Seconda Università degli Studi
NAPOLI
Facoltà di Economia

LabSi
EXPERIMENTAL ECONOMICS LABORATORY - University of Siena

Università degli Studi di Siena
Facoltà di Economia

International Workshop on Behavioural Game Theory and Experiments

Capua, 12-13 Maggio 2006

PROGRAMME AND ABSTRACTS BOOK

PROGRAMME

Friday 12th May

8:30-9:00 Registration

9:00-9:10 Welcome

INVITED LECTURE

9:10-10:15
Andrew Schotter (New York University)
"Paying for Confidence: An Experimental Study of Preferences Over Beliefs"
(co-authored with Kfir Eliaz)
Chair: **Luigi Luini** (Università di Siena)

10:15-10:30 Coffee break

10:30-13:00 **PARALLEL SESSIONS A1-A2**

SESSION A1 - SOCIAL CHOICE
Chair: Sam Bowles (Santa Fé Institute and Università di Siena)

Matthias Sutter* **Stefan Haigner**** and Martin G. Kocher*** (*University of Cologne, **University of Innsbruck, ***University of Amsterdam)
"Choosing the stick or the carrot? – Endogenous institutional choice in social dilemma situations"

Nikos Nikiforakis (Royal Holloway, University of London)
"Punishment and Counter-Punishment in Public Good Games: Can We Really Govern Ourselves?"

Luca Corazzini * and Ben Greiner** (*University of East Anglia and Università Bocconi. **University of Cologne)
"Herding and Social Preferences"

Jim Engle-Warnick * and **Andreas Leibbrandt**** (*McGill University, **University of Zurich)
"Who Gets the Last Word? An Experimental Study of the Expression of Social Norms"

Raul Lopez-Perez (Institute for Empirical Research in Economics, Zürich)
"Social Norm and Games: Communication, Coordination, Cooperation and Punishment"

SESSION A2 - EQUILIBRIUM SELECTION AND COORDINATION
Chair: Andrew Schotter (Columbia Business School)

Richard Engelbrecht-Wiggans* and Elena Katok** (*University of Illinois, **Penn State University)
"Regret and Feedback Information in First-Price Sealed-Bid Auctions"

Andrea Gallice (European University Institute)
"Predicting One Shot Play in 2x2 Games using Beliefs based on Minimax Regret"

Mauro Caminati,* **Alessandro Innocenti*** and **Roberto Ricciuti**** (*Università di Siena **Università di Firenze)
"Drift and equilibrium selection with human and virtual players"

Régis Deloche (Université de Franche-Comté)
"Walras' Correspondence as a natural test of Aumann's conjecture"

Pablo Fajfar (Universidad de Buenos Aires and Universidad Abierta Interamericana)
"Information and competition in Cournot's model: "evidence from the laboratory""

13:00-14:10	Lunch
14:10-15:15	**INVITED LECTURE** **Sam Bowles** (Santa Fé Institute and Università di Siena) "Social Preferences and Public Policy: Are Good Laws a Substitute for Good Citizens?" Chair: **Salvatore Vinci** (Università di Napoli-Parthenope)
15:15-15:30	Coffee break
15:30-18:00	**PARALLEL SESSIONS B1 – B2**

SESSION B1 – TRUST AND RECIPROCITY
Chair: Alessandro Innocenti (Università di Siena)

Maxim Frolov (Université Paris 1, Panthéon-Sorbonne, CNRS)
"The experimental verification of the signal-based crowding-out effect"

Lorenzo Sacconi and **Marco Faillo** (Università di Trento)
"Conformity and Reciprocity in the 'Exclusion Game': An Experimental Investigation"

Massimiliano Landi and **Domenico Colucci** (Università di Firenze)
"Rational and boundedly rational behavior in sender-receiver games"

Vittorio Pelligra (Università di Cagliari)
"How to distinguish between trust and reciprocity"

Alessandro Innocenti* and Maria Grazia Pazienza** (*Università di Siena, **Università di Firenze)
"Altruism and Gender in the Trust Game"

SESSION B2 – SOCIAL PREFERENCES AND PUBLIC GOODS
Chair: Luigi Luini (Università di Siena)

Dirk Engelmann* and **Veronika Grimm**** (*Royal Holloway, University of London, **University of Cologne)
"Overcoming Incentive Constraints? The (In)-effectiveness of Social Interaction"

Emrah Arbak and Marie-Claire Villeval (GATE, CNRS – Université Lyon 2 and Ecole Normale Supérieure)
"Endogenous Leadership: Selection and Efficiency"

Antonio Cabrales* **Raffaele Miniaci**,** Marco Piovesan and **Giovanni Ponti**** (*Universitat Pompeu Fabra, **Università di Padova, ***Università di Brescia, ****Universidad de Alicante and Università di Ferrara)
"Social Preferences and Contracts: An Experiment on Corporate Culture"

Alexander W. Cappelen*° **Astri D. Hole**,** Erik Ø. Sørensen,° and Bertil Tungodden***° (*The University of Oslo**Bergen University College, *** Chr. Michelsen Institute, °Norwegian School of Economics and Business Administration,)
"The pluralism of fairness ideals: An experimental approach"

Marco Casari* and **Luigi Luini**** (*Purdue University, **Università di Siena)
"Peer Punishment in Teams: Emotional or Strategic Choice?"

18:30-22:00 Visit to Masseria Giò Sole and Social Dinner

Saturday 13th May

8:45-10:45 **PARALLEL SESSIONS C1 – C2**

SESSION C1 – PREFERENCES AND INTERTEMPORAL CHOICE

Chair: Richard Engelbrecht-Wiggans (University of Illinois)

Francesco Drago * and Dora Kadar** (*Università di Napoli, Parthenope and IZA, **Università di Siena)
"Rebate or bait? Evidence on time inconsistent consumer behavior"

Astrid Matthey (Humboldt-Universität zu Berlin and Technische Universität Berlin)
"Getting used to the Future: Reference Dependence and Anticipatory Utility"

Marco Casari (Purdue University)
"Pre-commitment and flexibility in a time decision experiment"

Anna Conte,*° **Daniela Di Cagno**° and John Hey**° (* Tor Vergata University and FAO of the UN., **University of York, °Luiss Guido Carli)
"Risk Aversion, Demographics and Unobserved Heterogeneity. Evidence from the Italian TV Show "Affari Tuoi""

SESSION C2 – LEARNING AND INFORMATION

Chair: Patrizia Sbriglia (Università di Napoli 2)

Andrea Morone (Max Planck Institute of Economics and Università di Bari)
"Iterative naïve best reply vs. elimination of dominated strategy in a p-beauty contest"

Martin Kocher*°, Matthias Sutter**° and **Florian Wakolbinger**° (**CREED, University of Amsterdam, **University of Cologne, °University of Innsbruck)
"Naïve advice and observational learning in experimental beauty-contest games"

Giuseppe Attanasi* and Rosemarie Nagel** (*Bocconi University, **Universitat Pompeu Fabra)
"Actions, Beliefs and Feelings: an experimental study on Psychological Game Theory"

Patrizia Sbriglia (Università di Napoli 2)
"Revealing the depth of reasoning in p-beauty contest games"

