6th JDMWorkshop
for young researchers

July 17th to 19th 2013, Berlin, Germany

With generous support from

eadm
The European Association for Decision Making

organized by

Dirk Wulff
Nathaniel Phillips
Felix Henninger
Pascal Kieslich
Michael Schulte-Mecklenbeck

Workshop schedule

	Wednesday	Thursday	Friday
9:00	Welcome	Blitz talks **Multi-Attribute**	Blitz talks **Prefer. Choice**
		Blitz talks **DfE**	Blitz talks **Risk & Morality**
10:00	Scienctific speed dating	Blitz talks **Cogn. Processes**	Blitz talks **Contextual infl.**
11:00		Coffee break	
11:30	Extended talks **Interdependent decision making**	Extended talks **Applied JDM Research**	Extended talks **Memory Processes in Decision Making**
13:00		Lunch break	
14:30	Extended talks **Process Tracing Methods**	Workshop **Crowdsourcing JDM research on Amazon Mechanical Turk**	Workshop **Psychologists are open to change and should adopt Bayesian statistics**
16:00		Coffee break	
16:30	Keynote **Publishing without perishing**	Extended talks **Adaptive Decision Making**	Extended talks **Biasing influences in JDM**
18:00			Closing Session
19:00	Dinner (in the area)	Barbecue (MPI)	Informal post-workshop activities…

Wednesday

Welcome

9:00   **Arrival and Introduction**

10:00   **Scientific speed dating**

ETs: Interdependent decision making – Dirk Wulff

11:30   **Should I Stay or Should I Switch?**
The Wisdom of Individuals to Take Advice within Small Crowds
Juliane E. Kämmer, Hansjörg Neth, Anselm Rothe,
Pantelis Pipergias, & Mehdi Moussaid

12:00   **How to prevent competitive escalation in the minimal dollar auction paradigm**
Sebastian Hafenbrädl & Jan K. Woike

12:30   **Competing in the Dark:**
How competition affects information search in decisions under uncertainty
Nathaniel D. Phillips, Ralph Hertwig, Yaakov Kareev, & Judith Avrahami

ETs: Process tracing methods – Felix Henninger

14:30   **Using computer mouse movements**
to parse the temporal dynamics of value-based choices
Nicolette J. Sullivan, Cendri A. Hutcherson, Alison Harris, & Antonio Rangel

15:00   **Response dynamics in social dilemmas:**
Dissecting the influence of social norms, fear, and greed
Pascal J. Kieslich, Benjamin E. Hilbig, & Felix Henninger

15:30   **Puppies, nano medicine, and attitude formation:**
How different (un)familiar attitude objects are mentally processed
Roxanne I. van Giesen, Arnout R. H. Fischer, Heleen van Dijk, & Hans C. M. van Trijp

Keynote

16:30   **Publishing without perishing**
Prof. Gerd Gigerenzer

Thursday

BTs: Multi-attribute choice – Anke Söllner

9:00 **Learning to choose among multi-attribute alternatives**
Pantelis Pipergias Analytis & Konstantinos Katsikopoulos

9:10 **Everything in Order? Investigating Multi-Cue Inferences from Givens**
with a new Task Format
Florence Ettlin & Arndt Bröder

9:20 **Neglected but Pervasive:**
Further Evidence for the Influence of Display Orientation on Information Search
Thomas Scherndl, Michael Schulte-Mecklenbeck, & Anton Kühberger

BTs: Decisions from experience – Ariel Telpaz

9:45 **Decisions from approximate descriptions**
Dylan Cooper

9:55 **How to measure risk taking in older adults?**
Renato Frey

10:05 **Is search like choice in decisions from experience? A process tracing analysis**
Dirk U. Wulff, Michael Schulte-Mecklenbeck, & Jonas Haslbeck

BTs: Cognitive processes in decision making – Leigh Caldwell

10:30 **How do discount functions reflect**
attribute-based strategies in intertemporal choice?
Renata Suter

10:40 **Strategy shifts in risky choice**
Felix Henninger, Pascal J. Kieslich, & Benjamin E. Hilbig

10:50 **The power of irrelevance!**
How irrelevant cues influence decisions under uncertainty
Nadine Nett & Christian Frings

ETs: Applied JDM research – Sebastian Hafenbrädl

11:30 Overconfidence and Entrepreneurial Choice under Ambiguity
Anisa Shyti

12:00 Effect of culture on judgments of dynamic performance
Samantha Sim & Jochen Reb

12:30 How executives can (not) decide – a study on perceived challenges and measures in top-management decision making.
Stephan Bedenk & Wolfgang Scholl

Workshop

14:30 Crowdsourcing JDM research on Amazon Mechanical Turk: Opportunities and Threats
Prof. Gabriele Paolacci

ETs: Adaptive decision making – Juliane Kämmer

16:30 Economic agent models from adaptive rationality
Leigh Caldwell

17:00 Two frameworks of decision making: How intruding information helps to distinguish between Single- and Multi-Strategy-Models
Anke Söllner & Arndt Bröder

17:30 Probability matching as an optimal choice strategy: The adaptive potential of a classic fallacy
Christin Schulze, Don van Ravenzwaaij, & Ben R. Newell

Friday

BTs: Preferential choice – Renata Suter

9:00   **Decision Importance Leads to More Deferral**
Job M.T. Krijnen, Seger M. Breugelmans, & Marcel Zeelenberg

9:10   **Why the Attraction Effect is Rational**
George Farmer, Andrew Howes, Paul Warren, & Wael El-Deredy

BTs: Risk perception and morality – Uriel Haran

9:45   **Imagery, stress, and risk perception:**
The role of affect-laden imagery in risk perception
Jakub Traczyk, Agata Sobków, & Tomasz Zaleśkiewicz

9:55   **Morality within risk perception and the role of fragility of scientific evidence**
Claudia Bassarak

10:05   **Accounting for proscriptive and prescriptive morality:**
Paradoxical influences of incidental emotions on ethical decision making
Laura Noval

BTs: Individual and contextual influences on JDM – Pascal Kieslich

10:30   **When groups perform better than their best individual member?**
Prescribed decision strategies for group cognitive synergy
Nicoleta Meslec, Petre L.Curseu, & Marius T.H. Meeus

10:40   **Advertising content influece on financial advisors's perception and financial advice**
Inga Jonaityte

10:50   **Individual differences in intuitive abilities**
Agata Sobków & Czesław Nosal

ETs: Memory processes in decision making – Renato Frey

11:30 **Serial Position Effects in Preference Construction**
Emina Canic & Thorsten Pachur

12:00 **The role of memory processes in use of the recognition heuristic**
Marta Castela

12:30 **Age differences in memory based decision making**
Anika Josef, Rui Mata, Thorsten Pachur, & Ralph Hertwig

Workshop

14:30 **Psychologists are open to change and should adopt Bayesian statistics**
Mirjam Jenny & Stefan Herzog

ETs: Biasing influences in JDM – Nathaniel Phillips

16:30 **The complaint bias in subjective evaluations of incentives**
Eldad Yechiam, Ariel Telpaz, & Guy Hochman (presented by 2nd author)

17:00 **Investing Amid Uncertainty: A Test of the Domain Specific Anchoring Hypothesis**
Hui Yih Chai & Ben R. Newell

17:30 **The role of actively open-minded thinking
in information acquisition, accuracy, and calibration**
Uriel Haran, Ilana Ritov, & Barbara Mellers

