TRUST AND COOPERATION IN ONLINE INTERACTION

COLLOQUIUM OF THE
ROYAL NETHERLANDS ACADEMY OF ARTS AND SCIENCES (KNAW)

TENTATIVE PROGRAM

Chris Snijders
Uwe Matzat

DAY 1: MONDAY, MAY 2, 2005

9:30 – 10:00	Registration and coffee
10:00 – 10:15	INTRODUCTION by Prof. Worp (KNAW)
10:15 – 11:00	Bolton
11:00 – 11:45	Diekmann
11:45 – 12:30	Kollock
12:30 – 13:30	----------LUNCH
13:30 – 14:15	van Winden/Riedl
14:15 – 15:00	Cook
15:00 – 15:15	----------BREAK
15:15 – 16:00	Matzat
16:00 – 16:45	Smith
17:45	----------WASSERMAN VIDEOCONFERENCE
19:45	----------DINNER

DAY 2: TUESDAY, MAY 3, 2005

9:30 – 10:15	Resnick
10:15 – 11:00	Ockenfels
11:00 – 11:15	----------BREAK
11:15 – 12:00	Fischbacher
12:00 – 12:45	Buskens
12:45 – 13:45	----------LUNCH
13:45 – 14:30	Utz
14:30 – 15:15	Snijders
15:15 – 15:30	----------BREAK
15:30 – 16:15	Flache
16:15 – 17:00	Macy
17:00 +	----------RECEPTION

WORKSHOP DAY: WEDNESDAY, MAY 4, 2005

9:30 – 10:00	arrival
10:00 – 11:30	Online Surveys: Batinic
11:30 – 13:00	Online Experiments: Reips (1)
13:00 – 14:00	LUNCH
14:00 – 15:30	Online Experiments: Reips (2)
15:30 – 15:45	BREAK
15:45 – 17:15	Non-reactive data collection: Janetzko

ABSTRACTS

How not to build an online market: Expensive lessons in the importance of trust and cooperation – Peter Kollock

This presentation reports on results from a multi-year study of the social dynamics of commodity markets. In particular, it examines the many attempts (and failures) to create new online markets for the trading of wholesale standardized goods (e.g., propane, benzene, DRAM, chicken wings) during 1998-2001. These failed attempts provide invaluable data on the necessary underpinnings of markets and the social dynamics that drive them. Ignoring the behavioral realities of markets and the necessary roles of trust and cooperation led to designs and technology that in the majority of cases were incompatible with the needs of the traders.

Self-selection, slacking, salvaging, and stoning: the impact of negative feedback at eBay – Tapan Khopkar, Xin Li, and Paul Resnick

Seller and buyer behavior change in response to changes in a seller's feedback profile on eBay. We find strong evidence of self-selection, that sellers are more likely to drop out of the system right after receiving a negative feedback. We do not find evidence of sellers improving their performance in order to salvage their reputations. Instead, sellers get more negative feedback after receiving a negative feedback. We find that at least part of this effect can be attributed to buyer stoning, where buyers are more willing to give negative feedback to sellers who have recently received other negative feedback. The rest of this effect is apparently due to sellers slacking, providing poorer quality goods or service.

Third-party effects on trust in an embedded investment game – Vincent Buskens

Most theories about effects of social embeddedness on trust define mechanisms that, more or less explicitly, assume actors' decisions are based on information available to them. However, there is little empirical evidence about how subjects use the information that is available to them. In this paper, we derive hypotheses about the effects of information on trust from a range of theories and we devise an experiment that allows for testing these hypotheses simultaneously. We focus on the following mechanisms: learning, imitation, social comparison, and control. The results show that actors learn particularly from their own past experiences, and much less from past third-party experiences. Considering third-party information, we find stronger empirical support for imitation than for learning. Moreover, there is some evidence that actors dislike to be treated worse than others (social comparison) and that actors anticipate to some extent on opportunities for sanctioning they have in the future (control).

