modal results, while some payoff maximizers cheat much more than under other environment, other guilt conscious subjects cheat substantially less. The communication possibilities have enhanced the bi-modal behavior with either collusion or refraining from cheating. Possibly owing to the small gap between the low and the high unit payment, we have not observed any impact of the low pay versus high pay treatments on cheating behavior. This study adds to the understanding of cheating behavior in the controlled environment, especially when subjects have the opportunity to interact with each others.

[3] Religiosity and Prosocial Behavior

Yushi Jiang (National University of Singapore, [kicylala@gmail.com](mailto:kicylala@gmail.com))

**Abstract:** Religious and spiritual beliefs are often deemed to be associated positively with prosocial behavior. Despite a growing literature in experimental economics investigating this question, no consensus has been reached, possibly due to population heterogeneity. To control for ethnicity and culture, we administered the Royal Free Interview for Spiritual and Religious Beliefs to a large sample of over one thousand Chinese Singaporean student subjects. In addition, we observed subjects' degree of prosocial behavior in controlled and incentivized economic games designed to elicit moral sentiments, including altruism, fairness, and trust. Subjects self reported religion beliefs relate positively to their tendency towards being prosocial. Specifically, Christian subjects tend to be more associated with being altruistic than those in other categories, including being non-religious while Buddhist-Taoist subjects show higher levels of trust as proposer in the trust game. Significant gender difference was observed in the dictator game, the ultimatum game, and the trust game. Consistent with reported findings in the literature, we found female subjects to be more "egalitarian" across all religious categories. By contrast, we did not find association between observed prosocial behavior and subjects' scores on the spiritual scale. Our paper contributes to a better understanding of the role of religion and spirituality in shaping prosocial behavior. One direction of future research may involve bringing in genetics to study a possible interaction between gene, prosocial behavior, and religious-spiritual environment given that the latter influence tends to begin at a particularly young age.

### **Session III.B Bargaining**

[1] How Responsive Are People to Changes in Their Bargaining Position? Earned Bargaining Power and the 50-50 Norm

Nick Feltovich (Monash University, [nicholas.feltovich@monash.edu](mailto:nicholas.feltovich@monash.edu))

**Abstract:** Previous research has shown that individuals do not respond to changes in their bargaining position to the extent predicted by standard bargaining theories. Most of these results come from experiments with bargaining power allocated exogenously, so that individuals may perceive it as having been "unearned" and thus be reluctant to exploit it. Typically these experiments also allowed equal splits of the "cake" (the amount bargained over) as equilibrium outcomes, leading to a powerful tendency toward 50-50 splits. We conduct a bargaining experiment in which subjects earn their bargaining power through a real-effort task. Treatments are based on the Nash demand game (NDG) and an unstructured bargaining game (UBG). Subjects bargain over a fixed amount of money, with disagreement payments determined entirely by the number of units of the real-effort task successfully completed. Task parameters were set to allow disagreement payoffs above half the cake size, in which case 50-50 splits are not individually rational, and thus not consistent with equilibrium. We find that subjects are least responsive to changes in own and opponent disagreement payoffs in the NDG with both disagreement payments below half the cake size. Responsiveness is higher in the UBG, and in the NDG when one disagreement payment is more than half the cake size; responsiveness is highest in the UBG when a disagreement payment is more than half the cake size. Our results imply that even when real-life bargaining position is determined by past behaviour rather than luck, the extent to which actual bargaining corresponds to theoretical predictions will depend on (1) the institutions within which bargaining takes place, and (2) the distribution of bargaining power; in particular, whether the 50-50 norm is a viable outcome.

[2] Sticking to Prices? - Behavioral Differences in Price Setting

Hakan Holm (Lund University, [hakan.holm@nek.lu.se](mailto:hakan.holm@nek.lu.se))

**Abstract:** This paper suggests a simple separation mechanism, based on heterogeneity among buyers and sellers, to understand price adjustments. One group is made up of “pragmatics” who are open to strategic action in a situation, and the other group comprises “fundamentalists” whose reference point is based on precedent transactions. The authors conduct a Nash bargaining experiment where subjects bargain for a product with a well-known price. The result strongly suggests that both sellers and buyers do in fact separate into different types, which has detrimental effects on the transaction volume. The experiment also provides results on the factors behind this separation.

[3] An Unintended Consequence of Agency: A License to Be Unethical

Fei Song (Ryerson University, [fsong@ryerson.ca](mailto:fsong@ryerson.ca))

**Abstract:** Decision-making involving ethics is ubiquitous in organizational and social life. Earlier research examine decisions made by individuals and only affect the individual decision-maker and his/her individual counterpart. In practice, however, individuals often act as agents, making decisions on behalf of another person/party, whose welfare solely depends on such a decision (e.g. lawyers, financial advisors, doctors, real estate agents). To date, little is known about (un)ethical decision-making when people assume the role of an agent for a principal and what factors may influence the process and outcomes. The primary goal of this paper is to examine whether and to what extent the agent mechanism may mitigate or exacerbate the unethicity of decision-making in socio-economic exchanges. A laboratory experiment was carried out. We employed a modified Ultimatum Game (adopted from Boles, Croson & Murnighan, 2000), where responders do not know the exact size of the sum of money to be divided and thus it is possible for proposers to commit deception in order to achieve a bigger material gain. When sending the division proposal, proposers were asked to send a message along, making claims about the size of the pie. Undergraduate commerce students participated in the experiment. We compare misrepresentations of the size of the pie to be split committed by individuals and agents. Results show that whether one considers the difference between the claim and the actual size, the proportion of the actual size claimed, the frequency of under-claims, agents committed significantly more cheating than individuals.

### Session III.C Financial Decisions

[1] Recognition-Based and Familiarity-Based Portfolio Strategies – An Experimental Study

Linan Diao (Jilin University, [diaoln@jlu.edu.cn](mailto:diaoln@jlu.edu.cn))

**Abstract:** Empirical evidences show that investors tend to be biased toward investing in domestic (home bias) and local (local bias) stocks. Familiarity is considered to be one of the reasons. A similar concept was proposed by Goldstein and Gigerenzer (1999, 2002), known as the recognition heuristic: “when choosing between two objects, of which only one is recognized, choose the recognized. Investors recognize or are familiar with local stocks, expect them to provide higher returns and, therefore, invest more in such stocks”. We conducted an experiment in Jena, Germany to test whether subjects show local bias and use recognition-based and familiarity-based portfolio strategies. We categorized them into an experienced and an inexperienced group; in addition, we used two data periods, i.e., bull market and bear market, to see if

they behave differently in the two markets. Results show that all participants invested more of their endowments in the stock market in bull rather than bear market. All participants showed greater familiarity with local stocks. However, the experienced participants only invested more in local rather than recognized and familiar stocks; on the contrary, the inexperienced participants invested more in recognized and familiar but not local stocks. Our experiment shows no evidence that familiarity is a reason for local bias.

