Original Papers

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Psychological processes in decision making: probabilities, risk and chance

In modern societies, many of the decisions ordinary people are expected to make are based on numerical information. As a reflection of this fact, the contributions in this issue treat decisions and judgments based on numerical information in different formats and in different contexts.

Even though, we all want to use the information that is available to us in an optimal way when we make decisions, we are not always able to do so. This is particularly true for intuitive unaided decisions and therefore the set of six papers in this special issue section investigate some of these shortcomings and gives us some hints as how to overcome them.

Decisions concern the future, and this means that outcomes and consequences of decisions will appear in the future. However, in most contexts what will happen in the future is not certain and different outcomes could follow a decision. Hence, many decisions have to be taken under risk and uncertainty, which is the main theme of the EGPROC[1] papers of this issue. Because, the uncertainty of the future is often described by probabilities of different outcomes and consequences of a decision, much decision research including the papers in this issue have studied different aspects of probability. A methodological process perspective is another theme that also characterizes most of the contributions.

Even though there is a common theme of risk and uncertainty, the papers are quite independent of each other and the interested reader may pick the ones she or he prefers to read without having read any of the other contributions.

The first paper is by Ranyard, "*A critical realist perspective on decisions involving risk and uncertainty*" and investigates the theoretical foundations of decision making under risk with the aid of a philosophical critical realism perspective. The study proposes that this perspective has the potential to advance and unify disparate experimental and naturalistic lines of research and gives interesting examples of decision research using psychological process tracing techniques.

The second paper was written by Riege, Sulutvedt and Teigen "*Format dependent probabilities: An eye-tracking analysis of additivity neglect*". When we think about the future and try to estimate the probabilities of different individual events to happen, we sometimes forget that the probabilities of all possible events following, e.g., a decision should add to 1.0 (because at least one alternative event will occur with certainty). This bias depends on different factors and the authors study participants' use of information processes and response times to shed light on the differences in the strength of the sub-additivity bias as a result of how the participants expressed their probability estimates.

The third paper is by Schulte-Mecklenbeck and Küberger "*Out of sight – out of mind? Information acquisition patterns in risky choice framing*". This paper concerns the so called framing effect, which is one of the phenomena studied most frequently in the area of risky decision making. The effects of framing studied here are that when options are framed as if they were gains decision makers prefer a sure over a risky option and when the same problem is framed with the options as losses decision makers prefer a risky option over a sure option. The authors showed that the framing effect disappears when subjects are supplied with some redundant information. Moreover, using the MouselabWeb technique, the authors found that

[1] The first six papers (**Original Papers)** in this issue were all authored by members of EGPROC, a European group of researchers who study human decision processes and meet in a small conference every year since 1982.

irrespective of redundancy, subjects tend to acquire more information about outcomes than about probabilities.

The forth contribution is by Gonzalez and Svenson "*Growth and decline of assets: Biased judgments of asset accumulation and investment decisions*". Interest rates increase capital and decline rates shrink money invested in funds or other assets. This paper studies decisions about how much money should be invested in a risky investment with a chance of both growth and loss of capital. The results showed, contrary to what one would believe, that the accumulation of capital prior to the investment decision played a greater role than the characteristics of the investment offers themselves.

The fifth paper was writen by Dida and Zakay "*The confidence-frequency effect: A heuristic explanation*". Confidence in what we say and think varies. Sometimes we are absolutely certain that what we say is correct and sometimes we are less certain or we may even guess. Confidence can be expressed by, e.g., relative frequencies or probability of being correct related subjective measures. This paper compares two subjective measure of expressing confidence, who, unfortunately, give different results. With the aid of process measures, this study explains what participants do when they make their judgments and why the measures differ.

The sixth paper was written by Macko, Malawski and Tyszka "*Belief in others' trustworthiness and trusting behavior*". The research shows that one should distinguish between trust-as-belief (e.g. declared in surveys) and trusting behavior in economic interactions (e.g. in the trust game). In surveys people generally tend to declare that they do not trust others. On the other hand, when people decide whether to send money to a partner in an economic interaction, their real rate of trust is relatively high. The authors showed that apart from the belief in trustworthiness of the partner, such factors as altruistic or "impurely altruistic" motives and a compromise effect can influence decision about the amount of money they decided to transfer to a partner in an economic interaction.

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