Reputation, information and matching in theory and experiment – Axel Ockenfels and Gary E. Bolton

Electronic reputation or 'feedback' mechanisms aim to mitigate the moral hazard problems associated with exchange among strangers by providing the type of information available in more traditional close-knit groups, where members are frequently involved in one another's dealings. In a series of earlier experiments we found that, while a feedback mechanism induces quite a substantial improvement in transaction efficiency, it also exhibits a kind of public goods problem in that, unlike in a partners market (in which the same people interact with one another repeatedly), the benefits of trust and trustworthy behavior go to the whole community and are not completely internalized. In this paper we prove theoretically that, in certain games, sequential equilibrium predictions can be sensitive to the matching scheme and the flow of information as we observe in the lab. However, new experiments strongly suggest that matching matters even in those cases where it theoretically should not and even for experienced players. Thus, even when all reputation information is shared and perfectly reliable, economic theory tends to underestimate the difficulties of promoting trust in anonymous online trading communities: Behaviorally, the matching scheme limits what can be maximally reached.

The role of endogenous trader matching and pricing in feedback mechanism performance – Gary E Bolton and Axel Ockenfels

The power of reputation to promote trust in business transactions is closely associated with networked communities, places where there is a good deal of interpersonal communication as well as exchange. Online and traditional markets are networked in different ways. This paper investigates the role of endogenous trader matching and endogenous pricing. The primary questions we investigatw are the effect the endogeneity has the performance of feedback mechanisms and whether reputational differences are reflected in the market pricing structure.

Opportunistic reputation and non-opportunistic help in an indirect reciprocity game – Urs Fischbacher

Indirect reciprocity experiments are a standard tool for studying the interaction of cooperative behavior and reputation building: People are put in an environment in which they can give and can receive help. When players provide help, they can build a reputation, which will be displayed to the donor when they are potential recipients of help. In this design there are two main motivations for helping: The desire to reward a good reputation and the desire to build up a good reputation. In an experimental design in which only half of the subjects have a visible reputation, we can disentangle the two effects and indeed show that both effects are important.

The Evolution of Trust and Reputation
Results from Simulation Experiments and Analysis from Auction Data

Andreas Diekmann, Ben Jann and Wojtek Przepiorka

The simple institution of a reputation system can play a crucial role in allowing the market to function in online auction sites. Rating transactions and making the results available to all interested actors is an important factor in promoting cooperation. In repeated one-shot dilemma games, reputation is a substitute for the iteration of games involving the same two parties.
Empirical data from internet auctions support the hypothesis of the price premium on reputation, suggesting that buyers are willing to pay an "insurance fee" to reputable sellers in order to reduce the risk of being deceived. But there are objections to the idea that the reputation system alone ensures the smooth functioning of the internet-auctions market. It has been argued that other protection, specifically the threat of external sanctions by the platform operator, are also necessary in order for cooperative interactions to evolve. The question therefore arises as to whether cooperation can evolve endogenously in the presence of only a reputation system and in the absence of an external enforcer. We research this question with simulation experiments that reproduce the essential characteristics of internet-auctions markets. We start from the trust game with a reputation mechanism. We employ two different methods to research the success of various buyer and seller strategies in different combinations: simple reputation experiments and round-robin tournaments of strategies as submitted by participants. Our findings deviate from those produced by the tournaments conducted by Robert Axelrod in that they provide evidence for niches for deceitful strategies to survive and persist.