Goodbyes

18:15 **Closing session & feedback**

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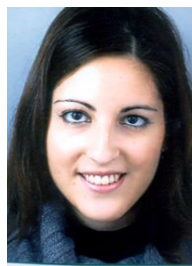e.canic@warwick.ac.uk
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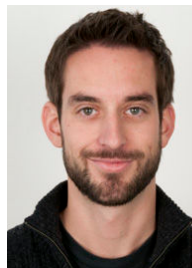hui.chai@psy.unsw.edu.au
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Sessions & Abstracts

Interdependent decision making

Navigating the social environment:
An ecological Rationality Perspective on Advice-Taking Behavior

Juliane E. Kämmer (1), Hansjörg Neth (2), Anselm Rothe (2), Pantelis Pipergias (1), & Mehdi Moussaid (1)
1: Max Planck Institute for Human Development, ABC; 2: University of Göttingen

Many decisions are made in a social context, for example, under the advice of another person. We investigated the environmental circumstances under which two prominent strategies—averaging and choosing—are effective and adaptive and explored how people employ them. In Experiment 1 and 2, participants (N = 111 and N = 90, respectively) provided initial estimates for general knowledge questions that varied in perceived difficulty. In Experiment 2, they additionally received advice in the form of an estimate and confidence rating of another person before providing a revised estimate. As expected, items of different perceived levels of difficulty exhibited distinctive statistical properties, thus constituting different social environments. Environment structure affected the theoretical performance of averaging and choosing, and the ways in which people integrated advice. We embed our analyses in the frameworks of ecological rationality and the probability, accuracy, redundancy (PAR) model of advice taking (Soll & Larrick, 2009).

How to prevent competitive escalation in the minimal dollar auction paradigm

Sebastian Hafenbrädl (1) & Jan K. Woike (2)
1: University of Lausanne; 2: Max Planck Institute for Human Development

Escalation of commitment, the tendency to increase one's investment in a losing course of action even after negative feedback is well known for its adverse consequences. In this paper, we investigate a situation in which escalation of commitment occurs in competitive settings. Based on Shubik's (1971) original auction game, we introduce a 'minimal' dollar auction paradigm, which allows us to study competitive escalation in small anonymous groups in the lab. In three experiments, students and experienced executives bid more than 10 CHF for a prize of 10 CHF. In addition, we test two interventions aimed at preventing competitive escalation: a 'goal setting' intervention, which has been instrumental in reducing classic escalation of commitment, is not effective in the competitive situation, whereas a 'vicarious learning' intervention successfully prevents escalation. The result is consistent with the theory of a 'cold-hot empathy gap' that impedes individuals from correctly anticipating their experience of the competitive situation before entering it.

Competing in the Dark:
How competition affects information search in decisions under uncertainty

Nathaniel D. Phillips (1), Ralph Hertwig (1), Yaakov Kareev (2), & Judith Avrahami (2)
1: Max Planck Institute for Human Development; 2: Hebrew University of Jerusalem

Decision-making tasks frequently involve choosing between uncertain options whose probability distributions are unknown a priori. In these tasks, organisms must balance the informational benefits of exploring novel options to estimate their quality with the immediate benefits of exploiting options that are believed to have high quality. This exploration-exploitation trade-off has been studied in a variety of domains where decision-makers act alone (e.g; multi-armed bandits, secretary problems). In the current research, we explore how organisms manage this trade-

off in socially competitive situations, such as obtaining a mate or finding a home. We designed an experimental paradigm where participants search for information about two choice options side-by-side with a competitor wherein one player's choice consumes the chosen option and thus removes it from the other player's choice set. In an empirical study using the paradigm, we found that social competition dramatically reduced pre-decisional information search relative to a solitary condition and that participants who stopped search early obtained higher payoffs on average than those who waited. Next, we mathematically derived optimal stopping rules from this paradigm and found that optimal search lengths vary systematically as a function of the choice environment (i.e.; the gambles), and the social context (i.e.; the stopping rules of one's competitors). For example, options with skewed payoff distributions, especially those with extreme rare events, tend to favor longer search, while being in the presence of competitors who choose quickly tends to favor shorter search. The effects of competition we measured empirically appeared to be consistent with the principles of optimal search that we derived.

Process tracing methods

Using computer mouse movements to parse the temporal dynamics of value-based choices
Nicolette J. Sullivan (1), Cendri A. Hutcherson (2), Alison Harris (2), & Antonio Rangel (1, 2)
1: Computational & Neural Systems, Caltech; 2: Humanities & Social Sciences, Caltech

Although techniques using reaction time information such as drift diffusion modeling can explain some aspects of value-based choices, the temporal dynamics of decision-making remain poorly understood. For example, do different features of a choice affect behavior at different times? When does self-control begin to influence the decision? Here, we explore the added value of "mouse tracking," a technique that measures dynamic changes in mouse movements over time to parse the temporal components underlying real food choices.

Subjects made a series of choices between pairs of food items using the computer mouse and for some subjects eye gaze was simultaneously recorded. Mouse and eye trajectories were normalized and analyzed using in-house code. Cursor trajectory properties, including angle, velocity, acceleration, and cursor position were then fed into per-time-point regressions to reveal the weights of food properties on mouse trajectory at each time-point during the decision process.

Analysis of mouse trajectories revealed patterns not accessible to traditional behavioral methods: 1) a distinct "pull" toward the more tempting food item when self-control is being exerted that is more pronounced among those with worse than average self-control, 2) differences in the time at which taste and health food properties become significant drivers of the decision, which correlate a participant's self-control ability, 3) mouse trajectory signals within the first 100 ms provide important clues to decisions as far out as 2-3 seconds later, and 4) we are able to parse the mouse trajectory into "decision making" and "motor movement" components which reveal additional information about the decision process.

Our results suggest that mouse tracking can help us understand influences on decision making with a temporal resolution not previously achieved in behavioral studies. Mouse tracking provides information not available in traditional behavioral measures like simple reaction times and eye tracking, at a fine temporal scale. This technique has the potential to reveal novel insights into the temporal dynamics of decision-making before the choice is actually made.

Response dynamics in social dilemmas:
Dissecting the influence of social norms, fear, and greed

Pascal J. Kieslich (1), Benjamin E. Hilbig (1), & Felix Henninger (1, 2)
1: University of Mannheim, Germany; 2: Max Planck Institute for Research on Collective Goods

When investigating cooperation in social dilemmas, most studies have focused exclusively on analyzing the decisions made by participants. Thereby, cognitive processes that take place during the formation of these decisions have mostly been ignored. The current study attempts to fill this gap by taking a closer look at the decisional conflict experienced by an individual before actually deciding to cooperate or to defect in social dilemma games. Based on research on the influence of social norms, we hypothesized that individuals experience more conflict when defecting than when cooperating. In addition, it was examined whether greed or fear has a stronger influence on cooperation. To do so, three types of games with different payoff structures (Stag Hunt, Chicken, and Prisoner's Dilemma Game) were employed, such that either fear, greed, or both would motivate defection. To assess decisional conflict, response latencies were measured. More importantly, building on recent methodological advances in analyzing response dynamics, the mouse movement trajectories of participants during the decision process were recorded. Longer reaction times and more curved trajectories were taken as indicators of higher decisional conflict. Results showed that participants generally took longer and responded in more curved trajectories when defecting than when cooperating. A comparison of the different games further revealed shortest response latencies when cooperating once only fear motivated defection. In sum, the results suggest a strong influence of social norms on the formation of decisions in social dilemmas. In addition, greed seems to be relatively more important than fear in terms of motivating defection.