10.45-11:00 Coffee break

11:00-13:00 **PARALLEL SESSIONS D1 – D2**

SESSION D1 – COORDINATION AND COOPERATION

Chair: Marco Casari (Purdue University)

Todd R. Kaplan* and **Bradley J. Ruffle**** (University of Exeter, **Ben-Gurion University)
"Which way to cooperate"

Hans-Ulrich Stark,*° Dirk Helbing,* Martin Schönhof,* and Janusz A. Hoȩyst** (*Dresden University of Technology, °ETH Zurich, **Warsaw University of Technology)
"Alternating cooperation strategies in a Route Choice game: Theory, experiments, and evidence of learning scenarios"

Michele Bernasconi* and **Matteo Galizzi**** (*Università dell'Insubria, **Università di Brescia)
"Coordination in Networks Formation: Experimental Evidence on Learning and Salience"

Antoine Terracol*° and **Jonathan Vaksmann**° (*Université Lille 3, °Université Paris 1 - Panthéon Sorbonne, CNRS)
"Dumbing down rational players: adaptive learning and teaching in an experimental game"

SESSION D2 – NORMS AND POLICIES

Chair: Francesco Farina (Università di Siena)

Alessandro Marchesiani* and Pietro Senesi** (*University of Tor Vergata, **University of Naples "L'Orientale")
"Search, bargaining and prices in an enlarged monetary union"

Stefan Kohler (European University Institute, Firenze)
"Inequality Aversion and Stochastic Decision-making after Land Reform: Experimental Evidence from Zimbabwean Villages"

Topi Miettinen (University College London and Univeristy of Helsinki)
"Promises and Conventions - A Theory of Pre-play Agreement"

Berly Martawardaya (Università di Siena)
"Social Distance, Moral Property Right and Value of Gratitude in Dictator Game"

13.00-14.00 Closing Lunch

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ABSTRACTS

INVITED LECTURE

Kfir Eliaz and Andrew Schotter (New York University)
"Paying for Confidence: An Experimental Study of Preferences Over Beliefs"

This paper presents experimental evidence suggesting that decision-makers derive an intrinsic benefit from their posterior beliefs: they prefer to make decisions with a high posterior of being correct. We demonstrate this in the lab by showing that most subjects are willing to pay for non-instrumental information - information that may increase the posterior probability that their decision is correct without affecting the decision they make. We show that the subjects. willingness-to-pay is not caused by either a preference for early resolution of uncertainty, as defined by Kreps and Porteus (1978) or a 'disjunction effect' as defined by Tversky and Shafir (1992).

SESSION A1 - SOCIAL CHOICE

Matthias Sutter* Stefan Haigner** and Martin G. Kocher*** (*University of Cologne, *University of Innsbruck, ***University of Amsterdam)
"Choosing the stick or the carrot? – Endogenous institutional choice in social dilemma situations"

We analyze an experimental public goods game in which group members can endogenously determine whether they want to supplement a standard voluntary contribution mechanism with the possibility of rewarding or punishing other group members. We find a large and positive effect of endogenous institutional choice on the level of cooperation in comparison to exogenously implemented institutions. This suggests that democratic participation rights enhance cooperation in groups. With endogenous choice, groups typically vote for the reward option, even though punishment is actually more effective in sustaining high levels of cooperation. Our results are evaluated against the predictions of social preference models.

Nikos Nikiforakis (Royal Holloway, University of London)
"Punishment and Counter-Punishment in Public Good Games: Can We Really Govern Ourselves?"

A number of experimental studies have shown that the opportunity to punish anti-social behaviour increases cooperation levels when agents face a social dilemma. Using a public good experiment, we show that in the presence of counter-punishment opportunities co-operators are less willing to punish free-riders. As a result, cooperation breaks down and groups suffer a welfare loss in comparison to a treatment without punishments where free-riding is predominant. We also find that

a number of subjects behaves in a self-interested manner in the contribution stage but engages in costly counter-punishing if punished.

Luca Corazzini* and Ben Greiner** (*University of East Anglia and Università Bocconi, **University of Cologne)

"Herding and Social Preferences"

We study the role of social preferences in explaining herding behaviour in anonymous risky environments. In an experiment similar to information cascade settings, but with no private information, we find no evidence that inequality aversion causes herding. On the contrary, we observe a significant amount of non-conform behaviour, which cannot be attributed to errors.

Jim Engle-Warnick * and Andreas Leibbrandt** (*McGill University, **University of Zurich)

"Who Gets the Last Word? An Experimental Study of the Expression of Social Norms"

We present a mechanism to elicit the expression of a social norm in a type of trust game. Our mechanism is similar to a committee peer review process, in which experienced subjects pass judgment on the game's outcome between a different pair of subjects. In general we find that subjects take decisions that are broadly consistent with reciprocity in all treatments. The mechanism increases trust significantly, but not reciprocity. One player type is more likely to pass a judgment consistent with indirect reciprocity than the other.

Raul Lopez-Perez (Institute for Empirical Research in Economics, Zürich)

"Social Norm and Games: Communication, Cooperation, Coordination and Punishment"

This paper explicitly introduces norms in games, assuming that they shape the utility and beliefs of (some) players. In particular, I consider a norm of distributive justice and a norm of honesty, and study how they affect communication, cooperation, coordination, and punishment in a varied array of games with or without communication. The theory is consistent with abundant experimental evidence that alternative models of cheap talk or social preferences cannot explain.

SESSION A2 - EQUILIBRIUM SELECTION AND COORDINATION

Richard Engelbrecht-Wiggans and Elena Katok (*University of Illinois, **Penn State University)

"Regret and Feedback Information in First-Price Sealed-Bid Auctions"

We investigate the effect of regret-related feedback information on bidding behaviour in sealed-bid first-price auctions. Two types of regret are possible in this auction format. A winner of the auction may regret paying too much relative to the second highest bid, and a loser may regret missing an opportunity to win at a favourable price. In theory, under very general conditions, being sensitive to winning and paying too much should result in lower average bids, and being sensitive to missing

opportunities to win at a favourable price should result in higher bids. We test those predictions in the laboratory and find strong support for both.

Andrea Gallice (European University Institute)
"Predicting One Shot Play in 2x2 Games using Beliefs based on Minimax Regret"

We present a simple procedure that selects the strategies most likely to be played by inexperienced agents who interact in one shot 2x2 matching pennies games. As a first step we axiomatically describe players' beliefs. We find the minimax regret criterion to be the simplest functional form that satisfies all the axioms. Then we hypothesize players act as if they were best responding to the belief their opponent plays according to minimax regret. When compared with existing experimental evidences about one shot matching pennies games, the procedure correctly indicates the choices of around 80% of the players. Applications to other classes of games are also explored.

Mauro Caminati,* Alessandro Innocenti* and Roberto Ricciuti** (*Università di Siena **Università di Firenze)
"Drift and equilibrium selection with human and virtual players"

The theory of Drift (Binmore and Samuelson, 1999) concerns equilibrium selection in which second-order disturbances may have first-order effects in the emergence of one equilibrium over the other. We use a modified version of the Dalek game to test for the theory. Human agents are matched with virtual agents programmed to bring the outcome of one group to one equilibrium and the other group to the other. Then computerised players are removed and subjects matched against each other. When one of the payoff that does not change the theoretical Nash equilibria is small both equilibria are stable outcomes and each group will continue to play the equilibrium to which it was brought. When this is large only the first equilibrium is stable. This experiment raises methodological issues (information on virtual players and their removal) that are discussed and tackled. Results are consistent with the theory.