[2] Red Light, Green Light: Color Priming in Financial Decisions

Doron Kliger (University of Haifa, [kliger@econ.haifa.ac.il](mailto:kliger@econ.haifa.ac.il))

**Abstract:** This study explores the role of color exposure as a priming factor in financial decision making. Priming is a process of activating particular connections or associations in memory prior to carrying out an action or task. The associations occur when a certain stimulus or event increases the availability of specific information categories and, as a result, affect decision making. Colors are widely present in the financial decision making arena: at firms' and data providers' websites; television reports; newspaper publications; advertisements; and security market displays, with colors such as red and green prominently employed. Our experimental analysis involves a between subject design exposing subjects to financial substance on colored backgrounds and exploring the effect on their investment decisions. We focus on financial decisions under uncertainty, examining subjects' investment valuations and the probabilities they assign to the possible outcomes. The results indicate that red color priming emphasizes value losses of the underlying asset. To wit, subjects who were exposed to red assigned higher valuations and probabilities to events involving the loss domain, than to events involving the gain domain.

[3] What Numbers to Choose for My Lottery Ticket? Behavior Anomalies in the Chinese Online Lottery Market

Jieyao Ding (Max Planck Institute for Research on Collective Goods, [ding@coll.mpg.de](mailto:ding@coll.mpg.de))

**Abstract:** The Chinese Online Lottery provides field evidence of three anomalies. The first anomaly, which has previously not been documented when there is a financial incentive to overcome, is the guidance effect. Since the target game in this project is a pari-mutuel game, which means people will share the jackpot with other winners, the best strategy should be to choose the least popular numbers among others – information that people could obtain on the webpage. However, to my surprise, instead of doing so, people would choose the most popular numbers among others. The second anomaly tested is the gambler's fallacy. Although it is proved that the gambler's fallacy does exist, the influence lasts only three days, which is much shorter than prior research. Furthermore, the data set's availability makes it possible to show how the two fallacies unfold over time within a round. This was unlikely before the phenomenon of online betting. The result demonstrates that later entrants are subject to more fallacies than earlier ones. Finally, the paper adds to the evidence showing the additional, culturally contingent pull of special numbers. In China, bettors prefer to choose the lucky number 8, even it won the game in prior rounds, but they are reluctant to choose the unlucky number 14 even it has not been picked for a long while.

### Session III.D New Empirical Approaches

[1] Towards an Economic Theory of Consciousness in Decision Making

Wei Huang (The Hong Kong University of Science and Technology, [whuang@ust.hk](mailto:whuang@ust.hk))

**Abstract:** We apply the methodology of information economics in an intra-person multiple-self setting to model the relation between one's economic wellbeing and state of consciousness, including amnesia and delusion, which may underpin some categories of mental (dis-)order. We posit the notion of semi-conscious choice in which the individual habituates into being “strategically” forgetful or delusional to enhance the motivation of one's future selves. We endogenize the individual's habituated state of recall error proneness in equilibrium from his attitude towards intertemporal discounting, including present bias. Here delusion and amnesia are substitute mechanisms. The higher chance of having delusion results from a greater degree of present bias. However, the likelihood of amnesia does not depend monotonically on the magnitude of present bias. The results are also confirmed by our experiment. We further study the ex ante welfare of the decision maker in relation to his equilibrated state of consciousness and offer it as an economic measure of his mental wellbeing. We provide a normative result that it is better to be normal than forgetful or delusional. A higher frequency of social interaction improves the mental well being for both normal and disordered persons, and a high frequency of stressful events is harmful for one's mental health.

[2] Empirical Evidence on the External Validity of Laboratory and Field Data

Andreas Leibbrandt (University of Chicago, [leibbrandt@gmail.com](mailto:leibbrandt@gmail.com))

**Abstract:** Many studies show that individuals are pro-social in the laboratory and suggest that these findings are important for a wide range of field behavior. However, this assumption critically hinges on the generalizability of such laboratory behavior. I investigate the extent to which laboratory experiments measuring social preferences correlate with crucial cooperation in the field. In addition, I investigate the generalizability of field data by correlating different crucial cooperation behaviors in the field from the same individuals. The results provide mixed evidence for the generalizability of both laboratory and field data. First, the behavior in some but not all laboratory experiments is significantly related to field cooperation. Second, the two cooperation behaviors in the field are significantly but modestly related; and third, the strength of the correlation between some laboratory behavior and field cooperation is comparable to the correlation between the two field cooperation behaviors. These findings suggest that generalizability is a concern for laboratory and field data.

[3] Asset Integration and Attitudes to Risk - Theory and Evidence

Glenn Harrison (Georgia State University, [glennwh@ix.netcom.com](mailto:glennwh@ix.netcom.com) )

**Abstract:** 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.

**4:55pm-5:10pm      Break**

**5:10pm-6:00pm      Plenary II**

Evolution and Strategies in the Minority Game: A Multi-Round Strategy Experiment

Joep Sonnemans (University of Amsterdam, [joepsonnemans@gmail.com](mailto:joepsonnemans@gmail.com))

**Abstract:** The minority game is a relatively simple game that can be used to describe network congestion but is also related to market entry games, the El Farol game, cobweb kind markets and (some aspects of) financial markets. Minority games are widely studied using simulations as well as laboratory experiments. The results of simulation analyses depend on the type of strategies used. So far experiments provided little guidance into the type of strategies people use because the set of possible strategies is very large in relation to the limited number of decisions a subject makes in a standard laboratory experiment. We use a strategy method experiment to directly elicit people's strategies in a 5-round internet experiment in which every round takes one week.

The experimental task is to formulate a strategy for a 100-period 5-players minority game. Participants can test as many strategies as they like against randomly selected strategies of the previous week (round). They have thus ample possibilities for experimentation and learning. Every week simulations are run and the participants receive the results by email.

We report characteristics of the strategies. The strategies are then subjected to an evolutionary competition. We find that the strategies people use are very heterogeneous although aggregate outcomes resemble the symmetric Nash equilibrium. The strategies that survive evolutionary competition achieve much higher levels of coordination than the complete pool of strategies.

