



# Exp–Wi–Fo Nachrichten

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## Editorial

Wieder liegt eine Ausgabe der Exp-Wi-Fo Nachrichten vor Ihnen. Wir weisen auf Konferenzen, Preise und Arbeitsgruppen hin und berichten über Vorzüge der ESA Mitgliedschaft. Außerdem finden Sie wieder zahlreiche Hinweise auf Arbeitspapiere. Einige davon wurden auf dem GEW Workshop in Wittenberg vorgetragen, andere wurden uns eigens zugeschickt.

Denken Sie auch in Zukunft daran, daß der Newsletter von Ihren Beiträgen lebt. Wir veröffentlichen gerne Ihre Hinweise auf Tagungen und Workshops etc. Wir weisen auch gerne auf Ihr Arbeitspapier hin.<sup>1</sup> Redaktionsschluß der nächsten Ausgabe ist voraussichtlich kurz nach dem GEW Workshop im Jahr 2000.

Diese und alte Ausgaben des Newsletters sind auch im Internet unter <http://www.sfb504.uni-mannheim.de/gew/> verfügbar.

Ich wünsche Ihnen viel Spaß bei der Lektüre,

Ihr Oliver Kirchkamp  
(Uni Mannheim, SFB 504, 68131 Mannheim)

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<sup>1</sup> Senden Sie bitte sowohl einen Abstrakt im ASCII-Format als auch das Arbeitspapiere als email-Attachment zu. Falls es eine elektronische Version des Papiers gibt, schicken Sie uns bitte nur den Abstract im ASCII-Format zu und teilen Sie uns die URL des Papiers mit. Unsere email-Adresse ist [gew@sfb504.uni-mannheim.de](mailto:gew@sfb504.uni-mannheim.de)

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**1 ESA**

**1.1 European Regional ESA Meeting, 7.–8. Oktober 1999 in Grenoble**

**Time and Place**

The 1999 European Regional Meeting of the Economic Science Association (ESA) will take place in Grenoble, France, October 7th-8th, 1999, at the campus of Grenoble University. This will be the first ESA Regional Meeting in Europe.

The goal of the Society is to further Economics as an observational science through the use of experimental and field methods of observation.

The organizers of the Grenoble conference are:

James C. Cox (University of Arizona)  
jcox@bpa.arizona.edu

Bernard Ruffieux (University of Grenoble)  
ruffieux@inpg.fr

Martin Weber (University of Mannheim)  
weber@bank.bwl.uni-mannheim.de

The conference will start Thursday 7. 10. at 9:00 (AM) at the University of Grenoble and will end Friday 8. 10. at around 17:00 (PM). There will be an informal get together on Wednesday 6. 10. from 18:00 to 20:00.

**Registration and hotel reservation**

Registration and hotel reservation is possible through the website of the conference (<http://www.upmf-grenoble.fr/esa-europe99/>). If possible, please register before September 1st. There will be an additional late fee after this date.

**Preliminary program**

A preliminary program will be distributed at the beginning of September 1999 and will also be on the website.

## 1.2 Beitritt der GEW Mitglieder zur ESA

Die Geschäftsstelle der GEW teilt uns mit, daß noch bis Ende 1999 vergünstigte Konditionen für den Beitritt von GEW-Mitgliedern zur Economic Science Association (ESA) bestehen. Dies sind insbesondere:

- Beitragsfreie ESA-Mitgliedschaft bis 31.12.1999.
- Ab 1.1.2000 Standardbeitrag, z.Z. US\$ 46 pro Jahr (US\$ 30 für Studenten), dies beinhaltet den Bezug des Journals *Experimental Economics*.
- Erhalt der ersten beiden Jahrgänge des Journals *Experimental Economics* Jahrgang 1998 (3 Ausgaben). Diese sind schon verteilt bzw. liegen zur Abholung bereit. Jahrgang 1999 (4 Ausgaben) wird nachgeliefert.

Ein weiterer Vorteil ist die Tatsache, daß auf der ESA Tagung in Grenoble (7.-8.10.99) der verbilligte Tagungsbeitrag für Mitglieder fällig ist. GEW-Mitglieder, die bereits ESA-Mitglied sind (oder waren), jedoch den Beitrag für 1999 noch nicht entrichtet haben, können ebenfalls von dieser Vereinbarung profitieren (zumindest gibt es bis jetzt keine gegenteiligen Informationen von der ESA).

Bis heute haben sich 29 GEW-Mitglieder für den Beitritt zur ESA entschieden. Wenn Sie ebenfalls der ESA beitreten möchten, so genügt eine kurze Mitteilung an die Geschäftsstelle (Mail oder Fax). Sollten Sie Ihren Beitritt bereits erklärt haben, jedoch auf der letzten GEW Tagung die ersten drei Ausgaben von *Experimental Economics* nicht erhalten haben, dann bekommen Sie diese auf der nächsten GEW Tagung oder auf Wunsch per Post.

## 2 Preise

### 2.1 Heinz Sauermaun-Preis zur Experimentellen Wirtschaftsforschung — 1997 bis 1999

Die Gesellschaft für Experimentelle Wirtschaftsforschung schreibt hiermit den „Heinz Sauermaun-Preis zur Experimentellen Wirtschaftsforschung“ für die Jahre 1997 bis 1999 aus. Der Preis wird in zwei Kategorien vergeben und ist mit DM 2.500,- (Dissertationen und sonstige Forschungsarbeiten) bzw. DM 1.000,- (Diplomarbeiten) dotiert. Bewerben kann sich jeder bis zum Höchstalter von 35 Jahren, der in den Jahren 1997 bis 1999 (inkl.) an einer deutschsprachigen Hochschule eine herausragende wissenschaftliche Arbeit auf dem Gebiet der experimentellen Wirtschaftsforschung abgeschlossen hat. Über die Preisvergabe entscheidet der Vorstand der Gesellschaft. Der Rechtsweg ist ausgeschlossen. Die Arbeiten sind von einem verantwortlichen Hochschullehrer mit einem Gutachten bis zum 31. 1. 2000 einzureichen bei der Gesellschaft für Experimentelle Wirtschaftsforschung; p. A. Professor Dr. Werner Güth; Institut für Wirtschaftstheorie; Humboldt-Universität zu Berlin; Spandauer Str. 1; 10178 Berlin

Für die Jahre 1995/96 wurde der Preis verliehen an:

- Herrn Dr. Fang Fang Tang, Bonn: „Anticipatory Learning in Two-Person Games: An Experimental Study“ (Dissertation)
- Herrn Dipl. Volkswirt Axel Ockenfels, Bonn: „Ein Experiment zum Solidaritätsverhalten“ (Diplomarbeit)

### 2.2 Economic Science Association's prize for outstanding Ph.D. thesis in experimental economics

Für den Zeitraum 2000/2001 gibt es voraussichtlich wieder einen Preis der ESA. Informationen werden demnächst bei Susan Laury erhältlich sein <SLAURY@darla.badm.sc.edu>.

Für den Zeitraum 1998/1999 ging der Preis an Dr. Axel Ockenfels für seine Dissertation „Fairneß, Reziprozität und Eigennutz — Ökonomische Theorie und experimentelle Evidenz“.

### 3 Abstracts

#### *How Paulus Becomes Saulus. An Experimental Study of Equal Punishment Games*

MARLIES AHLERT<sup>1</sup>, ARWED CRÜGER<sup>2</sup>, WERNER GÜTH<sup>3</sup>

Abstract: In equal punishment games first the proposer suggests how to split the pie, i.e. a positive monetary reward. Unlike in the ultimatum game, the responder can decide among many (for proposer and responder) equal penalty payments. To exclude negative payoffs, punishment was bounded from above depending on the proposal and the (for proposer and responder) same show up-fee, our only treatment variable. Although inequality aversion (Bolton and Ockenfels, 1999, and Fehr and Schmidt, 1999) predicts zero-punishments, we observe positive punishments which, however, became smaller in the repetition. Initial fairness, represented by 1/3 equal split offers, is often substituted in the repetition by extreme greed. Whereas greed is sticky, fairness is more characteristic for initial inclinations and not a stable behavioral pattern.

