



Southern Ontario Behavioural Decision Research Conference

**April 29, 2005
University of Waterloo**



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Department of Psychology and Faculty of Arts, University of Waterloo**

Southern Ontario Behavioural Decision Research Conference

Schedule of Events

10:00 - 10:30:	Breakfast / welcome	Lounge (PAS 3005)
10:30 - 12:00:	Session A	Seminar room (PAS 3026)
12:00 - 1:30:	Lunch	Lounge (PAS 3005)
1:30 - 3:00:	Session B	Seminar room (PAS 3026)
3:00 - 3:30:	Coffee break	Lounge (PAS 3005)
3:30 - 5:00:	Session C	Seminar room (PAS 3026)
5:00 - 6:00:	Poster session w/ cash bar	Lounge (PAS 3005)

Overview of Sessions

Session A: Heuristics and Rules

Åstebro: The Effectiveness of Simple Decision Heuristics

Brooks: Perceptual Specificity and the Use of Rules

Bryant: Fast and Frugal Heuristics for Threat Assessment

Soman: The Duration Heuristic: WTP for a Service Depends on How Long it Lasts

Session B: Risk and Uncertainty

Mandel: Forecasting the Risk of a Terrorist Attack: Effects of Unpacking and Refocusing

Kotchetova: Frequency Response Mode and Case Context in Auditors' Probabilistic Judgment

Koehler: Calibration of Experience-Based Probability and Pricing Judgments

Duncan: A Signal Detection Model of Eye Witness Identification

Session C: Social Influences and Habit

Smith: The Influence of Pre- versus Post-Decisional Advice

Buehler: Collaborative Planning and Prediction

Aggarwal: When Losses Loom Even Larger: The Moderating Role of Relationship Norms

Murray: Explaining Cognitive Lock-In: The Effect of Skill Acquisition on Human Decision Making

Poster Session:

Adomdza: Inventor Perseverance After Being Told to Quit

Hui: From Observations, to Types, to Utility Functions

Lam: Cultural Differences in Affective Forecasting: The Role of Focalism

Li : Is It the Luxury Car or the Super Model that Tempts Him? Possibility of Misattributed Desires

Liu: Utility Blindness: Why Do We Fall For The Deal?

No: Understanding Internet Privacy in Customer Perspective

White: Comparing Binary and Continuous Responses in Multiple-Cue Probability Learning

Zhang & Dempsey: Sports and the City – Consumer Relationships with Sports Teams

Session A Abstracts

The Effectiveness of Simple Decision Heuristics: Forecasting Commercial Success for Early-Stage Ventures

Thomas Åstebro, Rotman School of Management, University of Toronto

We investigate the decision heuristics used by experts to forecast that early-stage ventures are subsequently commercialized. Experts evaluate 37 project characteristics and subjectively combine data on all cues by examining both critical flaws as well as positive factors to arrive at a forecast. A conjunctive model is used to describe their process, which sums “good” and “bad” cue counts separately. This model achieves a 91.8% forecasting accuracy of the experts’ correct forecasts. The model correctly predicts 86.0% of outcomes in out-of-sample, out-of-time tests. Results indicate that reasonably simple decision heuristics can perform well in a natural and very difficult decision-making context.

Perceptual specificity and the use of rules

Lee Brooks, Department of Psychology, McMaster University
(co-authored with Samuel Hannah)

The classification “rules” provided in medical and everyday discourse are usually grossly deficient by formal standards. They typically contain no decision procedure and use terms so broadly defined they include many inappropriate items. We argue that a central function of such weak rules is to direct attention in order to facilitate perceptual learning, which makes these rules useful in formal education. To model this and other categorization phenomena, features must be represented on two levels, here called informational and instantiated. These two levels are crucial to model acceptable communication, broad generalization and accommodating to the peculiarities of a complex world.

