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Differences in risk-defusing behavior in deciding for oneself versus deciding for other people

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ABSTRACT

In naturalistic risky decision-making tasks, risk-defusing behavior plays a central role. A risk-defusing operator (RDO) is an action carried out by the decision maker in order to decrease the risk of an alternative. Post-event RDOs (i.e., applied after the occurrence of a negative event) are more risky, but are associated with lower costs than pre-event RDOs (i.e., applied before the occurrence of a negative event). Two studies examine whether the choice between pre-event and post-event RDOs is influenced by detection probability, by involvement type (i.e., whether the decision has consequences for the decision maker or for other people), and by the interaction between these two variables. The results indicate that the effect of detection probability on choice was stronger if other people were involved than if the decision makers themselves were involved. Thus, in naturalistic risky decision tasks with consequences for themselves, people take detection probabilities into account to a lesser extent than in decisions with consequences for other people.

1. Introduction

When confronted with risky situations, people tend to search for opportunities to reduce the risk. In naturalistic risky tasks, risk-defusing behavior plays a central role in the decision-making process. A risk-defusing operator (RDO) is an action carried out by the decision maker in addition to an existing alternative in order to decrease the risk of this alternative (e.g., Huber, 2007; Huber, Bär, & Huber, 2009; Huber & Huber, 2003, 2008; Wilke, Haug, & Funke, 2008). According to Huber and Huber (2003), it is possible to distinguish between pre-event RDOs, which are applied before the occurrence of a negative event, and post-event RDOs, which are applied after the occurrence of a negative event. RDOs are relevant in various situations in everyday life. People can, for instance, decide to use pre-event RDOs such as getting a vaccination, using anti-virus software or investing in flood protection when building a house. Alternatively, people can employ post-event RDOs such as deciding to get medical treatment after a possible infection, consulting a computer expert after the computer has been infected by a virus, or using flood defenses when a flood has already occurred.

RDOs have positive effects (the prevention or mitigation of negative consequences), but also generate costs, e. g., the price or side effects of a vaccination (Huber, 2007; Huber & Huber, 2003). Pre-event and post-event RDOs, however, differ in terms of their costs. The cost of a pre-event RDO is deterministic, i.e., the costs have to be supported, even if the potential negative consequences do not occur, whereas the costs of a post-event RDO are probabilistic, i.e., they only arise if the potential negative consequence has, in fact, occurred. Therefore, in situations with a perfect detection probability of the occurrence of a negative consequence and effective treatment opportunities, the post-event RDO should be preferred, provided everything else is equal (Huber & Huber, 2003). However, if the timely detection of the negative consequence is not certain, the choice of a post-event RDO is risky. For instance, an infection may not be detected in time to take the appropriate medicine. Detection probabilities thus influence the choice between post-event and pre-event RDOs (Huber & Huber, 2003).

Research on RDOs has thus far neglected a relatively new area of research, namely regarding the notion that there might be a difference between making risky decisions for oneself and making risky decisions for other people (e.g., Beisswanger, Stone, Hupp, & Allgaier, 2003; Borresen, 1987; Fernandez-Duque & Wifall, 2007; Stone & Allgaier, 2008; Stone, Yates, & Caruthers, 2002; Wray & Stone, 2005). Important decisions often have consequences for other people. For instance, a politician confronted with the risk of a viral infection in the country might have to decide between ordering a reserve of medication in advance (pre-event RDO) or buying the medication when the virus has actually arrived (post-event RDO). Most empirical studies on RDOs have arbitrarily used decisions with consequences for the decision makers themselves and decisions with consequences for other people; the perspective was not regarded as important in terms of

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decision making. An indication that this self-other difference could be interesting in the context of RDOs is the finding that under justification pressure, people search more RDOs, and the search is more persistent (Huber, Arlette, & Huber, 2009). It is possible that, when other people are involved, decision makers think that they have to justify their decisions more than when the decision has consequences only for themselves, and therefore make more reasonable choices.