#### *Efficient Contracting and Fair Play in a Simple Principal-Agent Experiment*

VITAL ANDERHUB<sup>4</sup>, SIMON GÄCHTER<sup>5</sup>, MANFRED KÖNIGSTEIN<sup>6</sup>

Abstract: Modern ‘principal-agent theory’ has made a lot of progress in proposing theoretical solutions to agency problems. This paper contributes to a better understanding of behavior in agency situations. In particular, we provide experimental evidence on offered contracts and effort choices in a simple agency game. In line with principal-agent theory we find that in our experiments many contracts proposed by principals are ‘incentive compatible’ and most agents behave optimally given the terms of the contract. However, in contrast with economic predictions, we find that agents (i) reject ‘unfair contracts’ and that (ii) given acceptance, their effort choices are to some extent driven by reciprocity. It

seems that contract design has to regard an equity constraint that has so far been neglected by contract theory. In fact, most contract offers observed in the experiment aim at fair surplus sharing.

#### *An experimental study of tax evasion with varying tax rates and different income*

VITAL ANDERHUB<sup>7</sup>, SEBASTIAN GIESE, WERNER GÜTH<sup>8</sup>, ANTJE HOFFMANN, THOMAS OTTO

Abstract: In our tax evasion experiment each participant earns his income by solving an intertemporal allocation task. The resulting income has to be declared in a tax return which is randomly verified. If tax evasion is detected, the subject is punished by a fixed penalty. The experiment consists of four phases, the final two involving an increased tax rate. Taxes are donated to charity organisations, chosen by subjects. Our results indicate that higher income levels encourage tax evasion, but that an increased tax rate does not.

#### *On the Interaction of Risk and Time Preferences — An Experimental Study*

VITAL ANDERHUB<sup>9</sup>, URI GNEEZY<sup>10</sup>, WERNER GÜTH<sup>11</sup>, DORON SONSINOZ<sup>12</sup>

Abstract: Experimental studies of risk and time-preference typically focus on one of the two phenomena. The goal of this paper is to investigate the (possible) correlation between subjects’ attitude to risk and their time-preference. For this sake we ask 61 subjects to price a simple lottery in 3 different scenarios. At the first, the lottery premium is paid „now“. At the second, it is paid „later“. At the third, it is paid „even later“. By comparing the certainty equivalents offered by the subjects for the three lotteries, we test how time and risk preferences are interrelated. Since the time interval between „now“ and „later“ is the same as between „later“

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and „even later“, we also test the hypothesis of hyperbolic discounting. The main result is a statistically significant negative correlation between subjects' degrees of risk aversion and their (implicit) discount factors.

*On Intertemporal Allocation Behavior — A Selective Survey of Saving Experiments*

VITAL ANDERHUB<sup>1</sup>, WERNER GÜTH<sup>2</sup>

Abstract: Intertemporal allocation behavior in isolation is studied when one person has to allocate scarce funds over several successive periods. After illustrating the normative principle of backward induction or dynamic programming for deterministic and stochastic decision tasks we review the few experimental studies (by economists) of such behavior. For the experimental situation of Anderhub et al. (1996) variations of the basic model allow to systematically explore how behavior depends on (stochastic) complexity. We conclude by outlining perspectives for a behavioral theory of intertemporal allocation.

*Long-term Work Contracts versus Sequential Spot Markets: Experimental Evidence on Firm-specific Investment*

VITAL ANDERHUB<sup>3</sup>, MANFRED KÖNIGSTEIN<sup>4</sup>, DOROTHEA KÜBLER

Abstract: Dismissal rules, i.e. legally enforced long-term contracts, have been defended against criticism for, among other things, providing efficient incentives to invest in relationship-specific skills. However, in many situations efficient investment can also be attained by spot contracts. We replicate such a situation with our experimental design based on a simple two period game, involving the choice of the contract length by the principal and an investment choice by the agent. In contrast to the game theoretic predictions, we find that investment of the worker and length of contract are strictly positively correlated. We interpret our finding as an indication for a perceived market risk due to other players' actions although the model is fully deterministic. This could imply a behaviourally relevant difference between contract and market administered incentives.

*Lohnverhandlungen und deren Verflechtung mit der Entwicklung der Volkswirtschaft*

SIEGFRIED BERNINGHAUS<sup>5</sup>, EHRHART, CLAUDIA KESER<sup>6</sup>, KIRSTEIN

Abstract: Angeregt durch das KRESKO-Projekt (vgl. Tietz 1973) wurde die Idee weiterverfolgt, die Auswirkungen der individuellen Entscheidungen der am Lohnverhandlungsprozeß Beteiligten auf die gesamte Volkswirtschaft zu simulieren. Im Gegensatz zu dem überaus komplexen KRESKO-Experiment wird die Entwicklung einer Volkswirtschaft durch eine einfache Übergangsfunktion von einer Periode zur nächsten modelliert. Das in der Volkswirtschaft insgesamt erwirtschaftete Ergebnis wird durch einen sogenannten „Kuchen“ repräsentiert. In Abhängigkeit von der relativen Aufteilung eines aktuellen Kuchens unter den Verhandlungspartnern wird dieser Kuchen mittels der oben erwähnten Übergangsfunktion in die nächste Periode fortgeschrieben, wodurch ein neuer, aufzuteilender Kuchen entsteht. Die dadurch simulierte Volkswirtschaft kann von einer Periode zur nächsten sowohl schrumpfen, als auch unverändert bleiben oder sogar wachsen. Diese Entwicklung hängt nur von den Lohnverhandlungen ab, d.h. von der Aufteilung des Kuchens, und nicht — wie im KRESKO-Experiment — von anderen Verhandlungen über bspw. Wirtschaftspolitik oder Geldpolitik.

Mit den beiden Tarifpartnern stehen sich in Deutschland zwei unterschiedliche wirtschaftspolitische „Glaubensrichtungen“, die nachfrageorientierte und die angebotsorientierte Politik gegenüber. Beide Parteien erheben dabei Anspruch auf den größeren Anteil des Kuchens. Daher wurde aus aktuellem Anlaß in unserem Modell eine asymmetrische Aufteilung des Kuchens unter den beiden Verhandlungspartnern für die Entwicklung der Volkswirtschaft als optimal angenommen.

Konkret wurden in einem über 2 mal 10 Perioden gespielten Rubinstein Bargaining Game (vgl. Rubinstein 1982) Verhandlungen zwischen 2 Personen untersucht, denen zufällig die Rollen „Spieler A“ und „Spieler B“ zugewiesen wurden. Die Versuchspersonen behielten ihre Rollen jeweils bei, wechselten für die zweiten 10 Perioden jedoch ihre Verhandlungspartner. Der Verhandlungsablauf innerhalb einer Periode verlief sequentiell (Rubinstein bargaining), wobei in je-

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der Periode derselbe Spieler den ersten Aufteilungsvorschlag unterbreitete. Nach jeder Ablehnung wechselte das Vorschlagsrecht und der Kuchen der aktuellen Periode schrumpfte um 5%. Nach einer Einigung begann eine neue Periode mit einem neuen, aus der Vorperiode fortgeschriebenen, Kuchen.