Régis Deloche (Université de Franche-Comté)
"Walras' Correspondence as a natural test of Aumann's conjecture"

This paper is devoted to a study of Walras's correspondence as a test of the effectiveness of cheap talk in achieving efficient outcomes in coordination games. First, we use Walras's correspondence with Jevons as an *in vivo* "battle of the sexes" game experiment to show that, in such a game preceded by one round of two-way communication, sequential announcements may help a lot even when messages about actions are not messages to take literally. Second, we use Walras's correspondence with Cournot as an *in vivo* "stag hunt" game experiment to show that, in such a game preceded by one round of two-way communication, sequential announcements are less effective than simultaneous announcements when messages about actions are not simple.

Pablo Fajfar (Universidad de Buenos Aires and Universidad Abierta Interamericana)
"Information and competition in Cournot's model: "evidence from the laboratory""

The evolutive configuration of Cournot's model laid out by Vega-Redondo (1997) leads, in scenarios where there is greater knowledge of the opponents' strategies, to firms' purely imitative behaviour converging globally towards a Walrasian equilibrium rather than to a Nash-Cournot equilibrium. Experimental studies carried out by Huck, S.; Normann, H., and Oechssler, J. (1998), & (1999) validate this hypothesis on the basis that firms are not able to adjust their output in all time periods. Although it is true that at theoretical level the inertia inclusion is necessary, it is also true that, in experimental terms, it's innocuous in order to guarantee the convergence to the Nash-Cournot Equilibrium (Huck, S.; Normann, H., & Oechssler, J. 2002). For this reason, this paper shows that, when firms can adjust output levels in every period, increased knowledge about the opponents becomes irrelevant in terms of the market's competitive performance.

INVITED LECTURE

Sam Bowles (Santa Fé Institute and Università di Siena)
"Social Preferences and Public Policy: Are Good Laws a Substitute for Good Citizens?"

In a second best world of incomplete contracting, laws and policies designed to harness selfregarding preferences to public ends may fail. These failures occur, I will suggest, when conventional self-interest-based policies limit the effectiveness of governance processes that go beyond the usual fiat and contract approach to implementation, and that rely on informal enforcement strategies and the activation of social preferences Experimental evidence indicates that incentives that appeal to self interest may reduce the salience of other-regarding preferences and other civic motives. Historical cases suggest that for this and additional reasons, institutional crowding out occurs. The evidence for these processes is reviewed and a model illustrating the possibly counter productive nature of the conventional approach is presented.

SESSION B1 – TRUST AND RECIPROCITY

Maxim Frolov (Université Paris 1, Panthéon-Sorbonne, CNRS)
"The experimental verification of the signal-based crowding-out effect"

The paper presents the results of the experiment inspired by the article of Bénabou and Tirole, 2003 who have modelled the crowding-out effect as a result of a signal on behalf of a better informed principal. As the presence of a signal effect was never controlled in experiments on crowding-out, we have decided to experimentally check the influence of this type of signal about the agent's performance on the agent's future efforts. The first period of the experiment consisted in the interaction between one employer and two agents, one agent with a high performance and the second with a low performance. The employer could choose whether the high or the low bonus for each agent, after that the agents chose their efforts. Only the employer knew the performance of the agents. In equilibrium the employer chose the high bonus the low-performance agent and vice versa. In the second period agents were asked to make the same choice knowing that the low bonus would be paid for everyone. In the third period players participated in the same roles in a gift

exchange game where agents first chose their efforts which could be rewarded or not by the employer. The low-performance agents could generate less revenue for the employer.

Lorenzo Sacconi and Marco Faillo (Università di Trento)
"Conformity and Reciprocity in the 'Exclusion Game': An Experimental Investigation"

Sacconi and Grimalda (2002, 2005a, 2005b) introduced a model in which two basic motives to action are understood as different type of preferences and represented by a *comprehensive* utility function: the first is *consequentialist* motivation, whereas the second is a *conditional willingness to conform with an ideal*, or a *moral principle*, which they call a *conformist,* or *ideal*, motive to action. A moral ideal is meant as a normative principle of evaluation for collective modes of behaviours which provides agents with a ranking of states of affairs resulting from strategic interaction expressing a greater or lesser consistency with the ideal. The principle moreover is seen as resulting from a (possibly hypothetical) contract between the agents involved in the interaction in an *ex-ante* phase. Thus, the normative principle boils down to a social welfare function that measures the consistency of outcomes with the normative prescriptions provided by the ideal. Hence, agents understand their own and any other agent's degree of conformity in terms of their contribution to carrying out the ideal given the others' expected action, and a person's own motivation to act in conformity with the principle increases with others' (expected) conformity. In other words, individual conformity with the principle is *conditional* on others' conformity with it, as perceived by the agent. This peculiar feature of *reciprocity* over others' behaviour calls for an extension of the usual equipment of decision theory, which is provided by the theory of Psychological Games (Geanakoplos *et al.,* 1989). In this paper we design an experiment for preliminary exploration of the empirical validity of the conformist preferences model, applying it to a simple non cooperative game (the Exclusion Game) meant as the problem of dividing a sum between two active players and a third, dummy player (passive beneficiary). Results are encouraging. Behaviours dramatically change passing from the simple exclusion game to a three steps game, in which once the players have first played the typical non cooperative exclusion game, and before playing it again, they participate in a middle phase, where they anonymously agree on a principle of division. Having agreed on a principle, even though this agreement does not implies reputation effects nor is externally enforceable, induces a substantial part of players - who acted selfishly in the first step - to conform to the principle in the third phase. The additional condition being that they believe the other players will also conform to the agreed principle (what here does happen, as a mater of fact). These results strictly accord with the prediction of the conformist preferences model, but cannot be accounted for by alternative theories of reciprocity.

Massimiliano Landi and Domenico Colucci (Università di Firenze)
"Rational and boundedly rational behavior in sender-receiver games"

We consider a sender-receiver's game in which there is uncertainty about both players' types. We model players rationality along the lines of recent findings in behavioral game theory. We characterize the structure of the equilibria in the reduced game so obtained. We find that there is room for (pure strategy) behaviors that are consistent with (successful) attempts to mislead the receiver, and relate them to the message bin Laden sent on the eye of the 2004 US Presidential elections. We then extend the model to allow for some uncertainty about the correlation in payoff between the sender and the receiver.

Vittorio Pelligra (Università di Cagliari)

"How to distinguish between trust and reciprocity"

The two concepts of trust and reciprocity are tightly intertwined. In most theoretical and experimental studies trust is considered as an expectation of reciprocal behaviour. Under deeper scrutiny, however, the relation between the two concepts turns out to be richer and more complex than that. In a recent study Cox (2004) tries to experimentally distinguish the motivating effect of distributional concerns, on the one hand, and fiduciary and reciprocal factors, on the other, in bargaining games. He claims that: "Decomposing trust from altruism and reciprocity from altruism or inequality aversion is critical to obtaining empirical information that can guide the process of constructing models that can increase the empirical validity of game theory" (p.260). Cox's design, however, leaves unexplored yet another important distinction, that between trust and reciprocity. In this paper I argue that trust cannot be considered only as an expectation of reciprocity, since there are classes of trusting interactions where trustworthiness does not lead to mutual gain and therefore cannot be explained in term of reciprocity. That implies that trust and reciprocity should be kept conceptually separated. The paper provides theoretical and empirical foundations to this distinction I present both a conceptual qualification of the relation between trust and reciprocity and the results of an experiment designed to discriminate between trust as an expectation of reciprocity and trust as an expectation of trustworthiness.