**Friday, December 16, 2011**

**8:35am-10:15am      Plenary III and IV**

[1] Recent Developments in Behavioral Econometrics

Glenn Harrison (Georgia State University, [glennwh@ix.netcom.com](mailto:glennwh@ix.netcom.com))

**Abstract:** Recent developments in behavioral econometrics have strengthened the potential ties between theory, experimental design, and econometrics. It has been appropriate to allow the protracted division of academic labor in each of these areas, but now is the time to reap the benefits of specialization by undertaking even more trade between the three. Theory provides testable hypotheses and structure between concepts, experiments allow one to develop tight tests of those hypotheses and explore their generality, and econometrics allows one to draw valid inferences about the latent structural concepts. Of course, there is good practice and there is bad practice. And there is a tension between those that would like to see tighter connections between the three, and those that rejoice in the looseness of the connection. We examine six constructive developments, and then four unfortunate developments

[2] Title: Risky Designs: Power, Reliability, Heterogeneity and Context in Experiments Involving Risk

Speaker: Nathaniel Wilcox (Chapman University, [nwilcox@chapman.edu](mailto:nwilcox@chapman.edu))

**Abstract:** The measurement of utility curvature, by means of some elicitation task, is ubiquitous in economics experiments. Most frequently, utility curvature is elicited in one task, called the *measurement task*, so that the experimenter can control for variations of utility curvature in some other central task, called the *target task* (e.g. an auction or game). I ask and answer the following questions about such efforts. How *reliable* are risky choices, and hence derived measures of utility curvature? (Not Very.) Should we expect *heterogeneity* of measured utility curvature to explain a lot, relative to that other central component of choice under risk, *belief and/or weight heterogeneity*? (No.) Should we expect the “nuisance variance” of belief and/or weight heterogeneity to be of consequence when we look for any influence of measured utility curvature in a target task? (Yes.) Do these considerations have strong negative implications for the statistical power of *typical* experimental designs of the kind discussed here? (Yes, Very.) Does it matter if the measurement task and the target task have different “outcome contexts”—even if they essentially involved the same response mode (e.g. binary choice). I argue that the answer to this last question must be yes: Otherwise, the very notion of a risk attitude that is consistent across outcome contexts becomes formally incoherent—at least in any world where risky choices are imperfectly reliable.

**10:15am-10:45am      Coffee Break**

**10:45am-12:00pm      Parallel Session IV.A - D**

**Session IV.A      Competition**

[1] Incentives, Information and Psychological Competition in a Real Effort Task  
Ananish Chaudhuri (University of Auckland, [a.chaudhuri@auckland.ac.nz](mailto:a.chaudhuri@auckland.ac.nz))

**Abstract:** There is a large literature looking at the impact of various incentive schemes in general and tournaments in particular on performance. These include both field studies as in the case of executive positions (Gibbons and Murphy, 1990), chicken farmers Knoeber, 1989, 1994), law firms (Ferrall, 1996), portfolio managers (Brown, 1996) and executives (Xu, 1997) as well as extensive experimental work (Bull, Schotter and Weigelt, 1987, Harbring and Irlenbusch, 2003 and Van Dijk et al. (2001). The basic insight coming out of this literature is that tournaments in general improve performance. In a sense this is the crux of both the classical and neo-classical approaches that psychological competition is the essential feature of market interactions. Competition compels individuals to make better decisions or they risk being driven out of the market. There are at least three explanations as to why competition may lead to better decision making: (1) the role of incentives, that in competitive markets, inefficiencies are punished; (2) the role of information as to how well you might be doing vis-à-vis others and how well it is possible to do; particularly if people use reference points to gauge success and finally (3) the role of psychological competition; the very act of competing against others. We explore aspects of these questions by looking at the role of various incentive schemes on performance in a real effort task as embodied in a multiple cue probabilistic learning task. We compare the impact of extrinsic incentive schemes, where pay is explicitly tied to performance such as piece rates and tournaments, with intrinsic schemes, where players earn a flat salary regardless of performance. In order to separate out the role of psychological competition as opposed to the incentive effects, within our tournament treatments we vary the information that our subjects receive where in some treatment they are paid using a winner-take-all tournament scheme and learn about their

relative standing while in others they are unaware of how they are performing vis-à-vis a pair member. We also use psychological questionnaires to control for trait anxiety and intrinsic motivation. We find that after controlling for levels of anxiety during the task, overall we get better performance (as measured by lower forecasting errors) in the piece-rate and salary treatments, where participants face less competitive pressure. The fact that the salary condition, which provides intrinsic motivation only, does well is instructive and explained in part by the fact that participants in this treatment reported the lowest levels of anxiety. However, if we split the sample into those who are more or less anxious then we find that for the low anxious tournaments lead to better performance while the opposite is true for the more anxious. Our results have implications for the design of incentive schemes and suggest that we need to take better account of intrinsic motivation than is typical in most economic studies. JEL classification: D8; J3; L2 Keywords: Experiments; tournaments; piece rates; real effort task; intrinsic motivation

[2] Tiger Women of Chinese Universities: Sorting by Ambition in Chinese Universities  
Zhuoqiong Chen (Peking University, [chenzq926@gmail.com](mailto:chenzq926@gmail.com))

**Abstract:** A substantial literature demonstrates higher competitiveness and overconfidence among men. However, prior experiments have not exploited the fact that gender can signal the attitudes and preferences important for deciding whether or not to enter a contest. We tested for gender differences in “desire to win” and risk attitude in an all pay auction where low bids are a way to drop out. Contrary to our initial hypothesis and the literature, we found no difference in either at top tier graduate schools. We then expanded the study to a mid-tier undergraduate institution. We recruited entire classes instead of using flyers to avoid selection bias. Consistent with some of the literature, we did not find women were more risk prone than men at the lower tier school. Contrary to the literature, we found women had higher desire to win. Furthermore, the lower tier students of both genders bid higher against higher tier women than against men, suggesting that they believed the higher tier women were either more risk prone or had higher desire to win. This estimation of the gender difference at the top tier schools was corroborated. When we recruited entire classes, top-tier women bid significantly lower against their men than against each other. Both this and the prior result at the mid-tier school suggests that higher tier women have both higher desire to win and are more risk prone. This is just the opposite result found in western universities. The difference suggests that Chinese universities, whose entrance requirements are heavily based on exams sort differently between genders than western universities, where grades and recommendations play a more important role. Our results may also help to explain overbidding in experimental auctions.