Den Spielern war das Bildungsgesetz des Kuchens bekannt und Spieler A begann in jeder Periode vorzuschlagen. Die Übergangsfunktion für die Fortschreibung des Kuchens von einer Periode zur nächsten nahm ihr Maximum an, wenn Spieler A einen Anteil von 30% und Spieler B 70% vom aktuellen Kuchen erhielt. In jeder Periode gingen in die Nutzenfunktion jedes Spielers somit die Größe seines Kuchenstückes in der aktuellen Periode ein, sowie sein Anteil an allen zukünftigen Kuchen, dessen Größe er mit der aktuellen Aufteilung beeinflussen konnte. Die durch backward induction gewonnene theoretische Lösung sagt das folgende teilspielperfekte Gleichgewichtsverhalten voraus: für beide Spieler ist es bis zur 7. Periode optimal, sich in jeder Periode in der 1. Verhandlungsrunde auf eine Aufteilung von 30% für Spieler A sowie 70% für Spieler B zu einigen. Bis zu diesem Zeitpunkt ist für Spieler A damit ein kleiner Anteil an einem großen Kuchen besser als ein hoher Anteil an einem kleinen Kuchen. Ab der 8. Periode jedoch versucht jeder, so viel wie möglich vom aktuellen Kuchen zu erhalten. Tendenziell konnte dieses theoretisch vorhergesagte Verhalten im Durchschnitt aller Daten auch im Experiment beobachtet werden.

#### *Decentralized or collective bargaining in a strategy experiment*

SIEGFRIED BERNINGHAUS<sup>1</sup>, WERNER GÜTH<sup>2</sup>,  
CLAUDIA KESER<sup>3</sup>

Abstract: We present an experiment where two players bargain with a third player. They can bargain either separately or form a joint venture to bargain collectively. Our theoretical benchmark solution predicts decentralised bargaining as only one player has an interest in forming a joint venture. We observe, however, a significant amount of collective bargaining. Collective bargaining, when compared with decentralised bargaining, has no significant effect on the payoffs of the players

in the joint venture but reduces the payoff of the third player.

#### *The Effects of Costless Pre-play Communication: Experimental Evidence from a Game with Pareto-ranked Equilibria*

ANDREAS BLUME, ANDREAS ORTMANN<sup>4</sup>

Abstract: When costless messages are added to a game with Pareto-ranked equilibria, efficiency of actual play is significantly increased. This result notwithstanding, nearly half of our experimental participants initially fail to use costless pre-play communication to coordinate on the Pareto-dominant equilibrium. Messages, however, facilitate quick convergence to the Pareto-dominant equilibrium. Our experimental evidence on efficient play after convergence is roughly consistent with theories proposed for cheap-talk games. The evidence on how efficient play is achieved according to these theories is mixed, somewhat favouring theories that permit a role for message profiles which are not themselves equilibria and which change over time.

#### *Prior Dispositions and Actual Behavior in Dictator and Ultimatum Games*

HERMANN BRANDSTÄTTER<sup>5</sup>, WERNER GÜTH<sup>6</sup>,  
JUDITH HIMMELBAUER<sup>7</sup>, WILLY KRIZ<sup>8</sup>

Abstract: Individuals differ in behaviour since neither their ethical constraints, their attitudes towards risk, nor their analytical talents are the same. In an experimental pre-phase we tried to elicit such differences by confronting participants with suitable one-person-decision problems. In the main phase they played successively the dictator game, the ultimatum game, and finally the combination of the former two, originally studied by Güth and van Damme (1998). A final personality questionnaire elicits self-evaluations concerning ethical constraints, attitude towards risk, and analytic capability in addition to more general personality traits. We mainly investigate the consistency of prior dispositions (inferred from individual decision behaviour in the pre-phase and from the self-reports) and actual behaviour (in the main phase). What is reported in this paper is a

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part of a more complex set of results. The focus here is on the effects of three individual difference variables (benevolence, intelligence, and reciprocity orientation) on behaviour in the role of an ‘active’ player (the giver) and in the role of a ‘passive’ player (the receiver). Benevolence (as personality trait of the active player) facilitates equity considerations in his/her offers to the powerless, but not to the powerful receiver. Reciprocity orientation makes male (not female) participants in the role of powerful receivers (powerful, because, if they decline the offer, none of the players gets anything) to set higher minimal demands (higher acceptance thresholds). Intelligence had no significant effects on bargaining behaviour.

*Why do you hate me? On the survival of spite*

MARTIN DUFWENBERG<sup>1</sup>, WERNER GÜTH<sup>2</sup>

Abstract: Spite is understood here as harming others without good reasons. It should typically survive in small populations or on markets with strategic substitutes. We consider situations where universal selfishness results in an efficient outcome. Spite will endanger efficiency, but due to its inferior survival value it will finally disappear and efficiency will be regained.

*The False Consensus Effect Disappears if Representative Information and Monetary Incentives Are Given*

DIRK ENGELMANN<sup>3</sup>, MARTIN STROBEL<sup>4</sup>

Abstract: In this paper we present an experiment on the false consensus effect. Unlike previous experiments, we provide monetary incentives for revealing the actual estimation of others’ behaviour. In each session and round sixteen subjects make a choice between two options simultaneously. Then they estimate the choices of a randomly selected subgroup. For half of the rounds we provide information about other subjects’ choices. There we find no false consensus effect. At an aggregate level, subjects significantly underweight rather than overweight their choices. The results are difficult to interpret for the rounds where we do not provide information.

*Budget processes: theory and experimental evidence*

K. M. EHRHART, R. GARDNER, J. VON HAGEN, CLAUDIA KESER<sup>5</sup>

Abstract: This paper studies budget processes, both theoretically and experimentally. We give a sufficient condition for top-down and bottom-up budget processes to have the same voting equilibrium. Furthermore, at a voting equilibrium, it is not always true, as often presumed, that a top-down budget process leads to a smaller overall budget than does a bottom-up budget process. To test the implications for budget processes of voting equilibrium theory, we conduct a series of 128 voting experiments using subjects in a behaviour laboratory. The experimental evidence from these experiments is well organised by voting equilibrium theory, both at the aggregate level and at the individual subject level. In particular, subjects display considerable evidence of rationality in their proposals and votes. More complete information and fewer spending categories lead to greater predictive success of voting equilibrium theory, and reduce the time needed to reach a budget decision.

*Mobility and cooperation: on the run<sup>6</sup>*

K. M. EHRHART, CLAUDIA KESER<sup>7</sup>

Abstract: In public goods experiments where subjects may change groups, we observe a continual flight of the more cooperative subjects away from the less cooperative ones. The less cooperative subjects attempt to enter cooperative groups in order to free-ride on their contributions.

*Preemption in Capacity and Price Determination. A Study of Endogenous Timing of Decisions for Homogeneous Markets*

SANDRA GÜTH<sup>8</sup>, WERNER GÜTH<sup>9</sup>

Abstract: Endogenous timing can help to derive the time structure of decision making instead of assuming it as exogenously given. In our study we consider a homogeneous market where, like in the model of Kreps and Scheinkman (1983), sellers determine “sales capacities” before prices. Sellers must serve customers, but at higher costs when demand exceeds “capacity”. Our model

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allows for preemption in “capacity” as well as in price determination. Since preemption means to decide before the random choice of cost parameters reflecting the stochastic nature of (excess) “capacity” costs, preemptive commitments are no obviously better timing dispositions.

### *Game-Playing Experiments*

WERNER GÜTH<sup>1</sup>

Abstract: Our survey of experimental studies concentrates on situations which are related to familiar topics in operations research and game theory like

- intertemporal allocation when the future is uncertain,
- repeated games with incomplete information involving reputation formation,
- (asymmetric) private value-auctions,
- fair division games where unlike to auctions the price is not collected by the seller, but equally shared by the bidders.