Alessandro Innocenti* and Maria Grazia Pazienza** (*Università di Siena, **Università di Firenze)

"Altruism and Gender in the Trust Game"

This paper analyses gender differences in the trust game. Our experiment implements the triadic design proposed by Cox (2004) to discriminate between transfers resulting from trust or trustworthiness and transfers resulting from altruistic preferences. We observe that women exhibit a higher degree of altruism than men for both trust and trustworthiness but relatively more for trustworthiness. This result provides an explanation to the experimental finding that women reciprocate more than men.

SESSION B2 – SOCIAL PREFERENCES AND PUBLIC GOODS

Dirk Engelmann* and Veronika Grimm** (*Royal Holloway, University of London, **University of Cologne)

"Overcoming Incentive Constraints? The (In)-effectiveness of Social Interaction"

We experimentally study behavior in a simple voting game where players have private information about their preferences. With random matching, subjects overwhelmingly follow the dominant strategy to exaggerate their preferences. Applying the linking mechanism suggested by Jackson and Sonnenschein (2005) captures nearly all achievable efficiency gains. Repeated interaction leads to significant gains in truthful representation and efficiency only if players can choose their partners.

Emrah Arbak and Marie-Claire Villeval (GATE, CNRS – Université Lyon 2 and Ecole Normale Supérieure)

"Endogenous Leadership: Selection and Efficiency"

We consider a two-stage linear voluntary contribution public good in groups composed of three subjects. Each subject may choose to contribute once, either in the first stage as a "leader", or in the second stage as a "follower" after having observed the action of a leader, if any. Leaders have no formal authority and thus are not endowed with punitive or coercive powers. Moreover, although the two-stage game is repeated 30 times, in each round the groups are randomly reshuffled, minimizing the possibility that a subject will be able to recognize an ancient partner of hers in a round. Our aim is investigating the emergence and efficiency of informal leadership in a simple public good game. A novel feature of our treatment is its insistence in maintaining symmetric information and self-selection. In this manner, our study differs from the recent paper by Potters *et al.* (2005) in which a leader has superior information regarding the returns to contributions to the public good. In essence, the authors test the leading-by-example theory introduced by Hermalin (1998). These papers show that the contributions of better-informed individuals may credibly convey information to their less-informed counterparts. Although similar in its information structure, our study also differs from the paper by Gächter and Renner (2004). In our study, becoming a leader is a purely voluntary act, rather than being assigned randomly or being based on some arbitrary rule. When there are no informational gains from contributing first, it is not immediately clear why an individual will choose to lead, except in trivial cases. We consider a particular explanation similar to the one provided by Bénabou and Tirole (2005). Emerging as a leader, much like being a "good" follow, may viably communicate the subject's inherent willingness to be a good team player. While a subject may not find it optimal to contribute in a simultaneous game, not leading or failing to follow a "strong" leader may be considered as a signal of selfishness. Consequently, if some subjects are motivated to maintain a positive public image, they may be impelled to lead or to follow. In order to control for image-related incentives, as in Kumru and Vesterlund (2005), in Information Treatments group members are provided information about partners. As a measure of a subject's generosity, in the beginning of the session, each subject is given the chance to donate a portion of her show-up fee to a charity. Above average donators were awarded a golden coin icon, publicly displayed in Information Treatments to group members. Our expectation is that the provided information will allow individuals to compare themselves to others in their group, effectively being a component of their group-specific social image. Our results show that a leader emerges in most groups. Leaders contribute a significant portion of their endowments in both treatments. Indeed, in most cases, leaders choose to contribute all of their endowments for that round. These early contributions have a positive effect on the contribution of followers and thus increase the overall contribution levels. Leading is definitely costly, but our initial results show that groups with leaders earn, on average, more than those without a leader. Comparing our benchmark results to those obtained from Exogenous Treatment, in which leadership was purely random, we find that leaders contribute more when they can self-select. However, we do not find a significant efficiency gain when the roles are voluntarily achieved. In Information Treatments, where the group members are provided information about their partners, as discussed above, we find that the decision to lead is heavily influenced by each member's comparison of her own charitable donation to those of others. In particular, an above (below) average donator is less (more) likely to be a leader if the other members are below (above) average donators. To summarize, our paper is an attempt to identify inherent and observable factors that induce individuals to become a leader or a follower. While the effects of leadership on contribution behavior have been analyzed recently, our setup distinguishes our paper from others. We do not rely

on extrinsic information asymmetries or assign leadership roles to various subjects. Leadership is endogenously determined within the game. In addition, we advertise various attributes of subjects in order to control for factors that influence subjects' behavior. We find that there is an intrinsic value to be a leader and that having a leader improves group performance on average. Lastly, our results help us identify correlates of social-image other than the individual's leadership choice.

Antonio Cabrales* Raffaele Miniaci,** Marco Piovesan and Giovanni Ponti**** (*Universitat Pompeu Fabra, **Università di Padova, ***Università di Brescia, ****Universidad de Alicante and Università di Ferrara)

"Social Preferences and Contracts: An Experiment on Corporate Culture"

This paper reports experimental evidence on a stylized labor market in which agents are assumed to hold social (i.e. interdependent) preferences a' la Fehr and Schmidt [16]. The experiment is designed as a sequence of three treatments. In the last treatments, principal compete by selecting a contract from a fixed menu, each contract being the optimal solution of the mechanism design problem the principals face for a given social preference parametrization. Agents, randomly matched in pairs, select one of the available contracts (i.e. "choose to work" for a principal). Production is determined by the outcome of a simple effort game induced by the chosen contract. In the previous two treatments, we estimate individual social utility parameters and beliefs by various techniques. We find that social preferences are significant determinants of the matching process between labor supply and demand in the market stage, as well as agents' effort decision

Alexander W. Cappelen*° Astri D. Hole,** Erik Ø. Sørensen,° and Bertil Tungodden***° (*The University of Oslo**Bergen University College, *** Chr. Michelsen Institute, °Norwegian School of Economics and Business Administration,)

"The pluralism of fairness ideals: An experimental approach"

A core question in the contemporary debate on distributive justice is how the fair distribution of income is affected by differences in talent and effort. Important theories of distributive justice, such as strict egalitarianism, liberal egalitarianism and libertarianism, all give different answers to this question. This paper presents the results from a version of the dictator game where the distribution phase is preceded by a production phase. Each player's contribution is a result of an exogenously given talent and a chosen effort. We estimate simultaneously the prevalence of three main principles of distributive justice among the players as well as the distribution of weights they attach to fairness considerations.

Marco Casari* and Luigi Luini** (*Purdue University, **Università di Siena)

"Peer Punishment in Teams: Emotional or Strategic Choice?"