[3] How Competitive are Female Professionals? A Tale of Identity Conflict  
Bram Cadsby (University of Guelph, [bcadsby@yahoo.com](mailto:bcadsby@yahoo.com))

**Abstract:** We develop and test experimentally the argument that gender/family and/or professional identities, activated through psychological priming, may influence preference for competition. We focus on female professionals for whom these identities may conflict and male professionals for whom they may be reinforcing. We primed MBA-student participants by administering questionnaires that concerned either gender/family or professional issues. Subsequently, participants undertook a real-effort task and chose between piece-rate and competitive-tournament compensation. For females, professional priming resulted in a significantly greater preference for competition than gender/family priming. Priming had significantly different effects for males. This contrast highlights an identity conflict for female professionals. Beyond the

laboratory, we argue that avoidance of competition by many female professionals may arise from the increased salience of gender/family identity, influenced by marriage and motherhood over time. Such activation of internalized identities might affect career choices and performance, thus contributing to the observed gender and motherhood wage gaps.

#### **Session IV.B Cooperation in Finitely Repeated Games**

[1] To Cooperate or Not? Experiments on the Effects of Anonymity, Ability to Revenge and End-game  
Tzu-Wei Lin (Chung Yuan Christian University, [anitavicki@gmail.com](mailto:anitavicki@gmail.com))

**Abstract:** We conduct a series of finitely repeated prisoner's dilemma games to examine how anonymity and ability of opponents to revenge affect the subject's strategies to cooperate. In this paper, we report three interesting observations from our experiments. Firstly, subjects would be unlikely to cooperate when their opponents are anonymous. Secondly, subjects were not told that they would face “fake” opponents who were actually programmed robots controlled by various probabilities of the tit-for-tat strategy. It is found that those who faced strongly retaliatory robots have more tendency to cooperate. Lastly, end-game effects (cooperation rates decrease towards the end of the game) appear to exist while subjects know exactly the number of ending periods.

[2] Credible Reciprocity

Aashild Johnsen (University of Stavanger Business School, [ashild.a.johnsen@uis.no](mailto:ashild.a.johnsen@uis.no))

**Abstract:** It is well established that repeated game incentives enhances cooperation, trust and trustworthiness. The folk theorem can explain why this happens in infinitely repeated games. In finitely repeated games, however, one must look for other explanations. A common explanation in the literature is that people imitate reciprocity. People who do not exhibit reciprocal preferences cooperate in order to look reciprocal. But if people imitate reciprocity one should also expect that people anticipate imitation by others. In this paper we investigate whether or not people actually apply this strategy, and more importantly whether or not people anticipate reciprocity imitation. We run a two period version of the well-known trust game established by Berg et al (1995). In the first treatment the subjects know that they are going to play the trust game twice (denoted “repeated treatment”). In the other treatment the second round will come as a surprise for the subjects (denoted “surprise treatment”). The idea is that reciprocal behavior is more credible in the first round of the surprise treatment than the first round of the repeated treatment, as they have no reason to act strategically. If subjects anticipate reciprocity imitation in the repeated game, we expect the levels of trust and trustworthiness in the second round to differ between the two treatments - among those pairs that exhibited trust and trustworthiness in the first round. Since those subjects who cooperate in the surprise game have received a credible signal about their opponents' preferences, we expect this to lead to higher levels of trust and trustworthiness in the second round of the surprise treatment. If reciprocity imitation is important for understanding cooperation in finitely repeated games, this should be evident in the difference between the repeated and the surprise treatment.

[3] Efficiency, Team building, and Identity in a Public-goods Game

Natalia Jimenez (University of Granada, [natjj@ugr.es](mailto:natjj@ugr.es))

**Abstract:** The notions of one's social identity, group membership, and friendship networks (homophily) have recently become topics for economic theory and experiments. It has been found that each of these notions has an effect on behavior in economic contexts. However, one interesting aspect that has been ignored in experimental work is the fact that everyone has a number of identities or affiliations, such as one's nationality, one's religion, one's teammates, one's gender, etc. What determines which identity or identities are the most salient in different environments? We conduct public-goods experiments in which we vary whether there is a team-building exercise and whether everyone receives the same endowment or some people receive twice as much as others. We start with two 4-person groups and permit endogenous group-formation via exclusion, exit, and being able to add an unattached person to one's group. We expected a tension between one's team identity and one's endowment identity. We do see some evidence of team identity affecting the endogenous networks when there is only one endowment type; however, when both identities are present, high-endowment participants are strongly attracted to linking up with each other, crowding out team identity as a factor. Perhaps the most interesting result is that the team-building exercise greatly increases the level of contribution without respect to whether one is linked to people from one's team-building exercise. It seems that the positive feeling engendered by the group exercise spills over to other participants, so that having made 'friends' leads to being more cooperative with 'strangers'.

#### **Session IV.C      Matching**

##### [1] Cooperation in Partnerships -- The Role of Breakups and Reputation

Ralph-C Bayer (University of Adelaide, [ralph.bayer@adelaide.edu.au](mailto:ralph.bayer@adelaide.edu.au))

**Abstract:** We investigate experimentally if endogenous partnership formation improves efficiency in social dilemmas. Subjects play repeated two-player public goods games, where they can break up with their partner after every fourth game. Subjects without a partner rank available singles with respect to the desirability to be matched with them. A stable marriage mechanism determines the new matches. We find that endogenous group formation can increase efficiency. Both the provision of contribution history at the time of re-matching and bonuses for staying in a partnership have positive effects. At least one of these factors has to be present for an efficiency improvement.

##### [2] Experimental results on the roommate problem

Elena Molis (Universidad de Granada, [emolis@ugr.es](mailto:emolis@ugr.es))

**Abstract:** We use laboratory experiments to analyze decentralized decision-making in one-sided matching markets. We find that subjects tend to make decisions in line with theoretical models, as their offering and accepting decisions are only guided by the objective of improving upon the status quo. However, isolated individual mistakes that do not disappear with experience or time, often make theoretically-stable matchings unstable in the laboratory. Markets with incomplete information are especially prone to this problem.

##### [3] An Experimental Study of The Tokyo Mechanism for School Choice Problem

Toshiji Kawagoe (Future University – Hakodate, [kawagoe@fun.ac.jp](mailto:kawagoe@fun.ac.jp))

**Abstract:** We present an experimental study of the Tokyo mechanism in comparison with two well-known

matching mechanisms, the Boston and the Gale-Shapley (GS) mechanisms for school choice problem. The Boston is influential in practice because it was introduced firstly. But the Boston is not strategy-proof. On the other hand, the GS is strategy-proof and achieves stable matching. But the matching achieved under the GS is not necessarily efficient. The Tokyo mechanism is used in practice mainly in Tokyo and it is representative school choice mechanism in Japan. In the Tokyo, each student has a district school. Each school has unlimited capacity for student living in the district and limited capacity for students applying from the other district. Thus, if a student applies for his district school, the student is immediately accepted. Then a student applying from the other district is accepted if the school applied has vacant capacity and the student's priority is higher than other applicants from the other district. The Tokyo is not strategy-proof as the Boston. In our experiment with three schools and six students, we compare these three mechanisms in several preference profiles. Our results showed that 1) efficiency is the highest under the Boston when truth-telling is equilibrium, 2) efficiency is the highest under the GS when truth-telling is not equilibrium, and 3) efficiency achieved under the Tokyo is always in-between the Boston and the GS. Thus the Tokyo is riskless mechanism in the sense that it constantly achieves sub-efficient matching regardless of preference profiles.