Fast and Frugal Heuristics for Threat Assessment

David J. Bryant, Defence Research & Development Canada - Toronto

Research investigated the applicability of the Fast and Frugal Heuristic framework (Gigerenzer, Todd, & The ABC Group, 2000) to the classification of sensor contacts in a simulated naval warfare environment (“threat assessment”). Participants learned to classify sensor contacts as friend or foe on the basis of probabilistic cues. Participants then performed a test session in which they chose which cues to inspect before classifying a contact. The patterns of participants’ cue selections and their threat classification judgments provided evidence of use of both compensatory and non-compensatory heuristics by participants.

The Duration Heuristic: WTP for a service depends on how long it lasts

Dilip Soman, Rotman School of Management, University of Toronto
(co-authored with Catherine Yeung)

In this research, we show that consumers use the time duration of a service to assess quality of, and hence as a basis for judging the price charged for this service. We show in several experiments that consumers evaluate a price for a service as more (less) reasonable when the time duration of this service is longer (shorter). This is true even when time duration is unrelated to the actual content of the service. In subsequent experiments, we show that the effect of time on price judgments is moderated when the relationship between time duration and price in the service episode become less obvious.

Session B Abstracts

Forecasting the Risk of a Terrorist Attack: Effects of Unpacking and Refocusing

David R. Mandel, Defence Research & Development Canada - Toronto

This paper examined violations of coherence in forecasting the risk of a terrorist attack. In Experiments 1a and 1b, unpacking the risk of attack into Al-Qaeda or non-Al-Qaeda sources produced an increase in assessed risk (the unpacking effect), and deriving risk forecasts of attack by subtracting the probability of no attack from unity produced an even greater inflation of assessed risk (the refocusing effect). Experiments 2 and 3 revealed that the refocusing effect is due to a misapplication of, rather than a fundamental misunderstanding of, the additivity principle. Violations of extensional forecasting across timeframes were also documented.

Frequency Response Mode and Case Context in Auditors' Probabilistic Judgment

Natalia V. Kotchetova, School of Accountancy, University of Waterloo
(co-authored with William F. Messier, Jr. and Aasmund Eilifsen)

This study investigates how the response format of base rate information impacts the proximity of auditors' fraud likelihood assessments to base rates and to Bayesian computations. We find that the argument by Gigerenzer and colleagues about the frequentist nature of human statistical intuition has some merit for judgments made by professional auditors. Fraud likelihood assessments became more sensitive to base rates when auditors were supplied with case information in frequency format. We also find that accounting students did not exhibit under-utilization of base rates as did auditors, and their judgments, unlike auditors', were unaffected by the context of the experimental problem.

Calibration of Experience-Based Probability and Pricing Judgments

Derek J. Koehler, Department of Psychology, University of Waterloo
(co-authored with Lyle Brenner and Dale Griffin)

In a simulated stock market environment, participants viewed financial indicators for various companies and were informed of subsequent changes in their stock prices. Participants either judged the probability of a stock price increase, or set a price on an asset whose value was contingent on a stock price increase. Both probability and pricing judgments were largely determined by the characteristics of the company under evaluation (case-based information) and were largely insensitive to characteristics of the broader market to which the company belonged (class-based information), resulting in predictable patterns of miscalibration that were not eliminated with experience in the market.

A Signal Detection Model of Eye Witness Identification

Matthew Duncan, Defence Research & Development Canada - Toronto

Procedurally, an eye witness identification task is a case of uncertain detection plus identification. Although much has been done experimentally to examine the effect of various pre-test factors, development of mathematical models has been noticeably absent. This is unfortunate because the nature of the eye witness identification task is one in which sensitivity and bias are confounded. A detection plus identification SDT model was developed and fit to data from a number of experiments. A variety of detection and identification decision rules were assessed and the fit of the model was compared to a recent process model proposed by Clark (2003).