Puppies, nano medicine, and attitude formation:
How different (un)familiar attitude objects are mentally processed

Roxanne I van Giesen, Arnout R. H. Fischer, Heleen van Dijk, & Hans C. M. van Trijp
Wageningen University

Forming an attitude requires mental effort. Amount of mental processing is determined by the stimulus type, and the attitude to be reported (affective or cognitive). In a first study it is investigated with eye-tracking how much mental processing takes place for different familiar stimulus types (univalent, neutral, ambivalent) and whether attitude formation is comparable for cognitive and affective attitudes. Eye-tracking allows to investigate depth of processing; whether information is scanned or computed on a higher level of attention. It is shown that different stimulus types require different mental processing. For ambivalent stimuli more mental processing is invested to form an affective attitude, whereas for neutral stimuli more processing is invested to form the cognitive attitude. The attitude component (either affective or cognitive) that requires more mental processing is less important in forming an overall attitude toward the attitude object. Thus, for ambivalent stimuli the cognitive attitude is to be preferred to base the overall attitude on, and for neutral stimuli the affective attitude.

This research will be extended to unfamiliar attitude objects (e.g. nanotechnology products), because the cognitive component is less existent here. Previous research showed that when there is no in-depth understanding about an attitude object people rely more on affect. Assuming that affect is a default option under low-knowledge conditions, it will be investigated whether forming the affective attitude also requires minimal mental processing and is decisive in forming an overall attitude, independent of the stimulus type (univalent, neutral, ambivalent). Conversely, it can be that constructing the cognitive and affective attitude toward unfamiliar attitude objects both requires a considerable amount of mental processing, likewise depending on the stimulus type. Comparisons with the attitude formation process toward familiar attitude objects will be made. By means of eye-tracking new insights about underlying processes of attitude formation can be discovered.

This paper explores how variation in presentation of financial information affects the likelihood of suboptimal financial decision-making by a little understood expert sample – financial advisers.

Multi-attribute choice

Learning to choose among multi-attribute alternatives
Pantelis Pipergias Analytis & Konstantinos Katsikopoulos
Max Planck Institute for Human Development

Choosing sequentially among multi-attribute alternatives is a decision-making context commonly encountered by humans, animals and organizations. Facing such an environment, the agents can use past experiences to infer their preferences about items that they have not experienced directly. The agents can further improve the predictive potential of their preferences by way of choosing courses of action that they have not tested yet. By doing so, however, they forego the benefits from exploiting the best course of action under the current state of knowledge. We discuss this learning-exploitation dilemma and show that it is entwined with a sampling problem and a stopping problem. We use simulations to study how different inductive strategies perform in the task for varying overall time and sampling horizons. In addition, we propose heuristic strategies that tackle the associated sampling and stopping problems and discuss the conditions under which those heuristics perform well.

Everything in Order?
Investigating Multi-Cue Inferences from Givens with a new Task Format
Florence Ettlin & Arndt Bröder
University of Mannheim

In research on multi-cue inferences from givens, cue-information is provided about a number of different options between which participants have to decide. Typically, this information is presented in cues-by-options matrices. However, information we encounter 'in the wild' comes in various shapes and formats and sometimes needs to be organized by the decision maker herself. It was shown that availability is not sufficient for effective information use; there should be congruence between the task and the presentation of information. The assumption that people prefer task-congruent organizations of information when this reduces effort (e.g., of strategy application) is compatible with the idea of information-processing limitations and cost-benefit frameworks. We present a task format that allows assessing not only search direction (cue-wise vs. option-wise) but also the organization of information. That is, the information is displayed in a random arrangement at the bottom of the screen and the participant needs to search for the information he is interested in. Before the information is revealed, the participant needs to place it into one of several "bins" presented in the middle of the screen. We are mainly interested in whether people use these bins to organize information in cue- or option-wise manner and whether the organization matches the selected decision strategy. In further steps, we will investigate the influence of restrictions in the search direction and in the possibility to organize information on people's strategy selection and on their performance in the decision task. The main idea is to disentangle search direction from the organization of information and to investigate the relevance of each of these two factors in the decision process.

Neglected but Pervasive:
Further Evidence for the Influence of Display Orientation on Information Search
Thomas Scherndl, Michael Schulte-Mecklenbeck, & Anton Kühberger
University of Salzburg

Information search has received increased attention in JDM research and the benefit of process measures for gaining deeper insight into choice processes is evident. There is little research on whether these process measures are stable and robust with respect to differences of display orientation, and recent research raises some question to this assumption (Shi, Wedel, & Pieters, in press).

In this talk, we will first present an overview of information search studies showing that there are heterogeneous approaches as to how to orient information displays in decision tasks. Secondly, we will present evidence from own

studies using MouselabWeb showing that display orientation changes information acquisition patterns. We presented participants naturalistic multi-attribute decision making tasks and manipulated whether alternatives were presented in columns, and dimensions in rows or vice-versa.

We found a systematic effect of display orientation on information search patterns: If dimensions were presented in rows, a more dimension-wise search followed than when dimensions were presented in columns. Deeper analysis of participants' information search suggests that the difference is mainly due to the reading of information that takes place in an initial reading and screening stage. Search in the following evaluation stage is not influenced. This finding has important consequences given that there is no common standard of presentation in JDM process research.

Process tracing findings may thus show little consistency and inferences from information search patterns to strategy use may be biased due to this contextual display effect. We opt for the development and adoption of standards for information display.

Decisions from experience

Decisions from approximate descriptions
Dylan Cooper
The University of Arizona

In many situations (e.g., when reading the abstracts of conference presentations), the descriptions that decision makers receive are approximate summaries that hide the often-important details of their choices. However, research looking at differences in decisions from description and decisions from experience tends to use complete and accurate descriptions of the choices.

This proposed research will compare decisions made from approximate descriptions to decisions made from experience. In particular, rare and extreme events will not be included in the choice descriptions. After participants either receive a description of their choices or learn about their choices through experience, they will make multiple rounds of choices for pay. In those rounds, they will experience a rare event. I predict that participants who received approximate descriptions will react more extremely to the rare event than participants who learned from experience.

How to measure risk taking in older adults?
Renato Frey
Max Planck Institute for Human Development, ARC

Cognitive abilities were found to moderate risk taking in older adults (Boyle et al., 2011), with higher cognitive abilities leading to greater risk aversion. These findings rest on monetary gambles as typically used by economists, that is, two-alternative choice tasks with described outcomes and probabilities. In other paradigms where decisions rest on experienced information of outcomes and frequencies, however, older adults showed a similar choice performance as younger adults, despite a clear decline in fluid cognitive abilities (Frey et al., in prep). Thus, when measuring risk taking behavior in older adults, the format of the decision making task may have a substantial impact on the observed results. In the current project, we pit a description-based and an experience-based task against each other within participants. Thereby, we investigate whether differences in older adults' cognitive abilities moderate risk taking differently in the two task formats.

Is search like choice in decisions from experience? A process tracing analysis

Dirk U. Wulff, Michael Schulte-Mecklenbeck, & Jonas Haslbeck
Max Planck Institute for Human Development, ARC

Choices between risky prospects based on experience differ from those based on description. The explanation for this difference is still debated, in part because the element of search in decisions from experience and its relationship to choice is not fully understood. To illuminate this issue, we recorded participants' mouse tracks in both free and consequential sampling paradigms in decisions from experience and in decisions from description. Comparing the mouse trajectories over these conditions allowed us to test whether search and choice are indeed governed by the same process as has been suggested. Preliminary results however indicate different processes.

Cognitive processes in decision making

How do discount functions reflect attribute-based strategies in intertemporal choice?

Renata Suter
Max Planck Institute for Human Development

Intertemporal choice refers to decisions that require tradeoffs among outcomes that will occur at different points in time. Conventionally the effect of delay on the subjective value of future outcomes is captured by a discount function: Outcomes receive less weight the longer they are delayed. However, discount functions are often regarded as being mute with regard to the cognitive processes underlying intertemporal choice. To capture the process, different attribute-based models have been suggested, in which the options are directly compared along their attributes.