#### **Session IV.D Markets**

[1] Are "Rockets and Feathers" Caused by Search or Informational Frictions?

Changxia Ke (Max Planck Institute for Tax Law and Public Finance, [changxia.ke@ip.mpg.de](mailto:changxia.ke@ip.mpg.de))

**Abstract:** Prices usually adjust much faster when costs increase than when costs decrease. The mechanism driving this "Rockets-and-Feathers" phenomenon is not well understood despite of ample empirical evidence for its existence. We use simple experimental markets with and without consumer search and either privately or publicly observed cost shocks to study this puzzle. In contrast to the theoretical predictions, we observe price dispersion and asymmetric price adjustment in all four settings. We attribute the pricing behavior to bounded rationality and its interaction with adaptive expectations. We conclude that neither search costs nor private information are indispensable for prices to adjust asymmetrically.

[2] A Combinatorial Mechanism to Reallocate Airport Slots - An Experimental Study

Fangzhou Zhang (Shanghai Jiaotong University, [flyngark@hotmail.com](mailto:flyngark@hotmail.com))

**Abstract:** A new combinatorial mechanism is studied to increase the efficiency of airport slot allocation among cash-motivated bidders, who are allowed to exchange within a centralized combinatorial mechanism the slot he holds for the slot he would like to hold. Four treatments with two different factors (vickrey price versus first price, contingent versus non-contingent) are compared. We find that the combinatorial mechanism will, except for certain observations in non-contingent treatment, increase the efficiency through reallocation. The Pareto-optimal frontier can nearly be reached when bidders could exchange contingently. The bidders receive moderately low profits in first price treatment but high profits in vickrey price treatment, while conversely the social planner will get high revenue in first price treatment and incur loss in vickrey price treatment. It is further analyzed that the expectation to be paid for his contribution to social welfare in vickrey-price treatment drives the bidder to behave more aggressive than in first-price treatment, while the exposure risk under non-contingent treatment will make the bidder to be conservative.

[3] The Hayek Hypothesis and the Long Run Competitive Equilibrium: an Experimental Investigation  
Zhenxuan Zhang (Xiamen University, [Zhenxuan.Zhang@gmail.com](mailto:Zhenxuan.Zhang@gmail.com))

**Abstract:** This paper studies the performance of the double auction market when the production requires the levels of some inputs need to set in advance of pricing and production level decisions. Our experimental results show that Vernon Smith's "Hayak Hypothesis" extends to the long run partial equilibrium case. This is true both for a technology that generates a U-shaped long run average cost curve and a equilibrium, and a constant returns to scale technology that generate multiple equilibrium. Despite the coordination problem, there is higher allocative efficiency in the constant returns to scale treatment than the unique equilibrium treatment.

**12:00pm-1:30pm          Lunch**

**1:30pm-3:10pm          Parallel Session V.A- D**

**Session V.A    Trust    I**

[1] To Lie or Not to Lie

Jie Liang (Monash University, [xiaogan2008@gmail.com](mailto:xiaogan2008@gmail.com))

**Abstract:** To lie or not to lie Some experimental evidences from Chinese Christian Jie Liang, Monash University Yingxi Liu, Xiamen University In the past studies of cooperation, religion backgrounds were always found significantly decreasing lies, thus promoting trust, which may play a vital role in cooperation behavior. Gneezy (2005) firstly designed a liar game to test the level of trust. Based on his work, this article combines a religiosity questionnaire and a liar game experiment together to investigate this hypothesis in China. Using a classical Christian test table, we separate the nominal Christian and the Christian with self-conscious. The Christian with self-conscious also invest money and time on their own faith. Then both the trustiness and trustworthiness in/between groups are tested. In this article, we do find the Christian with self-conscious more trustiness and trustworthiness than the nominal Christian. Ordinary people also consider Christian more trustiness and trustworthiness despite they cannot distinguish nominal or true Christian accurately. Comparing to the World Value Survey, our results reveal the deeper relationship between trust and religion.

[2] Ultimatum Game and Risk Experiment on Matrilineal Mosuo and Patriarchal Yi

Binglin Gong (Fudan University, [binglin@gmail.com](mailto:binglin@gmail.com))

**Abstract:** We conduct an experiment on the ultimatum game (UG) in one-shot strategy method, using subjects of the neighboring matrilineal Mosuo and patriarchal Yi in China. After the UG decision, subjects are asked to do a risk test that is congruent to the UG in form. We find that Yi women ask for significantly higher shares as proposers than Yi men while Mosuo women make fairer divisions than Mosuo men after controlling for risk attitude and demographic information. However, the fair divisions give highest payoffs to Mosuo women and the aggressiveness of Yi women leave them the lowest payoffs. In addition, we find risk attitude and factors like family size, satisfaction with life and peasantry among others of significant effects for the UG decisions.

[3] Deserving Altruism: Type Preferences in the Laboratory

David Ong (Peking University HSBC Business School, [dvdng@ucdavis.edu](mailto:dvdng@ucdavis.edu))

**Abstract:** Recent experimental evidence has shown that though people are not completely selfish, they may be reluctantly altruistic. Doubleblind experiments and silent exiting also significantly decreased giving. Positive reciprocity has always been rare in standard trust games, where subjects seldom give more than dictators with the same endowment. Lin and Ong 2011 however found strong positive reciprocity in a two stage double-blind/silent exiting trust game in which the 2nd player knew that the 1st player was not informed about the possibility that the 2nd player could reciprocate. We look for the possibility that 1st players could better signal their altruism in Lin and Ong's two stage dictator game than standard dictator and trust games. The possibility of "type preferences" was suggested by the theory of Gul and Pesendorfer 2011, and by other experiments, where players' characteristics, like their faces were revealed. However, to our knowledge prior experimental studies leave open the possibility that something other than the "altruism type" of the recipient caused the treatment effect. We introduced a 3rd player into Lin and Ong's 2011 design, again unknown to the 1st player. This 3rd player could give part of a now exogenously fixed endowment to the 1st player after observing the 1st player's giving to the 2nd player. We found that 3rd player giving was significantly correlated to 1st player giving to the 2nd player, and not significantly correlated with endowment. Examining giving at different levels of endowment suggests that the result is not consistent with the "social influence" of 1st player. We also make methodological contributions suggesting that there is no difference between implicit and explicit double blindness with silent exiting.