Why the internet may increase global cultural polarization

Andreas Flache

Following Axelrod's model of cultural dissemination (Axelrod, 1997), formal computational studies of cultural influence have suggested that a larger geographical range of communication – in particular due to the rise of the internet - may increase global cultural homogeneity. The underlying argument is that with an increasing range of interaction, the cultural influences to which actors in different geographical regions are exposed become more similar to each other, because they increasingly resemble the overall distribution of cultural traits in the world population as a whole. However, more recent extensions of Axelrod's model (e.g. Greig, 2002) point to another possibility. Computational experiments demonstrated that a more global range of interaction may also allow local minorities to find in global communications support against pressures to conform to local majorities. These studies suggest that the internet may under certain conditions stabilize rather than reduce global diversity. All models in this tradition assume a process of social influence in which actors tend to move towards a weighted average of the opinions of their interaction partners. In the present paper, I argue that these studies may therefore have neglected an important possibility. Research on social influence has shown that both positive and negative mechanisms take place in interpersonal contacts. When perceived initial differences between two people are relatively small, their relationships tend to improve and their opinions tend to become more similar through interaction (homophily and social influence). However, when perceived initial differences between two people are too large, they may reject each others' opinions and develop an increasingly hostile relationship (rejection and heterophobia). I use a computational analysis based on Hopfield's attractor neural network to

demonstrate that including the possibility of rejection and heterophobia may dramatically alter model implications. With global communication, an initially diverse population may tend to fall apart in mostly two polarized subgroups that negatively evaluate each other and are opposed on a number of cultural traits. The reason is that increasing convergence in norms between some subgroups - due to homophily, social influence and small initial similarities - can develop alongside with increasing differences and disliking towards other groups – due to heterophobia, rejection and small initial dissimilarities. In the process, two opposed factions tend to arise, because with global communication, all actor move towards or distance themselves from the same global cultural profile to which they are exposed. Further computational experiments show that a smaller geographical range of communication increases both global diversity and overall social integration – defined as the degree to which negative relationships are present that divide the population. Furthermore, I demonstrate that the model implies that – counter intuitively – the tendency towards polarization in globalized communication may become stronger when actors are more tolerant with respect to relatively small differences of opinions.

Cross-cultural Trust and Collectivism: On-line Experiments in the U.S. and Japan

Ko Kuwabara, Michael Macy, and Robb Willer, Cornell University

Cross-cultural trust and cooperation are important concerns for international markets, political cooperation, and cultural exchange. Until recently, this problem was difficult to study under controlled conditions due to the inability to conduct experiments involving interaction between participants located in physically distant locations. We report results of the first experiment using a Web-based virtual lab to study trust and cooperation between Japanese and Americans in cross-national on-line interaction. In a simulated on-line market with a bicultural population, participants played trust games in two different experimental conditions: a nationality-visible condition in which everyone's nationality was publicly identified during the session, and a nationality-invisible condition in which participants did not know who was Japanese or American. Surprisingly, we found larger differences between Japanese and Americans when nationality was not visible. These findings support and extend Yamagishi's (1998) structural theory of trust.

Social control and relational signals in online groups

Uwe Matzat

The outcomes of interaction in online groups depend to a large extent on finding solutions to free rider problems and problems of trust between members. Case studies of online groups suggest that group administrators apply different kinds of social control to stimulate membership interaction–varying form direct control to different degrees of indirect social control (e.g. Haffner 1997, Suler 2000, Shafer 2001). Unfortunately the studies also suggest that even the same type of social control can have different effects in different groups. This paper analyzes which types of social control affect group members' interaction in what way.
A theory of online interaction (Lindenberg 1989) is presented which argues that a group member's online behavior sends signals about how he regards his relationship to other members and to the group. Three kinds of relational signals are distinguished. First, during bilateral interaction a member's online behavior reveals information how he regards his relationship with his interaction partner (e.g., as a long-term friendship relation or as a short-term instrumental relation).

Second, during group activities a member's (lack of) participation gives information to what extent he takes into account the common goals and rules of the group. Third, the behavior of the group manager signals to the members what kind of behavior is expected from them (e.g., purely egoistic behavior or behavior that takes into account the interests of others). Under specific conditions members take the sending of the signals into account when they decide whether to contribute to group discussions and to participate in other online activities. Administrators of online groups can use the insights to influence the members' behavior by applying three different kinds of social control.
Group conditions influence what the effects of the different types of social control are. The predictions of the theory are used to make clear why the application of a certain kind of social control had different effects in the examined online groups. Moreover, they are used to derive new hypotheses about the effects of social control in different types of online groups.