Although behaviour often reacts qualitatively as predicted by optimality, people clearly do not optimise. How to model boundedly rational decision making, guided by stylised experimental results, seems to be the major challenge.

### *Consistency and Equilibrium Selection*

WERNER GÜTH<sup>2</sup>

Abstract: Consistency together with other rather undebatable axioms provides an illuminating and novel characterisation of the equilibrium concept (Peleg and Tijs, 1996), but forbids to refine the equilibrium notion or even to select uniquely an equilibrium solution (Norde et al., 1996). We suggest to weaken the consistency requirement by generalising the notion of reduced games in such a way that “players who left the game” leave their incentives for selecting one equilibrium versus the other. By the concept of unilateral deviation stability (Güth, 1992) it is illustrated how this allows to select among equilibria.

### *Bidding Behavior in Asymmetric Auctions — An Experimental Study*

WERNER GÜTH<sup>3</sup>, RADOSVETA IVANOVA<sup>4</sup>, ELMAR WOLFSTETTER<sup>5</sup>

Abstract: Based on the solutions, derived by Plum (1992), we perform an auction experiment which a priori is asymmetric. The range for bidder 1’s private value is always smaller than that the one for bidder 2. To allow for the best learning opportunities participants encountered always the same ranges for both values. During the 1st phase of an experimental session participants repeated several rounds of first price- and then of second price auctions with randomly changing partners. After such familiarisation with first and second price asymmetric auctions the 2nd (3rd) phase also allows participants to decide before (after) learning their private values whether or not they want to dictate the pricing rule. More specifically, both bidders can buy the random dictatorship for the pricing rule by stating limit prices within an incentive compatible random price mechanism (Becker, de Groot, Marshak, 1963). We test whether bidding behaviour and/or limit prices display similar qualitative effects as the game theoretic solution behaviour.

### *Learning to Bid. An Experimental Study of Bid Function Adjustments in Auctions and Fair Division Games*

WERNER GÜTH<sup>6</sup>, RADOSVETA IVANOVA<sup>7</sup>, MANFRED KÖNIGSTEIN<sup>8</sup>, MARTIN STROBEL<sup>9</sup>

Abstract: We examine learning behaviour in auctions and fair division games with independent private values under two different price rules, first and second price. Participants face these four games repeatedly and submit complete bid functions rather than single bids. This allows us to examine whether learning is influenced by the structural differences between games. We find that within the time horizon which we investigate, learning does not drive toward risk neutral equilibrium bidding and characterise some features of observed learning: Bid

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functions are adjusted globally rather than locally, decision time matches the sequencing structure of game types, game rules do matter, and directional learning theory offers a partial explanation for bid adjustments. The evidence supports a cognitive approach to learning.

*Auctions and Fair Division Games Under Different Price Rules: Individual Bid Functions, Prices and Efficiency Rates*

WERNER GÜTH<sup>1</sup>, RADOSVETA IVANOVA<sup>2</sup>, MANFRED KÖNIGSTEIN<sup>3</sup>, MARTIN STROBEL<sup>4</sup>

Abstract: In auctions an outside seller offers a commodity for sale whereas in fair division games the object is owned by the group of bidders. More specifically, in an auction the sales price is collected by the seller whereas it is equally distributed among all bidders in fair division. In our experiment there are always three bidders with independent and identically distributed (iid) private values. They are randomly matched with changing partners to play a given game type three times before switching to another of the four possible game types (first versus second price — auctions versus fair division). The cycle of 12 ( $= 3 \times 4$ ) successive games is twice repeated so that a participant takes part in 36 successive bidding contests. Due to the strategy method (one bids before learning one's private value) we can investigate the slope and curvature of individual bid functions, the evidence for risk aversion, the comparative statics with respect to the game type, the price expectations, and the efficiency rates.

*Please, marry me! An experimental study of risking a joint venture*

WERNER GÜTH<sup>5</sup>, RADOSVETA IVANOVA<sup>6</sup>, SIGVE TJOTTA<sup>7</sup>

Abstract: Empirical studies in family economics usually rely on questionnaires, statistical or panel data. Here we try to study experimentally some crucial aspects of

engaging in a marriage. First the female partner can end the relationship or suggest one of the two forms of joint venture. Whereas a full engagement relies on more specialisation, but makes her more exploitable by the male partner, a low engagement is less productive, but also fairer. More specifically, the random profit of a joint venture is allocated by ultimatum bargaining in case of a full engagement whereas demands are determined simultaneously in case of a low engagement. Partners interact anonymously. In the repetition the two partners in a matching group of four participants are exchanged. Our treatment variables are her and his outside option value representing gender specific investments in human capital.

*On the effects of being more or less generous than others — An experimental study of direct and indirect reciprocity when social comparisons are possible*

WERNER GÜTH<sup>8</sup>, MANFRED KÖNIGSTEIN<sup>9</sup>, KLAUS NEHRING<sup>10</sup>

Abstract: Direct reciprocity means rewarding those from whom one has received a favour and indirect reciprocity that favours trigger rewards, even when those, we reward, differ from those who have favoured us. Experimentally direct reciprocity is captured by the trust game (Berg et al.), and indirect reciprocity by its adaptation (Dufwenberg et al.). In both settings first a truster can donate to a trustee who can then reward his, respectively another truster. When the other truster's donation is (not) known, social comparisons are (im)possible. We expect more cooperation when social comparisons are possible.

*Preempt or Wait! — An Experimental Study of Endogenous Timing in Bargaining*

WERNER GÜTH<sup>11</sup>, NADÉGE MARCHAND<sup>12</sup>, JEAN-LOUIS RULLIERE<sup>13</sup>, ROMAIN ZEILIGER<sup>14</sup>

Abstract: If different timing dispositions yield different

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results, one will try to avoid unfavourable timing dispositions. Thus endogenous timing allows to predict the decision process as well as its results. In our experimental study the two bargaining parties can commit to a demand either before the size of the pie is randomly chosen (preemption) or after this chance move (wait). Participants first choose when to decide. Then, knowing the timing disposition of both parties, demands are chosen correspondingly, i.e. simultaneously or sequentially. Our only treatment variable is the exponent of the exponential distributions governing the random choice of the pie. Participants play repeatedly each of the three treatments with randomly changing partners in groups of eight participants.

*Will Banks Promote Trade? Equilibrium Selection for the Trust Game with Banks*

WERNER GÜTH<sup>1</sup>, PETER OCKENFELS<sup>2</sup>

Abstract: The Trust Game describes a situation where mutually beneficial trade is endangered by opportunistic exploitation. In the Trust Game with Banks this dilemma can be avoided by banks guaranteeing that sellers will be paid. This outcome is, however, not the only possible solution. Bank interference as an equilibrium outcome can coexist with another equilibrium according to which banks are not used at all. By applying the theory of equilibrium selection it is analysed which of the two competing outcomes should be expected, i.e. whether or not banks can indeed promote trade.

*Experimentelle Verhaltensforschung — Programm, Methodik und Resultat*

WERNER GÜTH<sup>3</sup>, REINHARD TIETZ<sup>4</sup>

Abstract: Verhaltenswissenschaft steht für Theorien, die den kognitiven Beschränkungen ökonomischer Agenten Rechnung tragen. Um zwischen konkurrierenden Hypothesen zu differenzieren, sind Felddaten häufig nicht verfügbar oder ungeeignet. Man versucht daher in zunehmendem Maße durch Experimente, geeignete Datensätze zu gewinnen. Unter experimenteller Verhaltensforschung verstehen wir die in letzter Zeit stürmische Entwicklung von verhaltenswissenschaftli-

chen Theorien, die durch experimentell erhobene Daten motiviert bzw. validiert sind. Unsere knappe Darstellung versucht, die Programmatik, die wesentlichen Methoden sowie einige Resultate zu skizzieren.