Punishing the free-riders of a team can promote group efficiency but is costly for the punisher. For this reason, economists see punishment as a second-order public good. We show in an experiment that subjects do not value punishment for its deterrence but instead for the satisfaction of retaliating. Punishment choices are made with little strategic reasoning.

SESSION C1 – PREFERENCES AND INTERTEMPORAL CHOICE

Francesco Drago * and Dora Kadar** (*Università di Napoli, Parthenope and IZA, **Università di Siena)
"Rebate or bait? Evidence on time inconsistent consumer behaviour"

In this paper we focus on the widespread price discrimination techniques common in US, namely mail-in-rebate promotions, to provide field evidence for time-inconsistent preferences. Rebates are defined as "a money-refund offer available to consumers who mail in a proof-of-purchase and other forms to a manufacturer who mails back a portion of the price paid by the consumer". The main findings are the following: 1) a large number of consumers respond to the rebate offers and then fail to provide the necessary effort when it comes to collect their money. This behaviour is shown to be a manifestation of permanent deviation from rational decision-making and is among the most important factors contributing to the profitability of rebate programs. As manufacturers shorten the redemption period 2) less consumers decide to buy the product with the restrictive terms, but 3) more of them redeem the rebate. This "deadline effect" suggests that consumers' perception about their future self-control is sensitive to the timing of the effort required and accords well with the findings of psychological studies "that longer deadline imply higher optimism". We show that the three findings can hardly be explained by conventional theories of time preferences. Finding 1 can be rationalized by a simple model of quasi-hyperbolic discounting and naivete in future self-control. However this model cannot explain findings 2 and 3. We extend the simple model by incorporating the existence of emotional disutility from disappointing past selves in line with famous sunk-cost fallacy. We show the ability of this model to explain not only the three findings above but also several other regularities concerning consumer behaviour. The contribution of this paper is twofold. It joins a small but growing number of papers attempting to provide field evidence on time inconsistency. Moreover it provides a simple model of hyperbolic discounting that matches several empirical regularities.

Astrid Matthey (Humboldt-Universität zu Berlin and Technische Universität Berlin)
"Getting used to the Future: Reference Dependence and Anticipatory Utility"

People get used to their expectations just as they get used to their income or consumption level. This affects their utility and economic decision making. I formalize this idea in a model where people form reference states with respect to their expectations. This allows me to explain observed preferences regarding future outcomes that cannot be explained with existing models. The model yields novel predictions for the behaviour of people towards risks, and implications for the regulation of health and environmental risks as well as for the welfare effects of information provision. Data on new infections with HIV in Germany supports the relevance of the results.

Marco Casari (Purdue University)
"Pre-commitment and flexibility in a time decision experiment"

This study presents experimental data on pre-commitment and flexibility where monetary rewards are delivered with an actual delay. Preference for pre-commitment is defined as willingness to pay a cost to restrict the size of the choice set available in the future. Preference for flexibility is defined as willingness to pay a cost to enlarge the choice set available in the future. The existing empirical evidence about these phenomena is rather limited. On the other hand, models of intertemporal choice differ widely on these issues, with some predicting only demand for pre-commitment, others

only demand for flexibility, while others neither one. We find that (1) two-thirds of the subjects cannot be accounted for with the canonical exponential discounting model; and (2) there is demand for both pre-commitment and flexibility.

Anna Conte,*° Daniela Di Cagno° and John Hey**° (* Tor Vergata University and FAO of the UN, **University of York, °Luiss Guido Carli)
"Risk Aversion, Demographics and Unobserved Heterogeneity. Evidence from the Italian TV Show "Affari Tuoi""

*Affari Tuo*i is a TV show in Italy. It is a 5 step interactive game between a player and an auctioneer. The game starts with 20 players, one coming from each of the Italian regions. There are 20 boxes containing the following prizes (expressed in Euros):

0.01, 0.2, 0.5, 1, 5, 10, 50, 100, 250, 500,
5000, 10000, 15000, 20000, 25000, 50000, 75000, 100000, 250000, 500000.

The 20 boxes are randomly assigned to the 20 players. In each game one of the players is randomly selected and plays against the auctioneer, who knows what the content of the player's box is. The player first opens six of the boxes assigned to the other players, losing the possibility to win the prices contained therein. At this point, the auctioneer either offers the player the chance to change his box with one of the remaining boxes, or offers the player an amount of money (which the auctioneer decides). If the player accepts the money, the game ends. Otherwise, he or she goes on with the game. There are four further potential rounds, in each of which the player opens three more boxes and the same procedure is repeated. If the player gets to the final round without having accepted any offer of the auctioneer, the player wins the contents of the box that he or she has at that point. Players' choices between the money offers and the unknown prize in their box are binary choices between a lottery where the player can win one of the amounts left and a degenerate lottery with a prize that can be won with probability equal to one.

This TV show is an excellent example of a natural experiment with clearly defined rules. The primary aim of this paper is to use data collected from 293 shows to estimate the preference functional of the players, which we assume to be a function of demographic variables and unobserved heterogeneity. We start assuming that the preferences are Expected Utility preferences and we estimate the risk aversion parameter of the players. We can test whether these preferences are stable through the show, or whether they change as the show progresses. We can also discover how risk attitude depends upon demographics.

SESSION C2 – LEARNING AND INFORMATION

Andrea Morone (Max Planck Institute of Economics and Università di Bari)
"Iterative naïve best reply vs. elimination of dominated strategy in a p-beauty contest"

In the last decade an increasingly effort has been devoted to explore the p-beauty contest game. The game itself is well known and extremely simple: players are asked to choose a number from a closed interval. The target number is $G = p\frac{1}{n}\sum_{i=1}^{n} g_i$, where $0 < p < 1$ is a parameter, n is the number of players in the contest and $g_i \in [0,100]$ is subject i's guess. It is well known that for all $p < 1$ the unique equilibrium is 0. "Traditional economic theory postulates an 'economic man,' who, in the course of being 'economic' is also 'rational.' This man is assumed to have knowledge of the relevant aspect of his environment which, if not absolutely complete, is at least impressively clear