[4] Paradigm Shift in Experimental Software Development and Deployment

Walter Yuan (Caltech, [xpwalter@gmail.com](mailto:xpwalter@gmail.com))

**Abstract:** With the popularity of applying an experimental approach for social science research on the rise, the demand for more up-to-date, robust, and scalable software has been increasing as well in recent years. Although desktop applications, such as Z-Tree and Multistage, still dominate the current programming paradigm, a shift to web based applications has been gaining traction. Comparisons on development practices and deployment concerns will be drawn between desktop and web applications, using Multistage and Quota as examples, respectively. Finally, future directions of running experiments on mobile devices, such as smartphones and tablets, from cloud-based services will be discussed.

**Session V.B Public Goods III**

[1] Public-good Games and the Balinese

Robert Veszteg (Waseda University, [rveszteg@gmail.com](mailto:rveszteg@gmail.com))

**Abstract:** The Balinese have been successful for centuries in sustaining cooperation among the members of local communities in order to provide public goods through individual contributions. We survey the experimental literature on public goods and highlight those features of the Balinese tradition that have been proven to be both effective in the experimental laboratory and successful in deterring free-riding on the field. The most prominent features discussed are decentralization, democratic decision-making, the use of two currencies, supervision, and the possibility of imposing severe sanctions for free-riding. Our results not only can help to preserve the high level of cooperation among inhabitants in Bali threatened by migration

flows and the increasingly intense reliance on the market mechanism, but they also provide general insights both for theoreticians and practitioners on how to create successful communities. In addition, the literature review sheds light on several features of public-good games that have not been satisfactorily explored yet by experimental economists. The novelty of our approach lies in looking at the Balinese tradition through the glasses of mechanism design theory and aligning the related findings of experimental economics in order to understand its success and problems.

[2] The Minimum Approval Mechanism Implements the Efficient Public Good Allocation Theoretically and Experimentally

Takehito Masuda (Osaka University, [kge011mt@mail2.econ.osaka-u.ac.jp](mailto:kge011mt@mail2.econ.osaka-u.ac.jp))

**Abstract:** We propose the minimum approval mechanism for the standard linear public goods environment with two players, which is an extension of the mate choice mechanism proposed in Saijo, Okano and Yamakawa (2011) for the prisoner's dilemma game. In the first stage, players simultaneously and privately choose their contributions to the public good. In the second stage, players simultaneously decide whether or not to approve the other player's contribution after observing it. Both contribute what they choose in the first stage if both approve, otherwise both must contribute the minimum of the two contributions in the first stage. In experiments, a rapid convergence to the efficient allocation was observed, as predicted by backward elimination of weakly dominated strategies (BEWDS). Especially, stage-wise single-round elimination well describes typical subject's behavior across treatments.

[3] Impure public goods and pro-social behaviour: an experiment

Alistair Munro (National Graduate Institute for Policy Studies, [alistair-munro@grips.ac.jp](mailto:alistair-munro@grips.ac.jp))

**Abstract:** An impure public good is a commodity that combines public and private characteristics in fixed proportions. Green goods such as dolphin-friendly tuna or green electricity programs provide increasingly popular examples of impure goods. We design an experiment to test how the presence of impure public goods affects pro-social behaviour. We set parameters, such that from a theoretical point of view the presence of the impure public good is behaviorally irrelevant. In a baseline setting, the impure public good provides only small contributions to the public good. We observe that on aggregate pro-social behaviour, defined as total contributions to the public good, is lower in the presence of the impure good. Some individuals do not alter their decisions, but roughly two fifths of subjects make a lower contribution to the public good in the presence of the impure public good. On the contrary, in the case where the impure public good favours the public good component at the expense of private earnings, individuals are unaffected in their behaviour. We conclude that the presence of green goods which have only a small pro-social component may reduce pro-environmental behaviour.

## Session V.D Individual Choice under Uncertainty

[1] The Independence Axiom and the Bipolar Behaviorist

Glenn Harrison (Georgia State University, [glennwh@ix.netcom.com](mailto:glennwh@ix.netcom.com) )

**Abstract:** Developments in the theory of risk require an 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 on the basis of experiments that have to assume the independence axiom. We refer to this as the Bipolar Behavioral Hypothesis: decision makers violate the independence axiom when directly comparing two lotteries, but they obey the axiom when evaluating the multiple lotteries that make up the incentive structure of a multiple-task experiment. We offer direct tests of the axiom and the evidence for probability weighting. We reject the Bipolar Behavioral Hypothesis: we find that non-parametric preferences estimated for the Rank-Dependent Utility model are significantly affected when one elicits choices with procedures that require the assumption of independence, as compared to choices with procedures that do not require that assumption. We then propose, and estimate, theoretically consistent models of behavior in experiments that allow for violations of the axiom whenever it applies.

[2] Allais Revisited: A Lottery Choice Experiment

Grzegorz Mardyla (Kinki University, [greg@kindai.ac.jp](mailto:greg@kindai.ac.jp))

**Abstract:** Using an extension of a standard multi-stage lottery design with a BDM-type mechanism, we experimentally examine Allais-type discontinuous preferences over certain and uncertain outcomes under several design variations. In particular, our lottery choice task allows us to discern choice behavior patterns in conditions of (1) certainty vs. uncertainty, (2) gains vs. losses, (3) large stakes vs. small stakes. We find that choices are indeed less consistent for lotteries with all outcomes involving uncertainty but only in the domain of gains. On the other hand, while testing for the validity of utility theories, decisions appear to depart from the expected utility theory predictions in uncertainty/uncertainty tasks much farther than in certainty/uncertainty tasks in the domain of losses only. Additionally, we find that choices are often unstable across objectively identical conditions.

[3] Variants on Two-stage Lottery: An Experimental Study

Bin Miao (National University of Singapore, [binmiao11@gmail.com](mailto:binmiao11@gmail.com))

**Abstract:** Employing a novel experimental design, this paper investigates risk attitudes toward two-stage lotteries. Considerable heterogeneity is observed in preferences regarding first-stage risks, which provides empirical challenge for a number of existing models. At last, we propose a two stage mean-variance behavioral model that may account for the observed behavioral patterns.

