Abstracts

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TOWARDS A MODEL OF RISKY DECISION MAKING: THE RISK MANAGEMENT DECISION MODEL

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The paper presents the Risk Management Decision Model (RMDM) which integrates the results of our research group. In a nutshell, the model supposes that first the most promising one is selected from the set of all available alternatives, focusing primarily on positive outcomes. Then the decision maker inspects the promising alternative in detail. If a negative outcome is detected with the promising alternative, decision makers minimize the risk, either actively with an RDO or passively applying a heuristic like Maximin.

The main characteristics distinguishing the RMDM from other risky decision models are:
1 the pursuit of *two* goals in the decision process: choosing an attractive alternative – minimize risk,
2 *active* risk management with RDOs,
3 dynamic representation of alternatives as mental causal model

Apart from these main characteristics, the model shares many components with other theories and is compatible with many others. Examples are the incorporation of heuristics like, e.g., Maximin or Least Probable Negative, emotional influences or different value functions for positive and negative outcomes in respect to a reference point. The RMDM also can be integrated in general decision frameworks like, for example, Svenson's Differentiation and Consolidation theory. These and further relations to other models are discussed, and I look forward to the comments of our group.

THE PROCESS OF MAKING BIASED JUDGMENTS OF COLLISION SPEED IF A CAR IS DRIVEN TOO FAST AND CANNOT BE STOPPED IN TIME

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The purpose of speed limits is to slow down driving speed to give drivers time for paying attention to relevant information and timely execution of maneuvers so that the car can be stopped in time or in other ways driven in a safe way. If a driver violates a speed limit or drives too fast she or he will not be able to stop as quickly as from a slower speed. We asked participants to imagine that she or he had driven a car outside school at a speed of 30 km/h and suddenly a child had rushed into the street. From this speed it was possible to stop the car just in front of the child after braking as quickly and forcefully as possible. We then asked the participants to imagine that they drove down the same street at 50 km/h and the child appeared at the same place as before, at what speed would the car hit the child if they braked in the same way as before? This kind of problems was presented to the participants. Earlier studies have shown that the judged speeds of collision were underestimated and we wanted to understand why. To this end we asked participants to think aloud while they solved braking problems. In EGPROC we want to discuss the process measures we collected and to have your comments on the way we plan and are analyzing the data.

COMMITMENT, SUNK COST AND THE INVESTMENT IN A FAILING COURSE OF ACTION

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In spite of a large body of empirical findings regarding escalation behavior, the underlying psychological processes are not yet fully understood. Therefore, classical escalation research is sometimes criticized as „main effect" research, in which the decision is manipulated, and the investment behavior is measured as the dependent variable.

In order to target the underlying psychological processes, we first tested if the impact of sunk costs on investment behavior was moderated by the decision for a project.

64 students (age: M = 22, SD = 4.5, f = 54, m = 1) were presented with a variation of the Adams & Smith scenario. One group chose a project, while the other group was told that the choice had been made by a superior. Then all participants received negative feedback, however, the groups were differentiated in regard of the amount of money already invested in the project.

We found the assumed moderation effect. Specifically, while in the group without decision the investment behavior significantly differed between the low and the high sunk cost condition (d = .83), no difference was found in the decision group (d = .08).

In the next step, we plan to trace the psychological processes underlying these findings. Therefore, we want to discuss how to measure commitment, and or preferences, and invite suggestions for process tracing.

PREDECISIONAL INFORMATION SEARCHING WHEN THERE IS NO PROMISING ALTERNATIVE

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In accordance with Montgomery's (1983; 1989) concept of dominance structuring, the decision maker searches for promising alternative, and when he/she finds one, this influences his/her information searching and evaluative processes. But what if the decision maker does not find a promising alternative? In a preliminary study we compared the decision maker's information search in four situations. In the two of these situations information search was strongly focused on the alternative that was finally chosen. In two other situations search was more even distributed among choice alternatives. We speculate how the four situations differed.