*To commit or not to commit: Endogenous timing in experimental duopoly markets*

STEFFEN HUCK<sup>5</sup>, WIELAND MÜLLER, HANS-THEO NORMANN

Abstract: In this paper we experimentally investigate the action commitment game of Hamilton and Slutsky (1990). In this modification of the standard duopoly model firms can choose their quantities in one of two periods before the market clears. If a firm commits to a quantity in period 1 it does not know whether the other firm also commits early. By waiting till period 2, a firm can observe the other firm's period 1 quantity (or the decision to wait). It is assumed that production costs do not depend on the production period. Hamilton and Slutsky predict for this kind of game the endogenous emergence of Stackelberg leadership. Our data shows, however, that the theory fails in a laboratory environment. While Stackelberg equilibria are extremely rare we rather observe endogenous Cournot outcomes and sometimes collusive play. This is partly driven by the fact that endogenous Stackelberg followers learn to behave in a reciprocal fashion over time, i.e., they learn to reward cooperation and to punish exploitation.

*Union bargaining strength as a public good: experimental evidence<sup>6</sup>*

CLAUDIA KESER<sup>7</sup>, JEAN-LOUIS RULLIÉRE<sup>8</sup>, M. C. VILLEVAL

Abstract: When collective agreements apply to all employees, whether unionised or not, what is the rationale behind joining a union? The paper presents an experiment on a two-stage game. In the first stage, the decision to join a union is modelled as a voluntary contribution to a public good. In the second stage, the unionised employees bargain with the employer over wages. The experimental evidence reveals that: i) the union density is higher than predicted by theory but declining over

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time, ii) the size of the union increases the employees' bargaining power but not as much as predicted.

*Wie die 'unsichtbare Hand' funktioniert. Gewinnmaximierung als Triebfeder der Effizienz. Ein 'classroom-experiment'*<sup>1</sup>

ROLAND KIRSTEIN, DIETER SCHMIDTCHEN

Abstract: Die empirische Prüfung theoretischer Forschungsergebnisse wirft in der Ökonomie — wie bei jeder Sozialwissenschaft — Probleme auf. Anders als in den Naturwissenschaften können kaum volkswirtschaftliche Labors errichtet werden. Seit einigen Jahren nutzen Ökonomen die Erfahrungen der Psychologie mit stilisierten Experimenten, um zumindest ihre grundlegenden Verhaltenshypothesen testen zu können. Der Beitrag stellt ein einfaches Classroom-Experiment dar, das nicht nur eine zentrale Aussage der Mikroökonomie überprüft, sondern auch hohen didaktischen Wert hat: Die Studenten erhalten Einblick in empirische Forschung und erleben hautnah das Funktionieren des Marktes.

*WWW Experiments for Economists, a Technical Introduction*<sup>2</sup>

OLIVER KIRCHKAMP<sup>3</sup>

Abstract: In this document we sketch some techniques that are useful when developing www moderated experiments.

We describe a modular and, hence, very flexible approach. On all levels (clients, server, programming language, database, etc.) we compare alternatives that can be integrated. We argue that a very wide range of experiments can be covered. There is no restriction to particular hardware, clients, operating systems, programming languages, etc. Laboratories from all over the world can be linked together with the help of the internet.

*Local Interacting Prisoners' Dilemmas — Experiments in a spatial setting*

OLIVER KIRCHKAMP<sup>4</sup>, ROSEMARIE NAGEL<sup>5</sup>, AVNER SHAKED<sup>6</sup>

Abstract: We experimentally study the effects of locality in a repeated prisoners' dilemma. We compare players located on a circle with those in neighbourless groups. On circles players interact only with neighbours, but not with distant players. In groups all players interact with each other. We observe less cooperation on circles than in (neighbourless) groups. This is explained through different learning behaviour and a different way to use cooperation as a „signal“. Subjects are more reluctant to imitate their neighbours on circles than in groups. They are, however, more ready to use cooperation as a signalling device on a circle than in groups.

*Learning from other bidders. An experimental analysis of auctions with interdependent valuations*

OLIVER KIRCHKAMP<sup>7</sup>, BENNY MOLDOVANU<sup>8</sup>

Abstract: We study experiments in an auction setting with interdependent valuation. Groups of three players receive private signals and then bid for a single, indivisible item. Valuations for the item differ within groups and depend asymmetrically on a bidder's own and other bidders' signals. Theoretically, the English auction yields efficient allocations, while other standard auction formats fail to do so.

Consistent with equilibrium predictions, we find that an English auction yields significantly more efficiency than a second price auction.

We also study the seller's expected revenue and the bidders expected payoff, and find that the experimental results are close to the theoretical predictions.

*Optimale Entlohnung im Verhaltenstheoretischen Prinzipal-Agent Modell — Eine Experimentelle Studie*

MANFRED KÖNIGSTEIN<sup>9</sup>

Abstract: Im Rahmen dieser Studie wird das Problem der Wahl des Entlohnungsvertrages anhand einer einfa-

<sup>1</sup> Center for the Study of Law and Economics Universität des Saarlandes, Fakultät Wirtschaftswissenschaft, Discussion Paper 9705, <http://www.uni-sb.de/rewi/fb2/csle><sup>2</sup> Hypertext document available at <http://www.kirchkamp.de/webexp.html><sup>3</sup> University of Mannheim, SFB 504, L 13, 15, D-68131 Mannheim. <sup>4</sup> ebd. <sup>5</sup> Dep.of Economics, Universitat Pompeu Fabra, 132, Balmes, E-08008 Barcelona. <sup>6</sup> University of Bonn, Economic Theory III, Adenauerallee 24, D-53113 Bonn. <sup>7</sup> University of Mannheim, SFB 504, L 13, 15, D-68131 Mannheim. <sup>8</sup> University of Mannheim, Department of Economics, D-68131 Mannheim. <sup>9</sup> Humboldt-University of Berlin, Department of Economics, Institute for Economic Theory III, Spandauer Str. 1, D-10178 Berlin.

chen Prinzipal-Agent Beziehung aufgezeigt. Einer theoretischen Analyse unter der Annahme von rationalen, egoistischen und rein monetär motivierten Entscheidern wird das sogenannte „verhaltenstheoretische Modell“ gegenübergestellt, welches mögliche Einflüsse von Fairness in der Entlohnung auf das Verhalten der Entscheider berücksichtigt. Anhand experimenteller Daten werden die Verhaltensfunktionen des Agenten geschätzt und das Vertragswahlproblem des Prinzipals illustriert. Es zeigt sich, daß Erlösbeteiligungsverträge mit mittlerer Erfolgsbeteiligung und mittlerem Festgehalt für den Prinzipal einkommensmaximierend sind. Verträge mit hoher Erfolgsbeteiligung und niedrigem Festgehalt (bei konstantem Einkommen des Agenten) sind suboptimal.

*Informationsaggregation bei Signalkauf: Eine experimentelle Untersuchung*

C. KRAEMER<sup>1</sup>, M. NÖTH, M. WEBER<sup>2</sup>

Abstract: In der Regel wird angenommen, daß Märkte in der Lage sind, asymmetrisch verteilte Information effizient und vollständig zu aggregieren. Diese Annahme wird unabhängig davon getroffen, ob die Information kostenlos ist oder nicht. Ziel unserer experimentellen Untersuchung ist es, diese Annahme zu verifizieren. Hierzu haben Versuchsteilnehmer den Eintritt eines ihnen nicht bekannten Zustandes zu prognostizieren. Die Abgabe der Prognosen erfolgt sequentiell und in exogen vorgegebener zufälliger Reihenfolge. Als Grundlage ihrer Prognosen erhalten die Teilnehmer neben den öffentlich verfügbaren Prognosen ihrer Vorgänger die Möglichkeit, ein privates Signal zu einem vorgegebenen Preis zu erwerben. In den Experimenten zeigt sich, daß der überwiegende Teil der Personen den Informationswert des privaten Signals überschätzt und über das rationale Maß hinaus Signale erwirbt. Dies wiederum führt zu verringerter Konfirmität im Prognoseverhalten.