Session C Abstracts

The influence of Pre- versus Post-Decisional Advice

David Smith, Defence Research & Development Canada - Toronto
(co-authored with Joseph V. Baranski, Matthew Duncan, and David Mandel)

The use of advice depends on a number of factors including, the confidence the decision-maker (DM) has in the advisor, the confidence the DM has in their initial decision, and the relationship between the DM's initial decision and the advisors advice. We report an experiment examining how novices make judgments in a naval air threat assessment simulation. We manipulated whether advice is given before or after the participant's initial decision. Our preliminary results replicate previous findings but also demonstrate that advice given after the participant's initial decision has a stronger impact than advice given before the initial decision.

Collaborative Planning and Prediction: Does Group Discussion affect Optimistic Biases in Time Estimation?

Roger Buehler, Department of Psychology, Wilfrid Laurier University
(co-authored with Deanna Messervey and Dale Griffin)

Previous research indicates that individuals commonly display an optimistic bias in their task completion predictions. The current studies extend this research to include group tasks and predictions generated through discussion. Participants predicted—individually and collaboratively—when they would complete upcoming group projects and their actual completion times were assessed. Results supported three hypotheses: that people underestimate completion times for group projects, that predictions based on group discussion are more optimistic than individual predictions, and that effects of group discussion are mediated by a selective focus on planning for success. Implications for planning and forecasting within organizational contexts are discussed.

When Losses Loom Even Larger: The Moderating Role of Relationship Norms

Pankaj Aggarwal, Rotman School of Management, University of Toronto
(co-authored with Meng Zhang)

People are said to be loss averse when their pain of losing something exceeds their joy of gaining it. This research proposes a moderator of loss aversion: the type of relationship norms salient at the time the loss or gain is experienced. We suggest that norms of communal relationship (based on concern for the partner) relative to an exchange relationship (based on quid pro quo) lead to stronger loss aversion. Relationship norms were measured and manipulated across three studies that use the typical endowment effect and a more direct measure of loss aversion to provide support for the thesis.

Explaining Cognitive Lock-In: The Effect of Skill Acquisition on Human Decision Making

Kyle Murray, Ivey School of Business, University of Western Ontario
(co-authored with Gerald Häubl and Eric Johnson)

This research examines the role of skill-based habits of use in human decision making. We conceptualize such habits as a class of goal-activated, automated behaviors that develop as people acquire skill through repeated experience. We argue that as such habits develop people become less willing to try new approaches to completing the same task, which leads to a strong form of loyalty known as "cognitive lock-in". In a series of experiments, we explore the underlying psychological mechanism, some of the boundary conditions on its development, and the degree to which the drivers of this decision making process are consciously available to the decision maker.

Poster Session Abstracts

Inventor Perseverance After Being Told to Quit: The Role of Overconfidence and Optimism

Gordon Adomdza, Department of Management Sciences, University of Waterloo
(co-authored with Scott Jeffrey and Thomas Åstebro)

The Canadian Innovation Center offers advice to independent inventors regarding the commercial prospects of their inventions. We find that while most inventors told to cease effort do, many continue spending time and money on projects with little prospect for commercial success. Using a survey of 780 independent inventors, we analyze the role of overconfidence and optimism in the decision to continue. We find that optimism plays an important role in the decision to continue but not overconfidence. Optimists were more likely to spend and did spend increased proportions after receiving advice. We also found interesting results for experience and wealth.

From Observations, to Types, to Utility Functions

Bowen Hui, Department of Computer Science, University of Toronto
(co-authored with Craig Boutilier)

This work describes the methodology in developing a model of a computer user based on behavioural observations. We adopt dynamic Bayesian networks to formulate the causal relationships between observed behaviour and user characteristics that are relevant to accepting automated assistance. The system infers the user's type and predicts the probability of accepting help. The system chooses the action with the maximum expected utility. To compute this value, we define a utility function that captures the variance in perceived rewards for automated help by different user types. In the future, we plan to learn the user's utility function.