EVALUABILITY AND THE AFFECT HEURISTIC. THE ROLE OF AFFECTIVE CUES IN THE PROCESS OF ATTRACTIVENESS EVALUATION

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In the series of laboratory experiments the effects of evaluability and the affect heuristics on simple lotteries attractiveness ratings were examined. A small loss introduction – a reference point simplifying lottery evaluation – enhanced the ratings of lottery attractiveness in comparison to the condition in which such a small loss was not introduced. A hierarchical regression analysis was applied to explore the influence of hypothesized variables that can moderate the evaluation process. Despite the affective mechanism of the evaluability concept, only an individual level of instrumental risk (deliberative and analytic) had a significant impact on the obtained results. A tendency to take stimulating risk (experiential and affective) was not a significant predictor in the tested model. In the following experiments, the opportunity for analytic deliberation was reduced by means of time pressure and cognitive load conditions. In the line with prior predictions evaluable lotteries (with a small loss) were rated as more attractive as compared to less evaluable ones (without a small loss). Time pressure and cognitive load increased the magnitude of the effects. Taking into account the levels of instrumental and stimulating risk, only the latter played a significant moderational role – the higher stimulating risk score, the more importance in evaluation process was attached to the affective cues. Obtained findings support theoretical predictions basing on both the affect heuristic and the concept of evaluability.

THE EXPERIENCE OF FREEDOM IN DECISIONS – QUESTIONING PHILOSOPHICAL BELIEFS IN FAVOR OF PSYCHOLOGICAL DETERMINANTS

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The concept of freedom of a decision is closely linked to the philosophical issue of free will. Although the idea of libertarian free will is untenable, there are plenty of theories and models permitting the construction of a *functional decision-freedom*, which is compatible with determinism. But neither has psychology tested this functional freedom (cf. Baumeister, 2008) or its components, nor has it thoroughly tested if the *feeling* of freedom goes along with it (an exception: Harvey, 1976). I took this state of affairs as a starting point for my dissertation and strived to shed light on the question when and why participants experience freedom in decisions. Over a series of six experiments different models of decision-freedom were tested, for example the scale of choice or the indetermination of a decision. Experienced freedom, affective experience and experienced uncertainty were measured via self-reports within different decision-tasks. None of the tested models was able to predict higher experienced freedom. Thus, although the functional model of decision freedom is reasonable and humanistic, functional free decisions do not seem to be generally accompanied by the experience of freedom. In contrast, high judgments of experienced decision freedom are positively associated with expectancies of success, goal-attainment, competence and the confirmation of these expectancies. The presented talk will refer to the empirical results on experienced freedom and focus on how they can be interpreted using the concept of expectancy. A seminal point of discussion could be the emerging dissociation between the concepts of functional freedom and the experience of freedom.

CONSISTENCY OF RISK ATTITUDES ACROSS DOMAINS

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Introduction:

The appropriate definition and measurement of risk propensity has long been a topic of debate among researchers in personality psychology, decision research, economics, and other fields. Attempts to measure risk-taking as a stable personality trait have been thwarted by observed cross-situational inconsistency in behavior, exhibited for example by insurance-buying gamblers or skydiving wallflowers. They are two different ways to approach this issue. The first one is represented by personality psychologists who search for personality correlates of risk taking, e.g. work by Zuckerman on sensation seeking and risk taking. The second approach is represented by Weber and collaborators who suggest that domain differences in risk taking might have more to do with situational, domain-related differences in the perception of risk than with attitudes towards risk (e.g. Weber, 2001). Thus, she proposed a multi-domain inventory of risk-taking that also measures perceptions of risks and benefits (Weber, Blais, and Betz, DOSPERT).

The research reported here was designed to address the issue of consistency of risk attitudes across domain, thus the question whether a risk attitude is a stable personality trait. In order to answer this question the risk perception and risk attitudes across domains were measured using both questionnaire method and real behavior.

Study:

The DOSPERT scale and Zuckerman's Sensation Seeking Scale were administrated to 213 subjects. The subjects also performed two risky tasks. The first one was a video poker game and the other one was a classic task used in achievement motivation research, i.e. throwing a ball into a basket. In the video poker game, subjects had to decide 3 times whether to keep a small sure win or to change some cards. The risky options gave either a higher win with different probabilities (2%, 20% and 40%) or a loss. In the skill task subjects chose a distance from which they throw the ball. For each distance they estimated subjective probability of making a shot. In both tasks, subjects also estimated perceived risk of the chosen option.