We investigated how the use of attribute-based strategies is reflected in discount functions of intertemporal choice. Therefore, we fitted discount functions to the predictions of an attribute-based model, which chooses based on the monetary amounts when their difference exceeds a threshold, but on delays otherwise. The more choices were made on delays, the steeper the discount functions got, indicating higher discounting. Moreover, the higher the threshold, the steeper the discount functions, as the strategy more often proceeds to delays. The results imply that discount functions are sensitive for different thresholds, and that they reflect a strategy's interaction with the environment. Even though discount functions are mute with regard to the cognitive processes underlying intertemporal choice, they can reflect characteristics of these processes.

Strategy shifts in risky choice

Felix Henninger (1, 2), Pascal J. Kieslich (1), & Benjamin E. Hilbig (1)
1: University of Mannheim, Germany; 2: Max Planck Institute for Research on Collective Goods

The current literature separates two distinct approaches to decision making in general, and risky choice in particular: On one hand, multiple-strategy-models assume that decision-makers have a set of strategies at their disposal, from which they select a decision rule in some adaptive manner depending on features of the choice environment. On the other, single-mechanism-models assume that the choice process relies on a single mechanism and remains qualitatively similar across choice situations.

Previous research in risky choice has shown that single-strategy models best capture the choice process overall, but has not yet tested the critical prediction of the multi-strategy framework, namely shifts between strategies.

I will present the initial steps of a programme designed to fill this gap, using an experimental approach to distinguish the competing models. In the absence of a well-developed strategy selection model for risky choice, we use a simulation approach to generate environments between which an adaptive decision maker should switch strategies in order to reach decisions efficiently. We hope that our research programme will shed light on the processes underlying risky decisions, and provide direction for further model-building.

The power of irrelevance! How irrelevant cues influence decisions under uncertainty

Nadine Nett & Christian Frings

Universität Trier

The distractor-response binding effect states (Frings, Rothermund, & Wentura, 2007; Rothermund, Wentura, & De Houwer, 2005) that distractors appearing on a prime display create an association with the particular response given in the prime. This association is retrieved when, in the probe, the distractor is repeated. The retrieved response can be compatible or incompatible to the currently demanded probe response thereby influencing behavior. We analyzed whether such binding effects can influence decision making processes. In particular we tested if the distractor-response binding effect also occurs in binary choice tasks under uncertainty (N = 30). Participants had to decide as fast as possible whether two consecutive, imagined patients suffered from either of two diseases. Each decision was based on two cues; one did not discriminate between the two diseases and the other was either strongly associated or was mildly associated with one of the two diseases varied as a between-subject factor. We found a significant influence of repeating the invalid cue from the first to the second patient on choice behavior. Furthermore, we replicated these findings when we varied the strength of the discriminating cue as within-subject factor. These results are interpreted as evidence for the influence of distractor-response binding on binary choices under uncertainty.

Applied JDM research

Overconfidence and Entrepreneurial choice under Ambiguity

Anisa Shyti

HEC Paris Business School

Entrepreneurship studies have attributed to overconfidence decisions to start a new venture. Many decision situations, through which overconfidence is measured, entail some degrees of uncertainty (e.g., related to own skill or to competition). The aspect of uncertainty is largely ignored in over- confidence studies or entrepreneurial research. Both uncertainty and overconfidence influence individuals' likelihood perceptions. Nevertheless, these two aspects are seldom jointly investigated, and the little evidence provides inconclusive results. In this study, we experimentally investigate how uncertainty, as a property of the situation, and overconfidence, as a characteristic of decision makers' beliefs, influence choice behavior. Our findings with entrepreneurs from the HEC Paris incubator show that overconfident decision makers choose less uncertain options for low-likelihood outcomes and more uncertain options for high likelihood outcomes, contrary to neutral-confidence decision makers, which choices are in line with standard Prospect Theory predictions.

Effect of culture on judgments of dynamic performance

Samantha Sim & Jochen Reb

Singapore Management University

Performance appraisals are used for various important organizational decisions such as whom to promote or terminate. Past research has demonstrated that both performance mean and trend affect summary judgments of performance such that higher means and improving trends are judged more favorably. The present research examines how culture may influence judgments of dynamic performance. In three experiments we manipulated performance trend (flat, linear-improving, linear-deteriorating), performance mean (negative, zero, positive), and performance variation (small, large) within-subjects. In Study 1, we collected data from US and Chinese raters; in Study 2 we primed bicultural Singaporean Chinese with Western or East Asian cultural icons; in Study 3 we primed bicultural Singaporean Chinese with analytic or holistic reasoning style, which has been shown to differ between Western and East Asian cultures. In Study 3 predictions of future performance were also included. Based on cross-

cultural research on perceptions and predictions of change (Ji, Nisbett & Su, 2001), we predicted that Western culture raters would be more strongly influenced by both the performance trend and the performance mean than East Asian culture raters. Results overall supported our prediction. We found a) interaction between raters' culture and performance trend on past performance evaluation; b) interaction between raters' reasoning style and performance mean on prediction of future performance; and c) interaction between raters' reasoning style and performance trend on prediction of future performance.

How executives can (not) decide – a study on perceived challenges and measures in top-management decision making.

Stephan Bedenk & Wolfgang Scholl
Humboldt University Berlin

Strategic projects, such as innovations, are more and more at the core of business activities. Nonetheless they often go along with tremendous financial, personal and technical costs and risks for companies. Executives (CEOs, members of the board), as responsible leaders in their companies, have to take these risks and challenges into account and set adaptive decision making strategies. Even though the impact of executives as major decision makers in economy is widely discussed, only little research has examined how they themselves perceive their role. In particular, only spare research has examined which determinants of uncertainty are mainly identified and which decision making strategies are applied by top-managers. Hence, in one study semi-structured interviews were conducted with 25 executives in a cross-section of German industries and company sizes. All interview material was analyzed by two encoders independently to ensure inter-rater-reliability. Content analyses showed that managers perceived both external and internal determinants of uncertainty that challenge decision making in their companies. Besides from that, individual limitations (mainly: lack of knowledge and lack of time) were mentioned as a main personal challenge in decision making on top-management level. Strategies used to handle decision making under uncertainty and bounded rationality included individual measures as well as decision making strategies on team and organizational level. Perceived determinants of uncertainty as well as applied decision making strategies by top-managers are analyzed in more detail. Moreover, methodological implications for decision making research in applied settings are discussed.

Workshop

Crowdsourcing JDM research on Amazon Mechanical Turk: Opportunities and Threats

Gabriele Paolacci
Rotterdam School of Management, Erasmus University Rotterdam

Using online crowdsourcing services such as Amazon Mechanical Turk, JDM researchers can now recruit hundreds of research participants and collect data in a cheap and timely fashion. I provide an overview of MTurk and highlight some methodological challenges (e.g., participation in multiple related experiments) and opportunities (e.g., longitudinal data collection) that seem to be currently neglected by the research community. By making a good use of some advanced MTurk features, experimenters can minimize the effects of previously ignored drawbacks and expand the scope of crowdsourcing as a tool for JDM research.

Adaptive decision making

Economic agent models from adaptive rationality
Leigh Caldwell
Inon

Mathematical models of markets and economic behaviour are typically based on utility-maximising agents. Some recent work has modified this approach by placing constraints on agents' ability to maximise their utility, such as inconsistent discount rates or imperfect self-control. However, these models still rely on utility (or choice behaviour consistent with a utility function) as their fundamental component.