and voluminous. He is assumed also to have a well-organized and stable system of preferences, and a skill in computation that enables him to calculate, for the alternative course of action that are available to him, which of these will permit him to reach the highest attainable point on his preference scale" (Simon, 1995). If our 'economic man' enters in a p-beauty contest he will solve the game by *iterated elimination of dominated strategies*: i.e. $g = p100$ dominates all larger choices, and then p^2100 dominates all remaining larger numbers, etc. till only $p^D100=0$ remains. This solution requires rationality in the sense of infinite iterations and its common knowledge. The *iterated elimination of dominated strategies* suggests to the "economic man", after each iteration, what he has not to play. After an infinity number of iterations he will reach the Nash equilibrium. Nagel (1995) in her seminal paper suggested "that the 'reference point' or starting point for the reasoning process is 50 and not 100. The process is driven by iterative, naïve best replies rather than by an elimination of dominated strategies". Iterative, naïve best replies assume that, at each level, every player has the belief that she is exactly one level of reasoning deeper than all the rest. A Level-0 player chooses randomly in the given interval [0, 100], with the mean being 50. Therefore, a Level-1 player gives best replay to the belief that everybody else is Level-0 player and thus chooses $p50$. A Level 2 player chooses p^250, a Level-k player chooses p^k50, and so on. A player who takes infinite steps of reasoning, and believes that all players take infinite – 1 steps, choose 0, the Nash equilibrium. If we buy Nagel hypothesis we enter in the fascinating path of bounded rationality and heterogeneous subjects. Different subjects are characterised by different cognitive levels. Bosch-Domènech et al. (2002) analysed 'newspaper and lab beauty-contest experiments' and categorized subjects according to their depth of reasoning. They recognize that subjects are clustered at *zero-order belief*, *first-order beliefs*, *third-order beliefs* and *infinity-order beliefs*. Güth et al. (2002) analysed the 'beauty contest' from a different perspective. They compare (a1) interior and boundary equilibria, (b1) homogeneous and heterogeneous players. They find attractive results: (a2) "… interior equilibria trigger more equilibriumlike behavior than boundary equilibria"; (b2) "heterogeneity of players should trigger more thorough deliberations and, thus, more equilibrium-like decisions." They reach fascinating conclusions: (a3) "we find swifter convergence to the equilibrium when the equilibrium is interior"; (b3) "more complexity by introducing heterogeneous players, however, is detrimental for profit as well for convergence to the equilibrium". However conclusion (a3) is somehow weird, and needs some more investigation. Even if this situation is supported by Rubinstein et al. (1997) who states that subjects prefer to "choose interior instead of extreme, boundary strategies", and by McKelvey and Palfrey's (1995, 1996) quantal response equilibria, this conclusion apparently has not a clear intuition. Probably the best way to explain it is going back to Zenone's paradox and individual difficulty in understanding the infinity. This paper has the following targets: (1) Generalising the naïve best reply strategy to the wider class of games with interior equilibrium. (2) Analysing Güth et al.'s results concerning the properties of interior equilibria in a more general setting. (3) Comparing the iterative naïve best reply strategy with the elimination of dominated strategies for the generalised p-beauty contest. We will use several parameterizations of the p-beauty contest to discriminate between the two strategies. This more systematic study of naiveties will allow us to address our main question: (4) what speed up convergence to equilibrium in a beauty contest game: subjects naiveties or the presence of an interior equilibrium? (5) if we reach the equilibrium is it stable? We use different parameterisation of the p-beauty contest, in some of them the *iterated elimination of dominated strategies* and *the iterative naïve best reply* needs the same number of iteration to reach the Nash equilibrium, in other the first needs a finite number of iterations and the second an infinite number, and finally there are some other parameterizations in which using the *iterated elimination of dominated strategies* an infinite number of iterations are needed and using the *iterative naïve best reply* the Nash equilibrium is reached after few iterations.

Martin Kocher*°, Matthias Sutter**° and Florian Wakolbinger° (**CREED, University of Amsterdam, **University of Cologne, °University of Innsbruck)
"Naïve advice and observational learning in experimental beauty-contest games"

We examine the effects of naïve advice and observational learning on the quality of decision making in interactive tasks. Although many everyday decisions are influenced by receiving advice or by observing others, little is known so far whether these types of information pay off in interactive situations. We report the results of an experimental beauty-contest game where either one or all subjects receive advice or observe others. Both triggers faster convergence to the equilibrium. Yet, advice has a stronger impact because subjects receiving advice systematically outperform uninformed subjects. Observing others' past behaviour has only a transitory influence, though.

Giuseppe Attanasi* and Rosemarie Nagel** (*Bocconi University, **Universitat Pompeu Fabra)
"Actions, Beliefs and Feelings: an experimental study on Psychological Game Theory"

1. An experimental test for Psychological Games

Causal relations among beliefs and actions have been widely studied in economics and psychology. One regularity emerging from both disciplines involves a positive relationship between individuals actions and their (first-order) beliefs of others actions in strategic decision environments. Moreover, even though one traditional assumption in neoclassical economics has been material self-interest, in the last few decades economists have studied the role played by emotions in generating human behaviour (i.e. actions), hence suggesting general ways of incorporating emotions and feelings into the economic models; in particular, it has been widely accepted in the economic theory that feelings can be expressed in terms of belief-dependent motivations, for example in terms of one's expectations about other agents' actions (first-order beliefs) and in terms of one's guess about other agents' expectations about his own action (second-order beliefs) and so on. The main goal of this paper is to study in an experimental setting the relations between actions and beliefs, those between beliefs and feelings and those between actions and feelings, through the application of psychological game theory. Many experimental economists have studied these relations within one-shot interactions, allowing for ex-post explanations claiming for belief-dependent motivations for the "irregularities" in the experimental results. Our experimental study goes two steps beyond the existing literature:

a. it analyses the relationships between actions, beliefs and feelings in a dynamic setting. We test players' behaviour in a infinitely repeated game, in which we elicit beliefs at the beginning of each stage game; we then analyze the evolution of beliefs, their correlation with the played action profile and the way through which they incorporate players' feelings.

b. it allows to test directly games with beliefs-dependent payoffs, i.e. psychological games. We allow psychological payoffs to depend (only) on the beliefs of others, as Battigalli and Dufwenberg (2005) suggest. Their approach, crucial for our experimental setting, clearly separates two channels through which beliefs and information affect behaviour: the direct (psychological) impact of beliefs on preferences over terminal histories, and the (traditional) impact of updated beliefs about the opponents on the preferences over own strategies. In other words, our experimental setting is able to test the casual relations and the potential correlation between actions, beliefs and feelings in a repeated psychological game, i.e. a game in which players have belief-dependent motivations, which give rise to psychological payoffs. This could be also seen as an indirect test on the usefulness of psychological games setting while interpreting real life decisions in strategic environments. Charness and Dufwenberg (2004) provide evidence supporting a theory according to which people strive to live up to others' beliefs in order to avoid guilt. This allows them to provide a general theory of guilt aversion, by means of an application of Geanakoplos, Pearce and Stacchetti

(1989; henceforth GPS) psychological games tools. However, in their experimental setting, they let participants play a one-shot trust game and, once they check that (traditional) game theoretical predictions are not matched by their experimental results, they show how this allows for incorporating a guilt-aversion argument into players' payoffs, theoretically constructing a specific psychological game of trust. Nevertheless, we think that their experiment represents only an indirect proof of the relevance of psychological games in explaining belief-dependent motivations. In order to stress this relevance, we chose to test directly the impact of accounting for the presence of psychological payoffs already in the experimental setting. To do that, we propose experimentally a repeated game of trust in which the psychological payoffs of one of the two players (the trustee) are gleaned by means of a questionnaire and transmitted to the other player (the truster) before the game is played. We call this experimental procedure "complete information treatment", as opposed to the "incomplete information" one, in which psychological payoffs are not measured and transmitted before the game is played; in this second case, the impact of "belief-dependent" motivations can be inferred only ex-post as one of the possible explanations for the deviations of the experimental results from those predicted by traditional game theory (as Charness and Dufwenberg did).