*The Impact of Compulsory Arbitration on Bargaining Behavior — An Experimental Study*<sup>3</sup>

ALEXANDER KRITIKOS

Abstract: A series of experiments compares the bargaining behaviour in a Rubinstein game under three different settings: i) no arbitration, ii) conventional arbitra-

tion, iii) final offer arbitration. In the no arbitration treatment, dispute rates with a zero payoff for the bargaining parties were under 10%, while the pie was equally split in less than 40% of the cases. Introducing the safety net of arbitration has a significant impact on bargaining behaviour. In the conventional arbitration treatment dispute rates increased due to the chilling effect to over 40% of the cases while at the same time equal splits are observed in almost 50% of the cases. In the final offer arbitration there is only a small increase of dispute rates (compared to the no arbitration treatment) while agreements according to an equal division of the pie have doubled to almost 80%. Due to its impact on bargaining behaviour, the final offer arbitration is therefore the tightest safety net for weak bargainers while bargaining costs are c. p. smallest under conventional arbitration.

*Reduction Invariance and Prelec's Weighting Functions*<sup>4</sup>

R. DUNCAN LUCE<sup>5</sup>

Abstract: Within the framework of separable utility theory, a condition, called reduction invariance, is shown to be equivalent to the 2-parameter family of weighting functions that Prelec (1998) derived from the condition called compound invariance. Reduction invariance, which is a variant on the reduction of compound gambles, is appreciably simpler and more easily testable than compound invariance, and a simpler proof is provided. Both conditions are generalised leading to more general weighting functions that include, as special cases, the families of functions that Prelec called exponential-power and hyperbolic logarithm and that he derived from two other invariance principles. However, of these various families, only Prelec's compound-invariance family includes, as a special case, the power function, which arises from the simplest probabilistic assumption of reduction of compound gambles.

*Conditions Equivalent to Unit Representations of Ordered Relational Structures*<sup>6</sup>

R. DUNCAN LUCE<sup>7</sup>

Abstract: This paper studies some of the relations among several concepts about the automorphisms of an

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ordered relational structure. In particular, it focuses on conditions that are equivalent to the translations (automorphisms with no fixed points) forming a homogeneous, Archimedean ordered group under the asymptotic order. These properties are equivalent to the relational structure having a numerical representation whose scale type lies between, but does not exclude, the ratio and interval types (Alper, 1987; Luce, 1987; Narens, 1981a,b). One result (Theorem 5) is that the following necessary conditions are also sufficient: the asymptotic order induced on the automorphisms is connected, the structure is homogeneous, the translations are Archimedean, and the dilations are Archimedean relative to all automorphisms. The latter property is equivalent to there being at most one proper, non-trivial convex subgroup. Contrary to hope, these results do not seem to lead to a simpler proof than Alper's for the Dedekind complete case. The paper concludes by examining the structure of parallel automorphisms.

*Rationality in Choice Under Certainty and Uncertainty*<sup>1</sup>

R. DUNCAN LUCE<sup>2</sup>

Abstract: Since Savage (1954) it has been accepted that subjective expected utility (SEU) embodies the concept of rational individual behaviour under uncertainty. If, however, one alters the domain formulation in two ways, by distinguishing gains from losses and adding a binary operation of joint receipt, then equally rational arguments lead in the case of binary mixed gambles to predictions quite different from SEU. A question, raised but not really answered, is whether there is a rational argument for choosing one domain formulation over the other.

*Separable and Additive Representations of Binary Gambles of Gains*

R. DUNCAN LUCE<sup>3</sup>, A. A. J. MARLEY<sup>4</sup>

Abstract: It is easy to axiomatise a ranked-additive representation of consequence pairs  $(x, y)$  in binary gambles  $(x, C; y)$  of gains with  $C$  held fixed, and independently a separable one of  $(x, C; e)$ , where  $e$  denotes the status quo. Assuming these axiomatisations and the behavioural property of event commutativity, a new representation, called "rational rank-dependent utility", is

derived. We report three behavioural conditions that force this representation to reduce to the standard rank-dependent expected utility one for gains. They are comonotonic consistency, ranked bisymmetry, and segregation, the latter requiring the addition of an operation of joint receipt.

*Utility of Gains and Losses: Measurement-Theoretical and Experimental Approaches*<sup>5</sup>

R. DUNCAN LUCE<sup>6</sup>

Contents: Preface; 1 Introduction; 1.1 Certain, Uncertain, and Risky Alternatives; 1.2 Preference and Its Determination; 1.3 Possible Additional Primitives; 1.4 Numerical Representations; 1.5 Empirical Evaluation of Models; 1.6 Outline ;

2 Basic Assumptions; 2.1 Elementary Accounting Indifferences; 2.2 Transitivity; 2.3 Monotonicity of Consequences; 2.4 Monotonicity of Events; 2.5 Elementary Rational Structure; 2.6 Decomposition into Gains and Losses Subgambles; 2.7 Summary;

3 Binary Gambles of Gains; 3.1 Binary Rank-Dependent Utility (RDU); 3.2 Distinguishing SEU and RDU; 3.3 Utility Functions; 3.4 Weighting Functions; 3.5 Separability and Rank-Dependent Additivity (RDA); 3.6 First Axiomatisation of RDU; 3.7 Second Axiomatisation of RDU; 3.8 Summary; 3.9 Proofs;

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5 General Gambles of Gains; 5.1 The General RDU Representation; 5.2 Ordinal Data on the Shape of Weighting Functions; 5.3 Four Axiomatisations of RDU; 5.4 Experiments on Rank Dependence; 5.5 Other Representations; 5.6 A Less Restrictive Theory; 5.7 Summary; 5.8 Proofs;

6 Additive Utility over Mixed Consequences; 6.1 The Extensive-Conjoint Axiomatisation; 6.2 Linking Mixed Gambles and Mixed Joint Receipts; 6.3 Utility of Mixed Gambles; 6.4 Buying and Selling Prices; 6.5 Summary; 6.6 Proofs;

<sup>1</sup> In S. Schneider & J. Shanteau (Eds): *Emerging Perspectives in Judgment and Decision Making*. In press. <sup>2</sup> University of California, Social Science Tower, Irvine, CA 92717, USA. <sup>3</sup> ebd. <sup>4</sup> McGill University. <sup>5</sup> Lawrence Erlbaum Associates, in press. <sup>6</sup> University of California, Social Science Tower, Irvine, CA 92717, USA.

7 Additive Value over Mixed Consequences; 7.1 Associative Joint Receipts; 7.2 Utility of Mixed Joint Receipts; 7.3 Utility of Mixed Gambles; 7.4 Buying and Selling Prices; 7.5 Summary; 7.6 Proofs;

8 Concluding Comments; 8.1 Main Ideas; 8.2 Open Empirical Problems; 8.3 Open Conceptual Problems; 8.4 Final Comment ;

Appendices; Summary of Notations; Basic Behavioural Assumptions; PEST Procedure; Additive Conjoint Measurement; Major Definitions

### *A Simple Axiomatization of Binary Rank-Dependent Expected Utility of Gains (Losses)*

A. A. J. MARLEY<sup>1</sup>, R. DUNCAN LUCE<sup>2</sup>

Abstract: For binary gambles composed only of gains (losses) relative to a status quo, the rank-dependent expected-utility model with a representation that is dense in intervals is shown to be equivalent to ten elementary properties plus event commutativity and a gamble partition assumption. The proof reduces to a (difficult) functional equation that has been solved by Aczél, Maksa, and Páles (submitted).