This talk takes a different starting point. If utility is not used as a criterion at all, agents can instead be viewed as applying frugal heuristics to resolve their needs or achieve their goals. How can these agents be modelled in a way that permits tractable economic analysis?

I outline a model in which agents have a set of arbitrary state variables. Each state variable has a default value; when the variable takes this value, the agent is satisfied (with respect to that variable) and pays no attention to it. When the variable takes (for exogenous or endogenous reason) a different value, the agent may become unsatisfied and seek to restore its default state. It applies a strategy to do so, which has one of three types:

 1. a heuristic of which the agent is not conscious

 2. a conscious process retrieved from memory

 3. a newly invented or discovered process requiring creativity, cognitive effort or external teaching

Processes may change type over time, as the agent gains skill or facility and requires less conscious effort to complete the process.

Using this model I describe consumer behaviour in markets, and offer an explanation of some market phenomena such as the importance of brands, perceptions of fairness and the difficulty of launching new products.

Two frameworks of decision making:
How intruding information helps to distinguish between Single- and Multi-Strategy-Models
Anke Söllner & Arndt Bröder
University of Mannheim

When decision makers are confronted with different problems and situations, do they apply the same uniform mechanism all the time as assumed by Single-Strategy-Models (SSM) or do they choose adaptively from a set of available decision strategies as Multi-Strategy-Models (MSM) imply? Both frameworks for multi-attribute inference tasks have gathered support and can often account for human decision making behavior equally well. Therefore, the challenging question arises, which one of the two frameworks is superior to the other. To tackle this problem, we developed an information intrusion paradigm, that builds on MSM's basic assumption that strategy-irrelevant information will be ignored and SSM's postulation that all available pieces of information are fed into the decision making mechanism. In a learning phase, participants were trained to employ a take-the-best (TTB) strategy. In the subsequent test phase, information search, decision outcomes, and confidence judgments (Experiment 1), or information search, decision outcomes, and attention (Experiment 2) were assessed. The results largely support the SSM view: Participants trained to use TTB do not ignore TTB-irrelevant information, but adapt the amount of information searched, choose alternative choice options, and show different degrees of confidence contingent on the quality of the "irrelevant" information. Participants do not generally attend to strategy-relevant information more than to strategy-irrelevant information. Thus, our findings (1) demonstrate the utility of the novel information intrusion paradigm for contrasting the two frameworks for multi-attribute inference tasks and (2) confirm the predictions of a uniform decision making mechanism as assumed by Single-Strategy-Models.

Probability matching as an optimal choice strategy: The adaptive potential of a classic fallacy

Christin Schulze, Don van Ravenzwaaij, & Ben R. Newell
School of Psychology, University of New South Wales, Sydney

Proportionately matching choices to payoff probabilities (probability matching) is a tendency frequently observed in repeated binary decision tasks. This choice strategy has long been dismissed as a choice anomaly which violates the assumptions of rational choice theory. What seems irrational in the stringent context-free environments of commonly employed experimental decision tasks, however, may have emerged from highly adaptive cognitive functions governing optimal choice behavior in ecologically valid situations.

Following this argument, we examine choice behavior in dynamic probability learning environments that reinforce probability matching as an optimal response. Superiority of matching behavior can, for instance, be attained by defining outcome probabilities contingent on prior decisions, e.g. through transferability of forgone payoffs across trials. Similarly, competition for monetary resources within group settings endorses variable choice behavior and, likewise, renders probability matching optimal. Employing such decision tasks, we regularly observe that responding indeed approaches probability matching accurately. To describe the parameters of choice behavior within these dynamic environments more holistically, we apply computational models of reinforcement learning that aim to illuminate the general adaptability of binary choice behavior under risk and uncertainty.

Probability matching (session cancelled)

Striving for Perfection and Falling Short: The Influence of Goals on Probability Matching (cancelled)

Jie Gao & James Corter
Columbia University

People exhibit probability matching in repeated predictions in at least two types of tasks: 1) "probability learning", in which the probabilities of the binary outcomes are initially unknown, and 2) prediction tasks where the relevant outcome probabilities are known from the outset.

Probability matching is not consistent with normative economic models incorporating the assumption that people tend to make choices that maximize their expected utility. The cause of this "irrational" behavior has been studied by many researchers including both psychologists and economists, and a variety of explanations have been raised: 1) misconceptions of randomness, 2) use of similarity-based heuristics, 3) reinforcement learning, 4) pattern search, 5) dual-systems explanations, and 6) "expectation matching".

We believe that taking account of an individual's goals in decision-making can help explain when and why probability matching occurs. Specifically, we hypothesize that probability-matching in sequential prediction tasks occurs because participants implicitly adopt the unrealistic goal of perfect prediction of sequences. Biases in the understanding of randomness then lead them to generate mixed rather than pure sequences of predictions in attempting to achieve this goal. In study 1, N=350 participants predicted 100 trials of a binary-outcome event. Two factors were manipulated: probability bias (the outcomes were equiprobable or distributed with 75%-25% bias), and goal type, namely whether single-trial predictions or perfect prediction of 4-trial sequences were emphasized and rewarded. As hypothesized, predicting sequences led to more probability matching behavior than predicting single trials, in both the bias and no-bias conditions.

Study 2 manipulated goals more directly. In study 2, all participants (N=300) predicted outcomes for 5-trial sequences, but with different goal levels rewarded: 60%, 80%, or 100% correct predictions. The 100% goal resulted in the most probability matching, as hypothesized. Paradoxically, using the inferior strategy of probability matching may be triggered by adopting an unrealistic perfect-prediction goal.

Preferential choice

Decision Importance Leads to More Deferral

Job M.T. Krijnen, Seger M. Breugelmans, & Marcel Zeelenberg
Tilburg University

We find that important decisions are more likely to be deferred than less important ones. In three online experiments, participants were offered a hypothetical choice between two apartments (NStudy1 = 603; NStudy2=607) or two laptops (NStudy3=300). They could either choose one of the options or look for other options (i.e., defer). We manipulated the length of renting period in Study 1 and 2, and the possibility to return the product in Study 3. When renting period was longer or the laptop could not be returned, the decision was seen as more important and more participants chose to look for other options (ORStudy1 = 2.05; ORStudy2 = 1.91; ORStudy3 = 1.81). Decision importance thus affected choice strategy while characteristics of the options were identical. We aim to conduct follow-up studies with different manipulations of importance and different dependent measures to see when and why this link between decision importance and deferral occurs.

Why the Attraction Effect is Rational

George Farmer (1), Andrew Howes (2), Paul Warren (1), & Wael El-Deredy (1)
1: University of Manchester; 2: University of Birmingham

The attraction effect occurs when a preference for one choice over another is reversed by the addition of an inferior decoy choice. This effect is often taken as evidence that people violate independence of irrelevant alternatives, and therefore that such behaviour is suboptimal or irrational. We argue that the addition of a decoy choice conveys relevant information to a decision maker, such that preference reversals may be utility maximising behaviour. If a decision maker has any noise in the determination of the utility of each option available, there is a demonstrable benefit to taking into account the context of the choice set. Bayesian integration of an independent likelihood estimate for each option together with a prior estimate derived from the overall context, predicts that agents with noisy perception should preference reverse in order to maximise utility.

Risk perception and morality

Imagery, stress, and risk perception: The role of affect-laden imagery in risk perception

Jakub Traczyk, Agata Sobków, & Tomasz Zaleśkiewicz
University of Social Sciences and Humanities. Faculty in Wroclaw

The aim of this study was to provide empirical support for the relationship between the intensity of mental imagery of risk consequences, affect and risk perception.