2. Experimental Results and Theoretical Interpretation

Our experimental results show that eliciting and transmitting the psychological payoffs and letting the two players playing the complete information (repeated) game of trust leads them to behave in a visibly different manner (with respect to their behaviour in the corresponding incomplete information game setting). More precisely, the public information of the psychological payoffs in the (repeated) game of trust results in players. perception of feelings like guilt aversion and/or reciprocity which otherwise would be underestimated. That in turn ends in a more cooperative behaviour for both players. Moreover, our experimental results on the repeated psychological game demonstrate how feelings. sensitivity elicitation and transmission (needed to measure and communicate experimentally the psychological payoffs) enhance cooperation more than the traditional repeated-game reputation building explanation would suggest: reputation building arguments would ensure cooperation until a couple of periods from the end of the repeated game. Guilt and/or reciprocity concerns incorporated in the psychological payoffs frequently lead to trust and cooperation until the last stage of the repeated game. We provide a robust theoretical explanation for our experimental results, that we briefly summarize in what follows. From an economical point of view, the constituent game (of the repeated game) represents the following situation. Players A (the truster) and B (the trustee) are partners on a project that has thus far yielded total profits of 2€. Player A can now withdraw from the project. If player A dissolves the partnership, the contract dictates that the players split the profit fifty-fifty. But total profits would be higher (4€) if player A leaves her resources in the project. To do so, however, she must forgo her contractual rights and trust player B to share the profits after the project is completed. So, player A must decide whether to Dissolve or to Continue the partnership; when she chooses to Continue, player B can either Take or Share the higher profits. The game is simultaneous: player B must choose between Take and Share without knowing if A has trusted him. The constituent simultaneous game, in its reduced strategic form, is summarized in the following table:

	A receives	B receives
A chooses Dissolve	€1	€1
A chooses Continue, B chooses Share	€2	€2
A chooses Continue, B chooses Take	€0	€4

(Table 1. Payoff matrix for the constituent game)

In our experimental setting, the simultaneous game in Table 1 is played 4 times within the same pair. Traditional game theory admitting monetary preferences with self-interested players suggests

the unique subgame perfect equilibrium of the repeated game of trust is given by the repetition of the action profile (Dissolve; Take) in each of the four periods of playing. Our theoretical framework, which is an application of Battigalli and Dufwenberg (2005) theory to repeated psychological games (with complete and incomplete information) allows instead for several sequential (psychological) equilibria for the repeated game. Let's indicate B's guilt sensitivity with $\theta \varnothing 0$ and his sensitivity to reciprocity concerns with $\gamma \varnothing 0$. They both enter B's payoff function through its psychological part. In the setting with complete information, θ and γ are known to both player B and A: we call θ' and γ' the true values of B's guilt sensitivity and of B's reciprocity sensitivity, respectively. The values we elicit and transmit during the complete information treatment represent a good approximation of these two feelings sensitivities. Hence, in that treatment it is like they are public information among the two players. In the setting with incomplete information (the one we represent experimentally through the incomplete information treatment), both parameters are not known to any of the two players: we suppose each of them is drawn from a different uniform distribution. Thus, players do not know the true values of θ and γ, but have a common prior on each of the two. Let us first concentrate on the equilibrium predictions for the repeated psychological game with complete information. We distinguish two subcases according to the two main feelings B players could be sensitive in the proposed trust game:

* in case $\theta > 0$ and $\gamma = 0$ (B is sensitive to guilt aversion, but not to reciprocity concerns), for "high enough" values of θ the following sequential psychological equilibrium (in beliefs) exists: in each of the four periods of the repeated psychological game,

- A chooses Continue, believing with certainty that B is choosing Share and that B believes with certainty that she is choosing Continue, and so on;
- B chooses Share, believing with certainty that A is choosing Continue and that A believes with certainty that he is choosing Share, and so on. Let us call this equilibrium as the trust equilibrium in beliefs.

* in case $\gamma > 0$ and $\theta = 0$ (B is sensitive to reciprocity concerns, but not to guilt aversion), the same trust equilibrium in beliefs does not exist $\forall \gamma > 0$. These two theoretical predictions match exactly our experimental results, where different B types lead to different behaviour of the pairs they belong to. More specifically, among the 8/40 pairs cooperating from period 0 to 4, 7/8 Bs are motivated by guilt aversion (alone) and 1/8 is motivated by guilt aversion & reciprocity. On the contrary, among the 8/40 pairs in which there is a B motived by reciprocity (alone), 6/8 do not cooperate in t = 1 and 2/8 cooperate from t=1 to t=2 and then they do not cooperate any more.

Let us now compare the complete with the incomplete information case in terms of equilibrium predictions: intuitively, it is not difficult to conclude that, in case $\theta > 0$ and $\gamma = 0$, the higher θ' (the true value of guilt sensitivity in the complete information case), the higher the probability to find the trust equilibrium in beliefs in the complete information case. In particular, we calculate a threshold θ'' such that for each $\theta' \varnothing \theta''$, the trust equilibrium in beliefs is more likely to come out in the repeated psychological game with complete information than in the correspondent game with incomplete information. Also this last theoretical prediction matches our experimental results: in the complete information treatment, among all B players showing sensitivity to guilt aversion and no sensitivity to reciprocity (21/40), in 85% of cases θ' we infer (by means of the questionnaire each B fills) is higher than theoretical threshold θ''. For that reason, in the complete information treatment, where B's feeling sensitivity is public information among players, the frequency of (Trust, Share) play in each of the four periods of the repeated game is higher with respect to the incomplete information treatment. Moreover, in the complete information treatment, 58% of pairs cooperate in t = 1 (in each of these pairs there is a B player motivated by guilt aversion); there is also a significant percentage of pairs (20%) playing (Trust, Share) in all periods of the repeated game; in the incomplete information treatment, 18% of pairs cooperate in t = 1 (again, in each of these pairs there is a B player motivated by guilt aversion) and no pair play (Trust, Share) in all periods. The key point of this theoretical reasoning is in the interpretation of the incomplete

information treatment: the fact that feeling sensitivities are not elicited and transmitted before the game is played does not allow to conclude that players. payoff functions are only "material", i.e. do not contain a psychological part. Rather, in this treatment, players play a game in which the psychological payoffs are part of their payoff function, but are not common knowledge among them. According to this interpretation, our experimental results show that, in a repeated game of trust, making public information the results of the feeling sensitivities elicitation has a dramatic impact on behaviour, substantially enhancing trust and cooperation among players in every period, especially in those pairs in which B has transmitted his "guilt aversion" to his co-paired A.

Patrizia Sbriglia (Università di Napoli 2)
"Revealing the depth of reasoning in p-beauty contest games"

The aim of this study is to evaluate the impact of the information about levels of reasoning on the individual's choices. I report the results from an experiment on *p*-beauty contest games. The experiment consisted in 9 Sessions, with different information treatments between Sessions 1a, 1b and Sessions 2-8. In Sessions 1a and 1b (the baseline designs), the only pieces of information provided in each period were the target number and the average value (*T, Mt-1*). In Sessions 2-8, in each of the six stages of the game, the winner(s) explained what reasoning he/she applied in choosing the target number. He/she wrote a short message (30 words maximum) and then stopped playing. The winner's message, the winning number, the target and the average value were then displayed on all computer screens. The evidence from the experiment shows that non-winning players *imitate* the level of rationality of the winners, and there is a relevant proportion of the population who adopt strategies which are *best responses* to the imitators' behaviour rather than to the average level of rationality. Both the imitative strategies and the best responses to the imitative strategies produce a strong acceleration of the learning process.