[4] Comparative Ambiguity Aversion: Theory and Experiment

Jiaying Qiu (Radboud University Nijmegen, [j.qiu@fm.ru.nl](mailto:j.qiu@fm.ru.nl))

**Abstract:** 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 challenge from the finding that ambiguity aversion is more pronounced when an ambiguous asset is presented along with a risky asset than it is presented in isolation. We developed a theoretical model based on reference dependence hypothesis for this observation. We hypothesize that, when the risky asset and the ambiguous asset are presented together, (1) individuals form subjective beliefs on the potential winning probability of the ambiguous asset; (2) they use the winning probability of the risky asset as the reference point to evaluate the potential winning probabilities of the

ambiguous asset; (3) potential winning probabilities of the ambiguous asset greater than the reference point are coded as gains, while those smaller than the reference point are coded as losses; (4) individuals weight losses in probability heavier than gains in probability. We tested the crucial assumption, reference dependence, in an experiment and found supporting evidence.

## **Session V.D     Financial and Asset Markets**

### [1] Strategic obfuscation and consumer protection policy in financial markets

Yiquan Gu (University of Liverpool Management School, [yiquan.gu@liv.ac.uk](mailto:yiquan.gu@liv.ac.uk))

**Abstract:** This paper studies obfuscation decisions by firms in retail financial markets theoretically and experimentally. We show that more prominent firms are more likely to obfuscate. While prominent firms always choose maximum obfuscation, the obfuscation by less prominent firms depends on the degree of asymmetry in prominence and consumer protection policy. We evaluate the impact of a consumer protection policy that limits the scope of obfuscation. We show that such a policy may not be effective as less prominent firms may increase their obfuscation practice.

### [2] Bubbles and Experiences: An Experiment with a Steady Inflow of New Traders

Jipeng Zhang (Nanyang Technological University, [jpzhang@ntu.edu.sg](mailto:jpzhang@ntu.edu.sg))

**Abstract:** In this paper, we revisit the effect of traders' experience on bubble formation in the experimental asset market and reconcile some contrasting findings, on the relation between experience and bubble, from experimental and field studies. Specifically, we introduce a steady inflow of inexperienced traders in the repeatedly operated asset markets, and find that bubbles are not substantially abated when part of traders earn more experience and most bubble measures are not significantly different across the sequence of the asset markets. Our findings demonstrate that the inflow of new investors plays a role in the formation of asset bubble.

### [3] Dealer Behavior in Extreme Markets

Chi Sheh (University of the West, [chisheh@uh.edu](mailto:chisheh@uh.edu))

**Abstract:** As was seen during the 'flash crash' of May 6th 2010, liquidity can vanish in an instant in the hyper-dynamic market structures that exist in modern financial markets. We examine the behavior of security dealers under extreme market environments with a high level of asymmetric information. We highlight the unpredictability of the potential crash condition by setting up a market environment where dealers do not know the level of asymmetric information, while allowing them to exit the market at their discretion. While markets are not open as often when subjected to severe asymmetric information, we find that competitive dealer markets are more resilient to a drastic increase in the level of asymmetric information compared to a sole dealer market. At the same time, a competitive dealer market also delivers higher depth and smaller spreads, thereby reducing offering lower trading costs to customers. This research has potential implications with respect to the design of dealer markets.

### [4] Underpricing of Initial Public Offerings in Controlled Laboratory Experiments

Tibor Neugebauer (University of Luxembourg, [tibor.neugebauer@uni.lu](mailto:tibor.neugebauer@uni.lu))

**Abstract:** We study in the experimental economics laboratory three different multi-unit uniform auction formats for the initial pricing of tradable financial securities. 1) The sealed bid auction is compared to 2) the dynamic auction where the current prices are updated in real time, and to 3) a two-staged bookbuilding mechanism in which sealed bids determine the fixed price at the first stage and quantities are allocated to bidders in the second stage. The initial prices are compared to the prices of the shares at the exchange and also to their intrinsic value. We observe initial underpricing with respect to both measures in each observation of our experiment. The results are the same for markets of inexperienced subjects and of once-experienced subjects. We conclude that the disposition effect is a potential driver of this observation.

**3:10pm-3:40pm                      Coffee Break**

**3:40pm-4:30pm                      Plenary VI**

Bubbles in Experimental Asset Markets

Michael Kirchler (University of Innsbruck, [michael.kirchler@uibk.ac.at](mailto:michael.kirchler@uibk.ac.at))

**Abstract:** It has been argued that one reason for bubbles evolving in the recent financial crises was excessive risk taking stemming from bonus systems and option based compensation within financial institutions. By running laboratory asset markets, we investigate the impact of trader incentives on market efficiency. In a 2x2 design, we vary the incentive structure (either “linear” or “option-like”) and the riskiness of the underlying asset (either “low” or “high”) to identify their importance as drivers of mispricing and overvaluation. We observe (i) strong overvaluation and mispricing if option-like incentives are coupled with high-risk assets. (ii) These bubbles are in fact rational since option-like incentives result in a risk-shifting problem. Although overvaluation is rational from an individual profit maximizing perspective, it is harmful on an aggregate level since prices are no longer informationally efficient. Thus, market prices lose their function of pricing financial assets correctly.

**4:30pm-4:45pm                      Break**

**4:45pm-6:00pm                      Parallel Session VI.A - D**

**Session VI.A    Trust    II**

[1] The Dynamic Interplay of Inequality and Trust - An Experimental Study

Ben Greiner (University of New South Wales, [bgreiner@unsw.edu.au](mailto:bgreiner@unsw.edu.au))

**Abstract:** We study the interplay of inequality and trust in a dynamic growth game, in which trust increases efficiency and thus allows higher growth of the laboratory economy in the future. We find that trust (as measured by the percentage of wealth invested in a trust game) is initially high in a treatment starting with equal endowments, but decreases over time. In a treatment with unequal endowments, trust is initially lower yet more robust. The disparity of wealth distributions across economies mitigates over time. Our findings suggest that both the level and the (exogenous or endogenous) source of inequality matters for the dynamics of trust.

[2] Playing the Trust Game with Other People's Money

Miguel Luzuriaga (University of Stavanger, [miguel.a.luzuriaga@uis.no](mailto:miguel.a.luzuriaga@uis.no))

**Abstract:** In many situations people make decisions on behalf of others. Investment managers are managing other people's money; CEOs make decisions on behalf of boards; etc. Such decision-making often involve to trust or act trustworthy on behalf of others. It is well established that reciprocal preferences help people trust each other, but do reciprocity matter when people make decisions on behalf of others? In this paper we investigate whether people trust and honor trust when they are playing with other people's money. We adopt the well-known trust game by Berg et al., 1995, with the important difference that the trustor (sender) who sends money to the trustee (receiver) does this on behalf of a third party (client). We find that senders who make decisions on behalf of clients do not behave different from senders who manage their own money. Interestingly, we find that the receivers return a significantly less amount when senders send their clients' money. Since the returned amount goes into the hand of the clients and not the senders, the receivers are not able to reciprocate directly to the senders. In sum, our experiment suggests that reciprocity is important to understand behavior in trust games even when subjects are making decisions on behalf of others, but it matters less compared to situations where people make decisions on behalf of their own.