In each experiment the participants were instructed to imagine consequences of presented risky situations. We found that intensity of mental imagery measured by the attenuation of the EEG alpha band power registered in occipital sites correlated with risk perception and risk taking (Experiment 1). More negative risk-related thoughts led to lower risk assessments and this relationship was fully mediated by stress level associated with risk images (Experiment 2). Imagining negative risk consequences was related to higher blood pressure and stronger self-reported stress level that mediated the relationship between the intensity of mental representation of risk and risk perception (Experiment 3).

We demonstrated that affect-laden imagery might influence risk perception.

Morality within risk perception and the role of fragility of scientific evidence

Claudia Bassarak

University of Lüneburg (Leuphana)

My research deals with the question how risk assessment and moral judgment relate to each other; and if the perception of science plays a moderating role here. The underlying assumption is that if there is more epistemic and scientific information assessable, moral considerations play a larger role in risk perception. I will present and discuss two related studies dealing with the perception of societal risks such as nuclear power, genetic engineering or global warming. First, in a survey, fragility turned out to be a distinct dimension within risk perception. I have proposed the concept of fragility which refers to epistemological uncertainty about scientific evidence. Furthermore, risk turned out to be highly blended with morality. Second, an experimental study manipulating fragility and measuring risk and morality both, explicitly and implicitly (SC-IAT), will be presented. Here, I hope for some feedback on possible further data analysis and further food for thought.

Accounting for proscriptive and prescriptive morality:
Paradoxical influences of incidental emotions on ethical decision making
Laura Noval
Vienna University of Economics and Business

Our paper supports the recently developed intuitionist theories of ethical decision making (Sonenshein, 2007) and gives a start to the scarce research on the role of emotions on ethical behavior (Trevino et al., 2006). Based on well-established theories of the social psychology field, we explore the influence of positive and negative incidental emotions (i.e., mood, emotions incidental to the problem at hand; Pham, 2007) on the way an ethical issue is perceived, and consequently, on ethical behavior.

Our research builds on the affect infusion model (AIM; Forgas, 1995), which posits that incidental emotions influence cognition and behavior by priming mood congruent information in memory and leading to mood congruent (positive or negative) judgment and behavior. We apply the AIM to examine the impact of incidental emotions on the perceived moral intensity of an issue (Jones, 1991). Moral intensity is often regarded to be the most influential model of ethical decision making (O'Fallon & Butterfield, 2005; Kish-Gephart et al., 2010) and it posits that ethical behavior is influenced by characteristics inherent to the moral dilemma, such as magnitude of consequences and probability of effect (Jones, 1991). The intuitionist model of ethical decision-making argues that moral intensity is a cognitive perceptual construct and not an objective construct existing "out there", waiting to be measured (Sonenshein, 2007). In our research, we show that perceptions of moral intensity are influenced by incidental emotions consistent with the tenets of the AIM (Forgas, 1995). Consequently, given the recognized link between moral intensity and ethical behavior (Jones, 1991), we show incidental emotions, mediated by perceptions of moral intensity, influence two types of ethical behavior: behavior with harmful consequences for society (proscriptive immorality) and behavior with beneficial consequences for society (prescriptive morality; Janoff-Bulman et al., 2009; Crilly et al. 2008).

Individual and contextual influences on JDM

When groups perform better than their best individual member?
Prescribed decision strategies for group cognitive synergy
Nicoleta Meslec, Petre L.Curseu, & Marius T.H. Meeus
Tilburg University

In a group decision-making task we investigate the influence of two types of decision strategies upon group's ability to perform better than its average group members (weak cognitive synergy) and the most capable member in the group (strong cognitive synergy). Our results bring evidence for the superiority of the analogical rule (which is based on imitate-the-successful and identify-the-best heuristics) as compared to the collaborative rule (which is based on extensive information search and equal participation of all group members).

Advertising content influece on financial advisors's perception and financial advice
Inga Jonaityte
University of Venice Ca' Foscari

This paper explores how variation in presentation of financial information affects the likelihood of suboptimal financial decision-making by a little understood expert sample – financial advisers.

Focusing on the behavioral differences between expert and naïve subjects this study addresses the following targets: (i) Do financial experts perceive their customers as different from themselves? (ii) Are professionals biased? To what degree are their choices influenced by behavioral biases? (iii) If they are, are they biased in the direction showed by nave subjects? (iv) Is there a correlation between response time and the evaluations? If yes, can it be explained by the dual-system theory?

An experiment involving 621 financial promoters and 573 non-expert subjects show that expertise alone is not enough to prevent biased behavior. The analysis of nearly 1200 responses suggest that that experts (when compared to themselves) believe their customers to have significantly (i) higher willingness to invest in the product or the fund, (ii) higher propensity to recommend the product or the fund to others, (iii) higher willingness to invest in the risky option over the safe one, (iv) higher trustworthiness rating of the adviser promoting such investment options. Experts show superior ability to estimate the actual preference ratings reported by the naïve subjects. The issue of perceived trust-in-honesty and trust-in-competence to advice is significantly correlated with an individual's willingness to invest in a fund or an asset suggesting that selective use of interpersonal-cues may induce trust-related biases and shift experts' judgment.

This research provides valuable insights for future in depth research on the role of expert advice in context of financial choice.

Individual differences in intuitive abilities
Agata Sobków & Czesław Nosal
University of Social Sciences and Humanities, Faculty in Wroclaw

The aim of the present study was to develop a set of cognitive tasks that measure individual differences in intuitive abilities and to investigate their relationships with cognitive styles. This set contains three tasks: Artificial Grammar Learning (designed to measure implicit learning), task inspired by Westcott's Test of Intuitive Ability (in which participants had to recognize pictures covered by a matrix of black squares using as less cues as possible) & Remote Associates Test (task used in insight research, in which participant had to find one word associated with three others, i.e. playing, credit, report - solution card). Additionally, two measures of cognitive styles were used: Myers–Briggs Type Indicator and Questionnaire of Cognitive Styles. Results suggested two-factor structure of intuitive

abilities (first associated with insight and self-reports, second with implicit learning). Moreover, intuitive abilities were associated with Mind Openness, Verbal Skills, Depth of processing and Tolerance of Uncertainty.

Memory processes in decision making

Serial Position Effects in Preference Construction
Emina Canic & Thorsten Pachur
University of Warwick ; Max Planck Insitute for Human Development, ARC

Which item in a sequence has the most advantage? Recently, a study has shown that serial position effects affect people's preferences (Mantonakis, Rodero, Lesschaeve, & Hastie, 2009). Mantonakis et al. demonstrated that items presented in the beginning and in the end of a sequence were preferred over items presented in-between, showing a primacy and a recency effect in preference construction. The authors proposed a model that explains the primacy effect with a first-is-best bias and the recency effect with a bias in favor of each new item in the sequence. Yet, it is questionable if these effects are stable even if the items differ regarding their quality. A simulation investigating the effect of probability inertia, namely to stick to the current favorite, and the impact of differences in quality, shows interesting effects: Primacy and recency effects only occur with intermediate inertia levels. Secondly, assigning certain qualities to the different items yields interaction effects: When inertia is low order effects disappear completely, whereas when inertia is high, assigning quality differences to the attributes does not affect order effects in preference.