It has been found that risk attitudes depend on risk perception. Strong correlations were found among risk attitudes across domains. Thus, preliminary data seem to support the thesis that risk attitude is a stable personality trait. Data are still being processed.

THE RELATIVE IMPORTANCE OF DIFFERENT ASPECTS OF A RISKY SITUATION IN RISK PERCEPTION

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The numerous attempts to define perceived risk have not yielded a single, commonly accepted definition. One major point of controversy regards the relative contribution of negative and positive aspects of a situation into risk judgment. Another controversy is related to the contribution of probabilities and outcomes into risk judgment.

Since the results of previous input-output research, in which respondents evaluated riskiness of gambles with different payoffs and probabilities, have been ambiguous, a different method has been used - SuperLab.

SuperLab allows for measurement both automatic (reaction time) and aware responses. Subjects were presented with pairs of words from two categories. Category 1 included the words that refer to risk itself, such as: risk, threat, security, opportunity and challenge. Category 2 included the words that refer to aspects of a risky situation: loss, gain, loss of opportunity, the chance of profit, anxiety, and purpose. Sujects' task was to assess relation between two words (first from Category1, second from Category2) on the 5-point response scale: from 0 – not related 4 - related. Reaction time was registered for each response.

It has been expected that the negative aspects impact would be strongly associated with notions of threat and risk and weakly associated with security, opportunity and challenge. It has also been expected that threat would be most closely associated with loss, while risk – with the possibility of loss. As for reaction time it has been expected that the stronger association, the shorter reaction time. Data are still being processed.

DO RISK PREFERENCES PREDICT INSURANCE DECISIONS? THE RELATION BETWEEN RISK PREFERENCES AND BOTH MAGNITUDE OF INSURANCE AND LIKELIHOOD OF AN ACCIDENT

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The study was designed to investigate the influence of: (1) magnitude of loss and (2) probability of loss on insurance decisions (3) in connection with risk attitudes. In literature in relation to tax behavior and consideration whether the severity of punishment or the likelihood of being caught affect more tax avoidance and fiscal fraud behaviors, results indicate the latter. The following study was based on the similar research question in terms of insurance choices. The public domain Thesis Tools online survey (http://www.studentenforschung.de/index.php?ln=en) was used as an investigative tool. Respondents were presented with a scenario related to an urgent purchase via an online trading platform. Respondents decided whether to insure or not against some problems with delivery product in time. The problems were related to some factors out of seller's control like mechanical problems with delivery truck, unexpected bad weather conditions, etc. or seller's decision not to send the product in time. Willingness to insure was investigated by (1) choosing one out of five levels of offered insurance with constant likelihood of an accident or (2) one out of five levels of probability that would inspire to buy an insurance. Risk attitudes were measured on risk preferences scale (ten paired lottery-choice decisions) proposed by Holt and Laury (2002). Moreover, CFC scale (Consideration for Future Consequences) was introduced as additional variable. In line with CPT model and with the reflection effect people prefer a lottery over a certain loss. In case of insurance sure loss is buying an insurance and lottery is a decision not to insure. Moreover, risk preferences should influence insurance decisions, thus risk aversion should be related with higher magnitude of premium and smaller likelihood of possible accident.

The preliminary results provide with the following data:
(1) 69,5% of respondents decided to insure, which is not in line with the reflection effect. The possible explanation is a fact that respondents might frame insurance situation in a different way and do not perceive premium as a sure loss, but as a kind of investment, which as a coverage reduce the overall loss.
(2) The result of CFC scale was not related to insurance decisions.
(3) Positive correlation was observed between the amount of risk averse choices and the level of chosen insurance (*r=0,261; p<0,05*). The more risk averse respondent is the more willing to insure is.
The data is still in proceeding.

Key words: risk preferences, magnitude of loss, probability of loss, insurance decisions

AMBIGUOUS PROBABILITIES IN ECONOMIC DECISION MAKING

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There is experimental evidence that in economic decisions ambiguous information about sunk-costs, future costs and expected revenues are not taken into account fort he decision if ambiguity is operationalized as diverging information from different information sources.