Competition and Well-Being

Jordi Brandts, Arno Riedl and Frans van Winden (CREED)

We study the effects of competition in a context in which people's decisions are communicated through the computer and contracts are incomplete. We find that in such an environment the very presence of competition does neither increase efficiency nor does it yield any payoff gains for the short side of the market. We also find that competition has a strong negative impact on the subjective (experienced) well-being of those on the long side of the market. Furthermore, social wellbeing in the sense of a preparedness to help others is negativeluy affected. This might have negative implications for efficiency in the longer-run.

Assessing trustworthiness in online and offline interactions

Karen S. Cook, Coye Cheshire, Alexandra Gerbasi and Brandy Aven

Assessing the trustworthiness of others is an essential part of the daily interactions that take place between individuals in various social settings. The level of uncertainty and the nature of what is at stake affect the risks involved in a given interaction situation. Furthermore, the mechanisms that are put in place to help individuals assess the trustworthiness of others typically vary according to the levels of uncertainty and risk in the setting. As it becomes progressively more common to interact and engage in exchanges using computer-mediated communication systems such as the Internet, the anonymity of individuals and the reduction in available social cues increase the risks as well as the possibilities for misjudging trustworthiness and thus the risk of loss or even harm. In this paper, we examine the factors that individuals use when determining the trustworthiness of exchange partners in interpersonal relationships. In particular, we argue that the competence and motivations of the exchange partner are two key bases of individuals' inferences about trustworthiness, particularly when there are no third-party or credible institutional devices in place to reduce uncertainty and manage risk. We present the results from the first stage of a sequence of studies and experiments designed to explore the question of how individuals assess the trustworthiness of others in online (computer-mediated) and offline (non computer-mediated) interactions.

The Microsoft Research Community Technologies Group: Recent work

Marc Smith

The Microsoft Research Community Technologies group focuses on the study and enhancement of computer mediated collective action systems. In this talk I will present recent developments in two projects that highlight and attempt to enhance computer mediated collective action: Netscan and AURA.

Netscan is a set of tools and services for online communities. We have recently developed faster data update models, new Web service interfaces, a custom community portal page, and a new information visualization application ("Usenet Views") that makes it simple to map and chart newsgroup communities. Recent work has extended Netscan into the study of personal email stores in the form of the SNARF project (the Social Network And Relationship Finder).

The Advanced User Resource Annotation system (AURA) is a platform for Pocket PCs, Smartphones and mobile PCs that have various kinds of sensors such as barcode readers, digital cameras, WiFi signal strength detection, radio frequency identification (RFID) tag readers, and GPS. Using AURA today, users can scan the barcodes on everyday objects in the home, office, or store and gain access to related information and services such as competitive pricing and product reviews. Other kinds of tags, such as tags placed on art or equipment asset tags, can be easily linked to related data through Web sites or Web service interfaces. This talk covers several developments in the mobile annotation space and describes future directions for AURA and related services.

Reputation in the market for online coders: the RentACoder case

Chris Snijders

The results in the empirical literature on the (positive) effects of reputation systems on probability of sale and end price of an auction are somewhat mixed. Often no effects are found, and sometimes small positive effects of reputation on end price are found. In any case, most of the available empirical results are based on data from eBay (or similar auction sites).

In our contribution, we consider the case of RentACoder.com, a site where one can hire "coders" (programmers) to write software. This goes as follows: A buyer announces he has a coding job on offer. Coders can then submit a bid with accompanying text, for instance describing the experience they have similar programming tasks. The bids are revealed to the buyer only, so the auction is in that sense closed. In contrast to the standard closed-bid auction, the buyer can communicate with the coders before accepting a bid and for instance still try to negotiate about the price or the specifics of the job. After a completed coding job, buyer and coder can rate each other on a scale from 1 to 10. This information is added to the reputation score of the coder. The question under study is similar to the eBay case. Do coders benefit from a high reputation score? We consider this and other questions based on data from all completed public auctions on RentACoder between 2001 and 2005.

Communication and lack of trust

Sonja Utz

<abstract to be included>