[3] Gender Differences in Trust and Trustworthiness: Individuals and Single Sex Groups

Ananish Chaudhuri (University of Auckland, [a.chaudhuri@auckland.ac.nz](mailto:a.chaudhuri@auckland.ac.nz))

**Abstract:** We explore difference in the levels of trust and trustworthiness between individuals and groups, except that each group in our study consists of either two males or two females. We wish to understand if single sex groups behave differently from an individual of the same sex. We find that, overall, groups are more trusting than individuals and that group males are the most trusting entity. But at the same time male groups are the least reciprocal. Our results have implications for the study of gender differences in economic transactions. JEL Classification: C72, C91, D83 Keywords: Trust; Reciprocity; Gender; Experiments

## Session VI.B Labor

[1] Behavioral Incentives in An Experimental Labor Market: Individual Performance and Self-selection

Fanzheng Yang (Iowa State University, [fanzhengy@gmail.com](mailto:fanzhengy@gmail.com))

**Abstract:** Recent labor market research suggests that workers of similar ability rank payment schemes differently. In order to study how personal characteristics and performance feedback influence individual behaviors under different pecuniary incentives, we design a lab experiment where "workers" can join "companies" that pay them by different schemes: (a) piece rate; (b) individual tournament; (c) team revenue-sharing; and (d) team tournament. An innovation in this experiment is that we ask subjects to not just rank payment schemes, but also elicit compensating differentials, which allows us to price the cost of a mismatch between a worker and a company. Lab data from our sample of Chinese university students shows the following: (1) risk-averse subjects prefer the piece rate to other three team-based incentives; (2) cooperation incentives attract more women than men, which is partially explained by gender-specific social preferences; (3) feedback about relative performance encourages underconfident subjects with high ability to enter into individual tournament, and moves overconfident subjects with low ability towards less

competitive incentive schemes, helping to reduce the gender gap in competitiveness; (4) in the absence of feedback, siblings are more likely to choose team-based incentives compared with only children of the same ability, but this effect reverses when both groups receive feedback; (5) workers increase their productivity when they are paid by the schemes they like, and this endogenous effect of self-selection on individual performance dominates the exogenous incentive effect.

[2] Ethnic Discrimination in an Experimental Labor Market

Qiqi Wang (Iowa State University, [chichi@iastate.edu](mailto:chichi@iastate.edu))

**Abstract:** We use a laboratory labor market to analyze how discrimination against ethnic minorities depends on the share of the minority in the population. In our experiment, 'employers' set wages of 'workers' who perform a timed real-effort task. Given monetary incentives, employers driven by profit-maximizing behavior would set unbiased wages of workers. In some treatments, we give subtle priming to employers on ethnicity of workers in addition to providing information on expected productivity. We conduct the experiment with student participants on two university campuses in China: (1) an ethnic diverse one, where minorities make up about half of the population, and (2) an ethnic non-diverse one, where most participants are Han Chinese. We find that after controlling for labor market characteristics: (1) a worker's productivity does not depend on his/her ethnic status; (2) being a minority significantly decreases a worker's wage in the non-diverse population; (3) this wage differential comes solely from Han employers; (4) being a minority has no significant effect on a worker's wage in the diverse population. We further discuss the extent to which our results are driven by self-selection of tolerant students into diverse campuses.

[3] Job insecurity and life projects: the role of dismissal barriers institutions

Ramon Cobo Reyes Cano (University of Granada, [ramonc@ugr.es](mailto:ramonc@ugr.es))

**Abstract:** This paper compares the performance of three different types of contracts. The novel aspect of our experimental design is that workers have the chance of investing the money obtained from the labor market in order to increase their profits. The two first types are the standard period-by-period contract and a permanent one. We also propose a new type of contract (automatic renewal) in which workers are re-hired if their effort level is equal to the desired effort given by the firm. We find that efficiency (measured as the sum of both workers and firms' profits) is maximized with the "automatic renewal" contract. Results also show that the presence of dismissal barriers institutions in the labor market may help workers to make investment decisions more accurately, because subjects wait for a safer job position.

## Session VI.C Auctions

[1] An Experimental Investigation of Auctions and Negotiations in Procurement

Jason Shachat (Xiamen University, [jason.shachat@gmail.com](mailto:jason.shachat@gmail.com))

**Abstract:** When procurement organizations use auctions they often use a two-stage process of first conducting an English auction and then renegotiating the price with the auction winner. Bulow and Klemperer (1996) showed that if the bargaining stage consists of an appropriate take it or leave offer, then this is the optimal mechanism for the procurement official. We experimentally evaluate this form of the

optimal mechanism experimentally. We find that suppliers follow their dominant strategy of exiting at their true cost and accepting a take or leave it offer as long as it at least equals their costs. For the buyers, the theory robustly predicts when subjects choose to bargain rather than accept the auction outcome. However, when choosing to bargain, the level of the take or leave it offers strongly depend upon the level of the auction price, which is counter to theoretical predictions. We show these deviations can't be explained by risk aversion nor anticipated regret. However, these deviations are well explained by incorporating probability weighting.

[2] Heterogeneity, Gender, and Learning in Forward and Reverse Auctions

Lijia Wei (Xiamen University, [ljwei.wise@gmail.com](mailto:ljwei.wise@gmail.com))

**Abstract:** We conduct independent private value/cost auction experiments using a within subject treatment of procurement and sell versions of the auctions. We also measure levels of various hormones from collected saliva samples. Our data analysis reveals female subject performance varies with the phase of the menstrual cycle in the sell auctions but not in the procurement auctions. We propose a model of discrete heterogeneity in which a subject follows one of three bidding rules: absolute mark-up, percentage mark-up, and best response to the population of bidders. Further, we allow bidders to switch rules over time according to a Markov process in which transition probabilities are functions of the various regret outcomes experienced in the previous auction period. We find little gender differences in the parameters of the bidding rules, but we do find women are more sensitive to a form of losers regret. This leads to women adopting the conservative absolute mark-up more than men, and correspondingly, we find men use the best response rule more often than women.