SESSION D1 – COORDINATION AND COOPERATION

Todd R. Kaplan* and Bradley J. Ruffle** (University of Exeter, **Ben-Gurion University)
"Which way to cooperate"

We introduce a class of games that captures many economic and social cooperation dilemmas such as bidding rings in auctions, competition for market share, labor supply decisions, queuing in line and courtship. Participants in these interactions cooperate by limiting their frequency of entry, since entry imposes a negative externality. We conduct two-player, repeated-game experiments with private values to entry where cooperation admits the form of either taking turns or using a cutoff strategy and entering only for high private values. We find that in environments with disperse private values, paired subjects coordinate on the same cutoff strategies. In environments with similar private values, cooperative subjects alternate. Our results offer insight into whether a cooperative norm will arise and what form it will take: for mundane tasks or where individuals otherwise have similar payoffs, alternation is likely; for difficult tasks that differentiate individuals by skill or by preferences, cutoff cooperation will emerge.

Hans-Ulrich Stark,*° Dirk Helbing,* Martin Schönhof,* and Janusz A. Hoǧyst** (*Dresden University of Technology, °ETH Zurich, **Warsaw University of Technology)

"Alternating cooperation strategies in a Route Choice game: Theory, experiments, and evidence of learning scenarios"

In this paper, we present experimental investigations on a day-to-day route choice scenario. Here, the equilibrium outcome is, according to real traffic observations, fair (equal for all users) but induces an inefficient usage of network capacity. Optimal usage would be characterized by some users winning and some losing in comparison to the equilibrium state. Coherent alternating cooperation strategies can be a suitable solution but they require innovation and group coordination in addition to cooperativeness. In these points, our work differs considerably from other contributions observing the emergence of cooperation in social dilemmas. By classifying the two-person variant of our experiments among the symmetrical 2x2 games we show the situation of the Route Choice Game not to not addressed by the literature so far. Although the equilibrium outcome in this setup is "strongly stable", in our experiments we find eminent empirical evidence of alternating cooperation and, thereby, observed persistent utilization of the system optimum that is not profitable for all individuals. The transition to this optimal configuration can be well described by quantitative considerations that are presented in the paper. Furthermore, the straight success of a learning scenario indicates that the collective innovation of alternating strategies may be the most critical challenge to the individuals instead of just learning to be cooperative. Presumably, this also holds for other social dilemma situations.

Michele Bernasconi* and Matteo Galizzi** (*Università dell'Insubria, **Università di Brescia)

"Coordination in Networks Formation: Experimental Evidence on Learning and Salience"

We present experiments on repeated non-cooperative network formation games, based on Bala and Goyal (2000). We treat the one-way and the two-ways flow models, each for high and low link costs. The models show both multiple equilibria and coordination problems. We conduct experiments under various conditions which control for salient labeling and learning dynamics. Contrary to previous experiments, we find that coordination on non-empty Strict Nash equilibria is not an easy task for subjects to achieve, even in the mono-directional model where the Strict Nash equilibria is a wheel. We find that salience significantly helps coordination, but only when subjects are pre-instructed to think at the wheel network as a reasonable way to play the networking game. Evidence on learning behavior provides support for subjects choosing strategies consistent with various learning rules, which include as the main ones Reinforcement and Fictitious Play.

Antoine Terracol*° and Jonathan Vaksmann° (*Université Lille 3, °Université Paris 1 - Panthéon Sorbonne, CNRS)

"Dumbing down rational players: adaptive learning and teaching in an experimental game"

This paper uses experimental data to examine the existence of a teaching strategy among adaptive players. If players realize their own action modify their opponents' beliefs and actions, they might play certain actions in such a way; and forego immediate payoffs if the expected payoff gain from such a teaching strategy is high enough. Our results support the existence of a teaching strategy in three ways: They first show that players update their beliefs in order to take account of the reaction of their opponents to their own action. Second, within a logit model, they suggest that the future expected payoff that could arise from a teaching strategy has a significant impact on action probabilities. Finally, the attraction for the 'teaching action', i.e. the action associated with the

equilibrium the player deems preferable for her, is significantly related to the potential effectiveness of such a strategy.

SESSION D2 – NORMS AND POLICIES

Alessandro Marchesiani* and Pietro Senesi** (*University of Tor Vergata, **University of Naples "L'Orientale")

"Search, bargaining and prices in an enlarged monetary union"

This paper studies existence and characterization of monetary equilibria of an enlarged monetary union within a model of search with commodities divisibility. An unbiased degree of integration between each member-country pair ensures existence of accession equilibria, and is a necessary and sufficient condition for both monies to be perfect substitutes for each country's resident, and for no arbitrage to exist from using the same money in different countries. Furthermore, monies are perfect substitutes within each single participating country in every accession equilibrium. While prices in each country are increasing in the amount of money issued, they are decreasing in the degree of integration between any country-pair.

Stefan Kohler (European University Institute, Firenze)

"Inequality Aversion and Stochastic Decision-making after Land Reform: Experimental Evidence from Zimbabwean Villages"

Inequality considerations are a motive for making positive offers in the Ultimatum Game and rejecting small ones, but decision error could have the same effect. I find evidence for both of these considerations and a different relative importance, amongst Zimbabwean villagers, of whom some resettled after a 1980s government organized land reform. While resettled villagers have higher inequality aversion and lower decision error than those who live in traditional villages, there are no gender differences in preferences. The model estimated was first used by De Bruyn and Bolton (2004) on a large set of bargaining data, but the best .t of 64 percent overall coincidence of observed and predicted behavior is achieved for a different 'symmetric' specification of inequality aversion in the model. As the use of field data is a recent development in experimental economics, I reestimate the model applied to the Zimbabwean data on the laboratory Ultimatum Game data of Roth et al. (1991) and further field data from Henrich et al. (2005). Estimates are compared comprehensively.

Topi Miettinen (University College London and Univeristy of Helsinki)

"Promises and Conventions - A Theory of Pre-play Agreement"

Experiments suggest that communication increases the contribution to public goods (Ledyard, 1995). There is also evidence that, when contemplating a lie, people trade off their private benefit from the lie with the harm it inflicts on others (Gneezy, 2005). We develop a theory of conventions and bilateral preplay negotiations that assumes the latter and implies the former. In symmetric games, agreements crucially depend on whether actions are strategic complements or substitutes.

With strategic substitutes, commitment power tends to decrease in efficiency whereas the opposite may be true with strategic complements. Also this finding is supported by experimental evidence.

Berly Martawardaya (Università di Siena)

"Social Distance, Moral Property Right and Value of Gratitude in Dictator Game"

Gratitude is perceived as an intangible property right with value. Would the degree of association and familiarity affect the valuation? Will a person's background shape the valuation? Will the setting influence the valuation? The research designed a dictator game and distributed the survey to students from various nationalities across universities in Netherlands to answer those questions. The result from 161 respondents showed the answer is yes, yes and yes. Closer social relation correlated with higher valuation for gratitude while nationality, field of study and political orientation are good predictors for a person's valuation relative to sample average. The setting where a respondent is an impartial arbitrage generates higher valuation than that where respondents take financial loss for the valuation.

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The Organizing Committee
Patrizia Sbriglia (Università di Napoli 2)
Alessandro Innocenti (Università di Siena)
Luigi Luini (Università di Siena)

The Organizing Secretariat
Roberta Corsi
Serena Mazza
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Marcella Picierno

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