Two experiments investigate if grade of ambiguity, i.e. the difference between the probabilities provided by two information sources, has an impact on decisions. Experiment 1 varies two independent variables, domain (economic vs. leisure scenario), and ambiguity. Either unambiguous probability values were presented, or values differing by varying degrees. Experiment 2 investigates how ambiguous probabilities with a given difference affect decisions if the mean of the given values is low vs. about 50%. This manipulation affects ambiguity not as an absolute difference of values but in the form of the ratio of the lower and higher given values. For both experiments, decisions are discussed as well as process ratings like subjective importance of probability for the decision process and justifications.

TYPES OF DECISION PROCESSES IN CLINICAL INTUITION

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Clinicians often report 'gut feelings' of alarm or reassurance when making diagnostic or treatment decisions. They believe that these 'gut feelings' play a substantial role in clinical practice. However, 'gut feelings' is not a unitary concept and when clinicians report them, they refer to a wide range of concepts and processes (Stolper, et al., 2009). We will present our findings from a preliminary interview study that employed the Critical Decision Method (CDM; Klein, Calderwood, & Macgregor, 1989) to examine the decision making processes of clinicians in cases where they report experiencing a gut feeling.

Participants were 18 General Practitioners in the UK (9 female; mean age=44 years, SD=14.4) with either >10 years of clinical practice (n=9, M=27 years, SD=10.2) or ≤10 years (n=9, M=3 years, SD=3.0). Prior to the interview, participants were asked to think of *cases where they felt they knew that something was wrong (or that everything was well) but that they didn't know how they knew. Our aim was* to elicit cases of intuition experienced as a feeling, resulting from automatic, non-conscious processing that relies on knowledge amassed through implicit learning and that forms the basis of a judgement (Betsch, 2008; Dijksterhuis & Nordgren, 2006; Epstein, 2008; Hogarth, 2001). The CDM was then used during the interview to create a timeline of events and probe each point of judgement for the information available, judgement made, reasoning, expectations, feelings and knowledge.

Transcripts were coded for informational cues, expectations or reasoning, judgement points, goals and actions. These coded points were then rearranged to reflect the decision making process in each case. These processes were compared to identify commonalities.

Two main types of intuitive decision process were identified. *Recognition* processes, where GPs immediately recognised the problem (but expressed doubts about how they knew) and committed to that judgement despite salient conflicting information and reasonable alternative interpretations. *Gut-feeling* processes where the initial interpretation of the situation was later rejected based on acquired evidence, although the initial interpretation might still be described as more plausible. We will describe the two types of process with case examples and will present the associated characteristics of the cases where they were experienced.

DO CLINICIANS DISTORT INFORMATION TO SUPPORT AN EMERGING DIAGNOSIS? A PROCESS-TRACING STUDY

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In a previous study, where GPs diagnosed a computerised patient with atypical chest pain, we found systematic differences in the amount and type of information elicited and in the interpretation of information, depending on the diagnosis that participants finally gave: musculoskeletal vs. cardiac chest pain. We attributed differences in interpretation to the phenomenon of information distortion, whereby the evaluation of incoming information is changed to support an emerging belief. However, our observations were based on stimulated-recall data, therefore the possibility of post-hoc justification cannot be eliminated. The present study aimed to determine whether clinicians distort information pre- rather than post-diagnosis.

Data were collected from GPs via an anonymous questionnaire. The experimental group (n=102) read 3 patient scenarios, each with 2 competing diagnoses. Scenarios started with diagnostic information that intended to steer respondents towards one or the other diagnosis, and continued with several non-diagnostic cues. During sequential cue presentation, respondents rated the extent to which each cue favoured either diagnosis and updated their diagnostic belief at each step.

A control group of 36 different GPs rated the same cues as the experimental group but in random order and not as part of coherent diagnostic scenarios. Their mean cue ratings served as the unbiased baseline values for calculating distortion in the experimental group.

Mean distortion was 1.50 (SE 0.16), significantly different from 0 ($p<0.001$) and increased systematically with the strength of belief in the evolving diagnosis (mean slope 0.28, 95% CI 0.19-0.37, $p<0.0001$).

Information distortion has been found mainly with students making consumer and legal judgements and non-student participants making non-technical judgments. This study demonstrates information distortion by clinicians in diagnostic judgements. Findings show that clinicians considering different diagnoses may interpret the same information differently to support their diagnoses, irrespective of the information's diagnostic value.