The role of memory processes in use of the recognition heuristic
Marta Castela
University of Mannheim

The recognition heuristic (RH) states that when judging which of two objects scores higher on a criterion, if one is recognized and the other is not, choice will lie on the recognized object. The original RH considers recognition as an all-or-none process, and assumes that the binary yes/no judgment determines the inference whenever recognition is valid. Recently, it has been proposed that the memory states underlying the binary recognition judgment may influence reliance on the recognition cue. This framework - the Memory State Heuristic - extends the RH by assuming a third memory state beyond recognition and rejection, the uncertainty state. This leads to the prediction that not all recognition cases will be treated alike. However, with the usual paradigm of the RH, it is not possible to assess memory states because there is no access to the true nature of the objects (experienced vs. not experienced). Trying to overcome this limitation, I recently re-analyzed data of an application of the RH paradigm that was repeated two times. Since recognition status is evaluated twice by each participant, I can assess its consistency. Assuming that judgments for items in certainty states should be consistent, while for items in the uncertainty state they should vary, I observed that preference for the recognized object is higher when recognition stems from certainty. However, two immediate limitations are that those certainty cases might contain yes-yes or no-no guesses and that repetition might boost familiarity with all objects. Currently, I am working on two approaches for those problems: 1) repeating the recognition task three times and trying to control for the increase in familiarity; 2) developing a multinomial processing tree model that accounts for consistent guesses. Successfully following these approaches will allow a better understanding of the role of memory processes in use of the RH.

Age differences in memory based decision making
Anika Josef, Rui Mata, Thorsten Pachur, & Ralph Hertwig
Max Planck Institute for Human Development, ARC

Memory ability is essential for successful decision making in many everyday situations that involve options not currently available for evaluation. In such situations, binding single cue information to decision alternatives and

retrieving these complex memories from long-term memory might be crucial processes in determining decision success.

Age-related cognitive decline in episodic memory due to disruption of medial-temporal, hippocampal, and frontal regions may decrease associative binding and retrieval. Therefore, age-differences in decision performance should be larger when memory demand increases. As a result, increased memory demand may foster the selection of simpler decision strategies that reduce cognitive load or errors in the application of strategies requiring considerable cognitive control.

We present results of two studies that asked younger and older adults to make decisions in two conditions varying in their memory demand. More specifically, participants were asked to engage in a simulated personnel selection scenario, in which they had to decide which candidate would be best suited for a job given a number of previously learned attributes when either none (high-memory-demand condition) or a few pieces of information (low-memory-demand condition) about the candidates were presented on the screen. The results of our first study support the hypothesis that age-differences in decision performance increase as a function of memory demand of the decision situation. Our second follow-up study assesses how strategy selection contributes to age differences in decision performance. Finally, we will discuss a future project aiming to assess how age-differences in strategy application can additionally contribute to performance differences between young and older adults in decisions from memory.

Workshop

Psychologists are open to change and should adopt Bayesian statistics
Mirjam Jenny & Stefan Herzog
Max Planck Institute for Human Development, ARC

Both the recent scandals and the renewed discussion of methodological problems in psychology make it clear that behavioral scientists need to change the way they conduct, analyze and report their research. This workshop starts with an overview of the current debate and discusses a survey documenting the current opinions among psychological researchers. The second part of the workshop focuses on the role of statistical inference in improving research practice. Researchers collect data to compare the plausibility of competing hypotheses in light of that data. Classical statistics, however, as exemplified by the notorious and ubiquitous p-value, does not provide us with the probability of a hypothesis: The p-value merely gives us the probability of observed (or more extreme) data assuming the null hypothesis to be true. In contrast, Bayesian statistics tells us what we really want to know: The probability of a hypothesis after having seen the data. We argue that switching from classical, frequentist statistics to Bayesian statistics can overcome some of the problems identified in the current debate on the research practices. The second part of the workshop is structured as follows: First, Bayesian statistics is introduced. Second, some problems and absurdities of classical statistics are illustrated that show why we should abandon classical statistics. Finally, participants will conduct Bayesian analyses on their own laptops and thus experience that doing Bayesian statistics is feasible and that they therefore can replace classical statistics with Bayesian statistics.

The complaint bias in subjective evaluations of incentives
Eldad Yechiam, Ariel Telpaz, & Guy Hochman (presented by 2nd author)
Technion, Israel Institute of Technology

Loss aversion, the standard model for understanding the effect of losses, suggests that losses result in more extreme feelings, and this leads to overweighting losses in behavioral decisions. In two experiments, we question this model by examining rated feelings during experience-based decisions. In Experiment 1 participants performed two decision problems involving equiprobable gains and losses. In both problems, participants reported more extreme feelings for losses than for equivalent gains. For example, the feelings associated with a loss of 5 tokens were on average 2.6 times more extreme (i.e., distant from the scale's midpoint) than the feelings for a gain of 5 tokens. At the same time, however, these extreme ratings were not associated with behavioral loss aversion. In Experiment 2 we used a mock polygraph setting to examine the underlying source of this bias. The inclination to report more extreme feelings for losses was practically eliminated when participants were incentivized to give truthful reports. The results are interpreted as reflecting a tendency to complain about losses and to minimize praise of gains which is independent from the actual weighting of losses and gains.

Investing Amid Uncertainty: A Test of the Domain Specific Anchoring Hypothesis
Hui Yih Chai & Ben R. Newell
University of New South Wales

The current study examined reactions to the precision of earnings' forecasts in hypothetical investment decisions. In a forced choice task, participants were found to be indifferent between point (e.g., $2) or range (e.g., $1.70-$2.30) forecast formats when both outcomes were favorable (i.e., above market expectation). When the outcomes were unfavorable (below expectation), participants' preferences were significantly biased towards range estimates. When faced with options which mixed forecast formats and favorability, participants almost always opted for forecasts with a favorable outlook regardless of format. These results are inconsistent with domain specific ambiguity reactions found previously (Du, 2009) and also offer no support for the domain specific anchoring hypothesis (e.g. Du, 2009; Du & Budescu, 2005). These findings raise some doubts about the generality of domain specific reactions to uncertainty and suggest that such effects might be dependent, in part, on the (financial) sophistication of participants.

The role of actively open-minded thinking in information acquisition, accuracy, and calibration
Uriel Haran (1), Ilana Ritov (2), & Barbara Mellers (3)
1: Ben-Gurion University; 2: Hebrew University; 3: University of Pennsylvania

Errors in forecasting are often blamed on people's tendency to focus on an initial belief and ignore new information. Acquiring more information may then be central to high-quality forecasting. We tested various individual attributes as predictors of this tendency and of estimate performance. We focused on four attributes: 1) Actively open-minded thinking (AOT) – the propensity to consider others' opinions and weigh new evidence against a favored belief; 2) Need for cognition – the tendency to engage in effortful cognitive endeavors; 3) Grit –perseverance and passion for long-term goals; 4) Maximizing vs. satisficing. We tested the relationships between these attributes and performance on categorical and quantitative estimates.

In Study 1, participants observed randomly-placed objects, presented for 4 seconds each time. They acquired information by viewing the objects as many times as they wanted before proceeding. Then, they estimated the most prevalent object type and the total number of objects, and completed a battery of individual-difference questionnaires. AOT was the only significant predictor of estimate performance, and information acquisition mediated this relationship. When we fixed the amount of information given in study 2, the effect of AOT on performance was

eliminated, further demonstrating the mediating role of information acquisition in the AOT-performance relationship.

Study 3 included predicting football scores. Participants acquired pre-game information by requesting facts about each team's past performance. Again, AOT predicted information acquisition, but this tendency improved predictions only in games where the better team won. Conversely, when the inferior team won, more pre-game information misled participants and hurt their accuracy. Consequently, high AOT individuals were outperformed by low AOT individuals in these games.

In sum, we found that actively open-minded thinking is a strong predictor of information acquisition and forecasting performance. To the degree that this skill can be taught, these results provide an opportunity for improving forecasters' abilities.