### *Vertical Foreclosure in Experimental Markets*

HANS-THEO NORMANN<sup>3</sup>

Abstract: This experiment was designed to test theories of foreclosure in vertically related markets. There is one upstream firm and two Cournot downstream firms. We analyse the market power of the upstream monopolist with and without integration of a downstream firm. We also investigate the effect of public versus secret contracts. To a large extent, the experimental data confirm the theoretical predictions. While the upstream firm can maintain its monopoly power under integration, the commitment problem arising with non-integration and secret contracts leads to the loss of monopoly power.

### *Bounded Rationality by Behavioral Pattern*

PETER OCKENFELS<sup>4</sup>

Abstract: Experiments show that human behaviour is not completely rational. There are some theories which

try to explain the experimental observation by modifying the game model and by assuming that human behaviour is rational. This paper offers an alternative approach. We assume that human behaviour is directed by behavioural patterns. The decision taking mind can only select out of a finite set of behavioural pattern.

### *Empirical Comparisons of Bilinear and Non-linear Utility Theories*

ROBERT SNEDDON<sup>5</sup>, R. DUNCAN LUCE<sup>6</sup>

Abstract: Several bilinear and non-linear utility theories are evaluated using individual data from 144 subjects. The non-linear models are best for 72% of the subjects. The non-rational property of duplex decomposition linking joint receipts and mixed gambles of gains and losses is more adequate than the rational link of general segregation for 77% of the subjects. The correlations are very high and linear, even in the worst fitting case. The weighting functions are mostly inverse S-shaped and for 84% of the subjects are fit best by the class of functions proposed by D. Prelec. These fits were generally excellent, with a minimum correlation of 0.81 a maximum of 0.99 and average of 0.97.

### *Learning by Doing? Wie unterrichtet man experimentelle Ökonomie?*

MARTIN STROBEL<sup>7</sup>

Abstract: Zweck dieses Vortrages ist es nicht, eine Antwort auf die im Titel gestellte Frage zu geben, sondern eine Diskussion darüber anzuregen. Dazu wird kurz berichtet, wie das Seminar „Spieltheorie und experimentelle Wirtschaftsforschung“ an der Humboldt-Universität abläuft und welche Erfahrungen wir damit gemacht haben.

### *Die Vermeidung eines public bad durch Mehrheitsabstimmung über Umverteilung — Experimentelle Evidenz*

MATTHIAS SUTTER<sup>8</sup>

Abstract: Hier wird ein Experiment vorgestellt, in dem in Gruppen von 7 Personen mittels Mehrheitsabstimmung gleichzeitig über die Umverteilung von Ressourcen

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cen und die Vermeidung eines public bad entschieden wird. Kommt keine qualifizierte Mehrheit für die Umverteilung zustande, tritt das public bad auf. Obwohl eine qualifizierte Mehrheit das einzige Nash-Gleichgewicht darstellt, wird in 25% (relativ teures public bad) bzw. in 45% der Abstimmungen (relativ billiges public bad) diese Mehrheit für Umverteilung nicht erreicht. Eine Variation zwischen anonymer und Abstimmung mit wechselseitiger Identifizierung zeigt, daß bei relativ billigen public bads der egalisierende Effekt von Identifizierung den effizienzsteigernden Effekt [Bohnet und Frey (1995; 1999)] überwiegt.

*25 Jahre BÖMA oder: Ist der Ausstattungseffekt gegen Entscheidungsvorbereitung immun?*

REINHARD TIETZ<sup>1</sup>

Abstract: Das Marktexperiment Böma wird seit 25 Jahren im Rahmen von volkswirtschaftlichen Lehrveranstaltungen eingesetzt. Es ist eine zweiseitige Auktion mit geheimen Geboten (double sealed bid auction). Der Ausstattungs- oder Endowmenteffekt ist dabei in vielen Experimenten beobachtet worden. Er besteht darin, daß die Anbieter im Mittel deutlich höhere Gebotspreise als die Nachfrager nennen. Durch der Entscheidung vorgeschaltete entscheidungsrelevante Fragen gelingt es, die Unterschiede zwischen Angebot und Nachfrage weitgehend zu reduzieren. Die Entscheidungsvorbereitung wird als „Planungsspirale“ interpretiert, in der auch die Positionen der Marktgegenseite Berücksichtigung finden. Durch die Planungsspirale konvergieren die Überlegungen, was sich in konsistenteren — und damit rationaleren — Entscheidungen niederschlägt.

Die vorgelegten Ergebnisse sind für die experimentelle Entwicklung eingeschränkt rationaler Theorien insofern von Bedeutung, weil nur reifes Verhalten, das sich in Entscheidungs- und Regelgleichgewichten repräsentiert für eine solche Theoriebildung eine geeignete Basis liefern kann. Dabei kann gedankliche Entscheidungsvorbereitung in ähnlicher Weise wie Erfahrung wirken.

*Risikoeinstellung im Prinzipal-Agent-Kontext*

FRANK VOSSMANN<sup>2</sup>, MARTIN WEBER<sup>3</sup>

Abstract: Entscheidungen über riskante Alternativen werden häufig in Prinzipal-Agent-Beziehungen getroffen. Wir greifen eine Untersuchung von Heath, Knez und Wu (1999) auf und replizieren und erweitern deren Resultate. In dieser Untersuchung wird gezeigt, daß die von Prinzipal und Agent angegebenen Sicherheitsäquivalente für Lotterien, deren Auszahlung von einer Antwort des Agenten abhängig ist, signifikant differieren und daß dies vom Prinzipal als Beleg für Konservatismus des Agenten gewertet wird. Zur Erklärung der Befunde wird ein auf der Support-Theorie basierender Ansatz präsentiert. In einer ersten Untersuchung können wir die Ergebnisse für den Fall südamerikanischer Aktienmärkte nicht bestätigen, während eine zweite Studie für den Fall deutscher Aktiengesellschaften im wesentlichen vergleichbare Resultate liefert.

*Communications Media and Cooperation — an Experimental Analysis*

JOACHIM WEIMANN<sup>4</sup>, AXEL OCKENFELS, JEANETTE BROSIG<sup>5</sup>

Abstract: The relation between communication media and cooperation behaviour is examined with the help of seven standard public goods experiments which only differ with respect to the medium of pre-play communication. Besides the established treatments of anonymous and face-to-face communication we also examined bidirectional and unidirectional communication by electronic auditory and visual media. It is shown that successful cooperation can be attributed to the opportunity of coordinating the behaviour in the communication phase. However, both the level and the stability of cooperation significantly interact with the quality of the communication medium, not with the content of communication.

*Koordination und Migration*

BEATE WOJTYNIAK<sup>6</sup>, ANDREAS ORTMANN<sup>7</sup>, CLAUDIA KESER<sup>8</sup>

Abstract: Auf der Basis des Minimum Effort Games wird die Koordination von Individuen analysiert.