Depending on the situation, people were found to be more or less willing to take risks in decisions with consequences for others compared to decisions with consequences for the decision makers themselves (e.g., Atanasov, 2010; Beisswanger et al., 2003; Stone & Allgaier, 2008; Stone et al., 2002; Wray & Stone, 2005). In the domain of financial decision making, studies have either shown no difference between decisions with consequences for the decision maker and those with consequences for others (e.g., Stone et al., 2002), or that people tend to be more risk-averse when deciding for others than for themselves (for a review, see Atanasov, 2010). However, the opposite was found with regard to decisions about relationships: people made more risky relationship decisions for a friend than for themselves in low-impact relationship scenarios, whereas no difference was found in high-impact scenarios (Beisswanger et al., 2003; Wray & Stone, 2005). Beisswanger et al. (2003) argue that the contradicting results for financial versus relationship-based decisions might be explained by the difference in outcome evaluation. In the relationship-based studies, the potential negative outcome of the decision (e.g., suffering a rebuff) was considered as less troublesome when deciding for other people than when deciding for oneself. In contrast, they argue that, for financial decisions, the potential outcome (e.g., losing 10 Euro) might be valued as similarly important whether experienced by oneself or by other people. However, they do not provide empirical evidence for this hypothesis. In a review by Atanasov (2010), it was argued that one's risk-aversion increases when deciding for other people, especially in situations where the chooser expects to be held accountable for her choices, when losses are possible, and when the two parties have an ongoing relationship. Another explanation for contradicting results regarding self-other differences is the social value theory (Stone & Allgaier, 2008), which indicates that people make riskier decisions for others in situations where risk taking is valued, but not in situations where risk taking is not valued. The authors showed that previously documented self-other differences only occur in situations where risk is valued: risk taking was valued in low-impact relationship decisions, but not in high-impact relationship decisions and monetary situations. People are therefore guided by a perceived norm regarding how to decide for other people.

In the classic study by Huber and Huber (2003), only one out of three tasks confronted participants directly with the outcome of the decision, whereas in the other tasks, other people were affected by the outcome of the decision. The findings reported above, however, suggest that the choice between a pre-event and a post-event RDO could differ according to whether the decision maker only or other people are affected by the outcome of the decision. Therefore, in the present studies, we have explicitly distinguished between self-involvement scenarios and others-involvement scenarios.

The results of the study by Beisswanger et al. (2003) indicate that people may experience more intense emotions when anticipating negative consequences for themselves than when thinking of negative consequences for others. The risk-as-feeling hypothesis (Loewenstein, Weber, Hsee, & Welch, 2001) proposes that emotional reactions to risky situations often do not correspond with cognitive evaluations of those risks, and when such a difference emerges, emotional reactions influence actual behavior. The authors even provide evidence for the idea that self-other differences in risky decisions are produced by self-other differences in feelings towards the risky options. When predicting feelings and decisions for other people, participants ignored the impact of emotional reactions, arriving to more risky decisions. Moreover, people are less sensitive to variations in the probability of affect-rich outcomes than they are for affect-poor outcomes (Rottenstreich & Hsee, 2001). Thus, people deciding for themselves might not take into account information regarding detection probabilities, and may exaggerate the risk of choosing the post-event RDO, even with a high detection probability. When thinking of negative consequences for others, affect may be lower and, thus, not only are the consequences being considered, but the probability that they will occur is also taken into account to a greater extent. This would lead to an interaction effect between detection probability and involvement type: when people themselves are involved, they should be more averse to risk, even when there is a higher detection probability, whereas when others are involved, detection probabilities should be taken into account to a greater extent. Our hypothesis, therefore, is that the effect of detection probabilities on the choice of RDO is stronger if others are involved than if the decision maker is involved.

2. Study 1

2.1. Method

The study sample comprised 384 participants (296 females, 88 males) with a median age of 25 years ($M = 27.12$ years, $SD = 8.14$). The majority (299) reported that they were students of various disciplines.

In an online study, each participant was presented with four naturalistic risky situations. Similar to the study by Huber and Huber (2003), the participants were encouraged to vividly imagine being confronted with a situation in which they had to choose one of two alternatives: a pre-event RDO or a post-event RDO. Two variables were experimentally manipulated: involvement type and detection probability.

2.1.1. Involvement type

Involvement type was varied between subjects and had two levels: self-involvement and others-involvement. Participants were randomly assigned to either the self-involvement or the others-involvement condition. The self-involvement scenarios implied risks that only threatened the participants themselves. In the others-involvement scenarios, the risk did affect other people.

2.1.2. Scenarios

In a pre-test, a variety of different scenarios were examined for comprehensibility, the ease of imagining oneself in the situation, and the distribution of chosen RDOs. Based on the pre-test, eight naturalistic risky situations were chosen for the present study, four of which involved self-involvement and four of which involved others-involvement. In the self-involvement scenarios, the participants were confronted with the risk of a viral infection in a foreign country, a computer virus, a flood damaging the participant's house, and a defective piece of furniture. In the others-involvement scenarios, the participants took the role of an employee of a governmental department confronted with the risk of a viral infection in the country, an employee responsible for the city's parks confronted with the risk of a pest infestation, a manager of a retail store confronted with the risk of scarce storage facilities, and an employee of an animal shelter confronted with the risk of a parasite infestation. The translation of the original German wording of the virus infection scenario is given as an example[1]: "You have just booked a holiday in a foreign country, which you are looking forward to. In this country a viral infection, which evokes high fever, is circulating. If you are not infected with the virus, a wonderful and relaxing holiday is lying ahead of you. You can decide between two alternatives: (a) you get a vaccination

[1] The wording of the other scenarios are available on request.