About the workshop

Where is the workshop?
The workshop will take place at the Max Planck Institute for Human Development at Lentzeallee 94, 12161 Berlin (http://goo.gl/maps/ZU1yb). The closest underground (U-Bahn) station is Breitenbachplatz off of the U3 U-Bahn line. Enter the institute through the main entrance (right off Lentzeallee) and will find our workshop next to the reception area.

What is the Facebook Group?
For up-to-date information about the workshop, and to connect with other workshop attendees (perhaps to find roommates!), find us at the Facebook group "MPIB JDM Workshop 2013" If you'd like to join, email us and we'll send you an invite.

Talks and workshops
This year's program will be comprised of both long and short oral presentations as well as workshops held by experts in our field. There are two types of talks: 'Blitz' talks (BTs, 5 min presentation plus 5 min discussion) and extended talks (ETs, 15 min presentation + 15 min discussion). We will provide notebooks on which you can put your presentation during the breaks. Please make sure everything is working as you expected. Workshops will take 1.5 hours.

Session chairs
As usual, the chairs introduce the speakers shortly, moderate the discussion after the talks, eventually ask some first questions, and strictly reinforce the time limit.

Internet access
We will provide access to the internet via WiFi.

> SSID: MPIB-GUEST
>
> Login: MPIB-GUEST
>
> Pass: minerva!

Costs and participation certificate
This year, we were fortunate to receive a grant from the European Association of Decision Making (EADM) that will cover most of the costs associated with the workshop. This allows us to invite several distinguished speakers and provide refreshments for all participants during the breaks. As part of our funding agreement, student members of EADM will not be asked to pay any registration fee. For non-EADM members, there *may* be small fee for the workshop (certainly less than 20€, as it looks like none). At the end of the workshop you will receive a certificate of attendance including a receipt for any potential fees.

Travel information

Where should you stay?

The MPI is next to the Breitenbachplatz station on the U3 line. The U1 line takes you into trendy areas of Berlin such as Kreuzberg, so we recommend finding a place next to stations Nollendorfplatz, Wittenbergplatz, and maybe Ausbergerstrasse (http://goo.gl/maps/850gD), which all lie on the U3 line and are either on (or are close to) the U1 line. Keep in mind that Berlin is fairly large and the MPI is located in the far Southwest corner of the city between the districts Dahlem and Wilmdersdorf. When you are searching for rooms, keep in mind how far they are away from the MPI by U-Bahn! However, if you don't mind spending 25 to 40 minutes on the U-Bahn in the mornings and evenings, you can get to the MPI via U-Bahn easily from almost anywhere in Berlin.

We have selected a few nice and interesting places around Nollendorfplatz and Wittenbergplatz in case you want to go by recommendation:

- Hotel zu Hause:
  http://www.hotelzuhauseberlin.de/index-en.php

- ArtHotelConnection:
  http://www.arthotel-connection.de/rooms.html

- Hotel Berlin, Berlin:
  http://www.hotel-berlin.de/en/hotel-berlin.html

However, there are many nice places to stay in Berlin, so feel free to check out other hotels, hostels, and areas of the city. You can also of course search for other hostels at websites such as http://www.hostelbookers.com/and http://www.hostelworld.com/.

We also highly recommend room and flat sharing websites such as www.couchsurfing.com and www.airbnb.com! We're sure that if 2 to 5 people get together and rent an entire flat via www.airbnb.com, you won't spend much money and have a great time!

Getting Around Berlin

Berlin provides a excellent public transportation system (a map is available at http://www.bvg.de/index.php/en/binaries/asset/download/58161/file/1-1). The Berlin underground (U-Bahn) combined with the above ground trains (S-Bahn), and the busses will get you anywhere you need to go. During rush hour, the trains run at 3 or 5 minute intervals.

Here is a description of the three different types of train tickets you will want to buy when you are in Berlin. As long as you stay in Berlin, you'll always want to get the ticket for zones A and B. Keep in mind that you must validate your tickets in a validation machine before getting on the train or it will not be valid! The one exception is busses where you can validate on the bus.

- Individual Ticket: An individual ticket costs 2.40€. This lasts for 2 hours as long as you're going in the same direction. If you turn around and go the other way, you need to buy another ticket!

- 4-trip Ticket: You can also by a 4-trip ticket for 8.40€. If you do this, you will get 4 printed tickets. Each ticket works just like an individual ticket. When you are ready to use one, just validate it.

- Day ticket: You can buy a 24-hour ticket for 6.50€. If you plan to take 3 or more rides in a day, it is worth getting the 24-hour day ticket (or a 4-trip ticket)

You'll receive one free 4-trip ticket on the first day of the workshop!

How to get to the MPI?

Address

Max Planck Institute for
Human Development
Lentzeallee 94
14195 Berlin

Underground

From Underground Station (U-Bahnhof) "Breitenbachplatz" leave the station in driving-direction, exit to the right and follow the Schorlemerallee for approximately 150m. Take a right on Spilstrasse and follow the road until you cross the Lentzeallee, where you turn left. Follow for about 100 meters and find the Max Planck Institute to your right.

Plane

From Airport "Tegel" with the bus 109 (in the direction of "Zoologischer Garten") to "Jakob-Kaiser-Platz". There, transfer to the subway line 7 (U7 in the direction of "Rudow") to "Fehrbelliner Platz". There, transfer to the subway line 3 (U3 in the direction of "Krumme Lanke") and get off at "Breitenbachplatz" (see "From Underground Station Breitenbachplatz").

From Airport "Berlin-Schönefeld" with Bus 171 to underground station "Rudow". Here switch to U7 (direction "Rathaus Spandau"). Get off at "Fehrbelliner Platz" and switch trains to U3 (direction "Krumme Lanke"). Get off at "Breitenbachplatz" (see "From Underground Station 'Breitenbachplatz'").

Train

From Main Station ("Hauptbahnhof"/"Lehrter Bahnhof") with the S7 (direction "Potsdam") until "Zoologischer Garten". Take the subway line 9 (U9 direction "Rathaus Steglitz") to "Spichernstraße". Get off at "Spichernstraße"

and switch trains to U3 (direction "Krumme Lanke"). Get off at "Breitenbachplatz" (see "From Underground Station 'Breitenbachplatz'").

From Train Station (Bahnhof) "Südkreuz" (selected trains only) with the S41 to "Heidelberger Platz". Take the subway line 3 (U3 direction "Krumme Lanke") to "Breitenbachplatz" (see "From Underground Station 'Breitenbachplatz'").

Bus

By bus from the Central Bus Station (Zentraler Omnibusbahnhof (ZOB)). Take the bus M49 and get off at station (S-Bahnhof) "Messe Nord/ICC". From there take the train S42 (Ringbahn) to "Heidelberger Platz". Take subway line 3 (U3 direction "Krumme Lanke") to "Breitenbachplatz" (see "From Train Station 'Breitenbachplatz'").

Car

By car coming from the south via Autobahn A 115 in direction "Berlin-Charlottenburg"; from the north via Autobahn A 111 in direction "Berlin-Zentrum/Berlin-Reinickendorf". At the junction "Autobahndreieck Funkturm" change onto the A100. Follow the A100. Leave A100 at the junction "Autobahnkreuz Wilmersdorf" in direction "Schmargendorf" and join exit "Steglitz". Leave exit "Steglitz" and head straightforward onto Bab-Tunnel "Schlangenbader Straße", exit "Steglitz". Leave Bab-Tunnel "Schlangenbader Straße", exit "Steglitz" and head straightforward onto Dillenburger Straße. Leave Dillenburger Straße and turn right into Lentzeallee.

Thanks

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