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Das Basisspiel hat mehrere Gleichgewichte, die nach dem Pareto-Kriterium geordnet werden können. Ohne Kommunikation und ohne Selektion der Teilnehmer durch Teilnahmevoraussetzungen koordinieren sich die Versuchspersonen im Experiment auf einem Pareto-inferioren Gleichgewicht (Huyck, Battalio und Beil 1990). Camerer und Cachon zeigten 1996 den Einfluß von Zutrittsbarrieren auf das Koordinationsergebnis im Median Effort Game. Sie fanden, daß das Koordinationsergebnis deutlich verbessert wird, wenn die Individuen eine Gebühr für die Teilnahme am Koordinationsspiel zahlen müssen. Verschiedene Autoren untersuchten den Einfluß von Kommunikation im Minimum Effort Game. Ortmann (1999) zeigte, daß im Median Effort Game sogar cheap talk zu einer deutlichen Verbesserung des Koordinationsergebnisses hin zum Pareto-optimalen Gleichgewicht führen kann.

Verschiedene theoretische Untersuchungen (Ely 1995, Oechler 1996) zeigten, die Bedeutung der Pareto-inferioren Gleichgewichte durch die Einführung von Mobilität stark abnimmt. Wenn die Spieler ihre Gruppen frei wählen können, oder eigene Gruppen eröffnen können, ist das Pareto-dominante Gleichgewicht das einzige relevante Gleichgewicht. In der experimentellen Untersuchung Koordination und Migration untersuchen wir, ob und in wie weit dieser starke Effekt im Labor repliziert werden kann. Wir interpretieren Mobilität dabei als ein Signal, das wie Kommunikation und/oder Teilnahmevoraussetzung zu einer erheblichen Verbesserung des Koordinationsergebnisses führt. Dabei interessieren wir uns auch für das Verhalten von Pionieren, die dadurch gekennzeichnet sind, daß sie neue Gruppen eröffnen.

## 4 Forschergruppe „Environmental Dilemmas“

Axel Ostmann bittet uns, auf die Forschergruppe „Environmental Dilemmas“ an der Universität Karlsruhe und der Universität des Saarlandes hinzuweisen. Er schickt uns den folgenden Beitrag:

Die Gruppe ist hervorgegangen aus dem DFG-Projekt „Umweltgemeingüter“ (<http://www.wiwi.uni-sb.de/lst/ec>). Sie arbeitet interdisziplinär und kooperativ; in ihren Kooperationen beschränkt sie sich allerdings aufgrund der Interessen ihrer Mitglieder nicht Umweltsozialwissenschaften. Als weiteres Drittmittelprojekt kommt nun das VW-Projekt „Schadensreduzierende Anreize“ hinzu. Die wichtigsten der zuletzt erstellten Arbeiten sind:

Axel Ostmann: External control may destroy commons. *Rationality and Society* 10 (1998), 135-154.  
 Holger Meinhardt: Common Pool Games are Convex Games. Working Paper in Game Theory and Experimental Economics 8. Institut für Statistik und Mathematische Wirtschaftsforschung. Universität Karlsruhe. Überarbeitete Version erschienen in: *Journal of Public Economic Theory* 1 (1999), 247-270.  
 Clemens Czeronous, Axel Ostmann & Kerstin Planta: APLIGAME — Ein Programmpaket für experimentelle Spiele. Working Paper in Game Theory and Experimental Economics 9. Institut für Statistik und Mathemati-

sche Wirtschaftsforschung. Universität Karlsruhe. Martin Beckenkamp & Axel Ostmann: Missing the target? Sanctioning as an ambiguous structural solution. In Foddy et al. (eds.): *Resolving Social Dilemmas*, pp.165-180. Philadelphia (1999): Taylor & Francis.  
 Beate Wojtyniak & Axel Ostmann: Limits to accept — accepting the limits. Experimental tests of reduction policies for collective goods. Eingereicht: *Environment & Behavior*  
 Axel Ostmann, Beate Wojtyniak & Martin Beckenkamp: Comparing and Explaining the Success of a Common Endowment with Different Degrees of Sanctions. <http://www.indiana.edu/workshop/wow2/jun997.pdf>, Axel Ostmann & Martha Saboroya: Symmetric homogeneous local interaction. Erscheint als SFB 504 Papier.  
 Martin Beckenkamp & Axel Ostmann: Market performance and synthetic group performance in estimating population characteristics. (siehe IAREP99-Reader). Eingereicht: *Theory & Decision*.

Axel Ostmann möchte die GEW-Mitglieder vor allem auf das Buch von Foddy et al. (eds.): *Resolving Social Dilemmas*, erschienen Philadelphia (1999) bei Taylor & Francis, aufmerksam machen, das von der Social Dilemma Group erarbeitet wurde und über „state of the art“ der SD-Forschung Auskunft gibt.

Datum	Konferenz	Anmeldeschluß	Homepage
25.–28. August 1999	26th Annual Meeting of European Finance Association in Helsinki	1. März 1999	<a href="http://www.hkkk.fi/efa99">http://www.hkkk.fi/efa99</a>
29. August – 1. September 1999	ESEM 99 in Santiago de Compostela	15. März 1999	<a href="http://web.usc.es/~eea99/esemcall99.html">http://web.usc.es/~eea99/esemcall99.html</a>
1.–4. September 1999	EEA 99 in Santiago de Compostela	1. März 1999	<a href="http://web.usc.es/~eea99/eeacall99.html">http://web.usc.es/~eea99/eeacall99.html</a>
1.–3. September	SOR '99 in Magdeburg	1. Februar 1999	<a href="http://www.uni-magdeburg.de/SOR99/">http://www.uni-magdeburg.de/SOR99/</a>
6.–17. September	ENDEAR Summer School and Workshop in Bari		<a href="http://www.fee.uva.nl/endar/">http://www.fee.uva.nl/endar/</a>
28. September – 1. Oktober 1999	Jahrestagung des Vereins für Socialpolitik in Mainz	1. März 1999	<a href="http://www.vwl.uni-muenchen.de/verein/99call.htm">http://www.vwl.uni-muenchen.de/verein/99call.htm</a>
7.–8. Oktober 1999	ESA European Regional Meeting in Grenoble	31. Juli 1999	<a href="http://www.upmf-grenoble.fr/esa-europe99/">http://www.upmf-grenoble.fr/esa-europe99/</a>
12.–16. Juli 2000	IAREP/SABE 2000 Conference in Baden bei Wien	31. Januar 2000	<a href="http://www.univie.ac.at/iarep-sabe2000">http://www.univie.ac.at/iarep-sabe2000</a>
9.–28. July 2000	Workshop on Mathematical Models of Individual and Public Choice in Irvine	22. November 1999	<a href="http://hypatia.ss.uci.edu/imbs/workshop/workshop.html">http://hypatia.ss.uci.edu/imbs/workshop/workshop.html</a>
11.–16. August 2000	World Congress of the Econometric Society in Seattle	31. Januar 2000	<a href="http://www.econ.washington.edu/worldcongress/default.htm">http://www.econ.washington.edu/worldcongress/default.htm</a>
30. August 2000 – 2. September	European Economic Association in Bozen	1. März 2000	<a href="http://www.unibz.it/eea2000">http://www.unibz.it/eea2000</a>
19.–22. September 2000	Tagung des Vereins für Socialpolitik in Berlin	1. März 2000	<a href="http://www.vwl.uni-muenchen.de/verein/00call.htm">http://www.vwl.uni-muenchen.de/verein/00call.htm</a>
5.–7. Oktober 2000	Tagung der German Finance Association / Conference on Intertemporal Finance, in Konstanz	1. April 2000	<a href="mailto:Guenter.Franke@uni-konstanz.de">mailto:Guenter.Franke@uni-konstanz.de</a>
2000	ENDEAR Summer School and Workshop in Barcelona		<a href="http://www.fee.uva.nl/endar/">http://www.fee.uva.nl/endar/</a>
2001	ENDEAR Summer School and Workshop in Amsterdam		<a href="http://www.fee.uva.nl/endar/">http://www.fee.uva.nl/endar/</a>

Tabelle 1: Konferenzen