Cultural Differences in Affective Forecasting: The Role of Focalism

Kent C.H. Lam, Department of Psychology, Wilfrid Laurier University
(co-authored with Roger Buehler, Cathy McFarland, Michael Ross, & Irene Cheung)

The "impact bias" in affective forecasting - a tendency to overestimate the emotional consequences of future events - may not be a universal phenomenon. This prediction bias stems from a cognitive process known as focalism, whereby predictors focus attention narrowly on the upcoming target event. Two studies supported the hypothesis that East Asians, who tend to think more holistically than Westerners, would be less susceptible to focalism and consequently to the impact bias. In Studies 1 and 2, Euro-Canadians exhibited the impact bias for positive future events whereas East Asians did not. A thought focus measure indicated that the cultural difference in prediction was mediated by the extent to which participants focused on the target event (i.e., focalism).

Is It the Luxury Car or the Super Model that Tempts Him? The Possibility of Misattributed Desires

Xiuping Li, Rotman School of Management, University of Toronto

Research in consumer impulsivity has documented the effect of hedonic stimuli (e.g., dessert) on related behaviors (eating). We extend this line of research in the direction of whether the induced craving towards one hedonic stimulus category (dessert) can be carried over (or misattributed) to inter-temporal choices in ostensibly unrelated behavioral domains (investing). In a series of experiments, we found that cues of hedonic stimuli (pictures or scents) led to (1) more choices of vices, (2) impatience in waiting for larger monetary gains, and (3) unplanned purchases.

Poster Session Abstracts (continued)

Utility Blindness: Why Do We Fall For The Deal?

Maggie Wenjing Liu, Rotman School of Management, University of Toronto
(co-authored with Dilip Soman)

Utility blindness refers to the phenomena that under limited information processing, consumers would base their purchase decision solely on transaction utility (gains from the deal) rather than total utility. When the deal is attractive enough, people would buy the products even though the total utility is negative; on the other hand, an unattractive deal might decrease people's purchase likelihood when the total utility is unaffected by the promotion. Two studies provided evidence for the existence of utility blindness, with information processing focus as the underlying mechanism and cognitive load as one moderator.

Understanding Internet Privacy in Customer Perspective: An Empirical Investigation of Consumer Concerns, Attitude, Intention, and Privacy Behaviour

Won Gyun No, Department of Management Sciences, University of Waterloo
(co-authored with R.Rangaraja Sundarraj & Efrim Boritz)

This study tries to explain how Internet privacy influences customers' privacy behaviour. A comprehensive theory-based conceptual framework is proposed to address what factors influence customers' privacy concerns, which in turn affects attitude, intention, and finally behaviour. The framework is developed to provide an understanding of individual behaviour related to Internet privacy as well as to permit the prediction of privacy behaviour in certain situations. Therefore, the study will contribute to our understanding the relationship between customers' privacy concerns and behaviour, and thus provide a basic for identifying strategies which can reduce customers' privacy concerns and as well as their behaviour.

Comparing Binary and Continuous Responses in Multiple-Cue Probability Learning

Chris White, Department of Psychology, University of Waterloo
(co-authored with Derek Koehler)

In three experiments involving a multiple-cue probability learning task, participants learned to use four discrete symptoms (i.e., cues) to judge the likelihood of a hypothetical patient having each of two possible diseases. Participants either gave binary responses (i.e., diagnosed which disease each patient had) or continuous responses (i.e., judged the probability or relative frequency of each patient having a designated disease). We offer extensions to response decomposition methods and use these to assess how the binary and continuous responses differ. Whether different judgment processes must be invoked to explain the observed differences between binary and continuous responses is discussed.

Sports and the City – Consumer Relationships with Sports Teams

Meng Zhang and **Melanie Dempsey**, Rotman School of Management, University of Toronto

With the recent introduction of relationship theory in consumer behaviour we explore whether a brand can serve as an active relationship partner for sports fans. Using a qualitative approach based on in-depth interviews and participant-selected images, we find that the simple communal/exchange dichotomy does not capture the variety of relationships that sports fans form with their team. We identify five types of relationships – self-expressive, assimilating, maximizing, temporary goal-satisfying and social following. Each relationship type differentially influences fans' behaviour such as brand commitment (affective, normative and continuance), emotional attachment, long-term and short-term behavioural tendencies, and reactions to brand transgressions.

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