

Bayesian analysis of risk- and ambiguity aversion in two information sampling tasks.

Author(s): Klevjer, Kristoffer; Pfuhl, Gerit (The Arctic University of Norway, Norway).

Contact: kristoffer@klevjer.no. *Abstract:* Humans are averse to risk (irreducible uncertainty) and ambiguity (reducible uncertainty). However, strong ambiguity aversion does not necessarily imply strong risk aversion. Further, in real life it can be challenging to attribute uncertainty and one may treat ambiguity as risk. This can lead to biases in information sampling, i.e. premature stopping of collecting information that could reduce uncertainty. These biases in information sampling have also been linked to delusional thinking and hallucination disposition in both healthy individuals as well as in mental disorders like schizophrenia. Modelling allows to identify the processes and aberrances in decision-making. Here, we experimentally investigate these potentially aberrant attributions by using the draws to decision version of the beads task (Huq et al., 1988) and the risk and ambiguity lottery task (Levy et al., 2010). For each participant (N=77) we extracted their risk-, and ambiguity aversion using the hierarchical Bayesian modelling of Decision-Making tasks R-package (hBayesDM; Woo-Young et al., 2017), and used those parameters as predictors for explaining the draws to decision in the beads-task. Preliminary results indicate that a person's risk aversion but not ambiguity aversion is related to draws to decision in the beads task. This displays both the usefulness and importance of modelling cognitive tasks to better understand and analyze the results from decision-making tasks, as well as its importance in order to better understand and disentangle the underlying mechanisms of everyday biases.