

Non Two-Stage-Probability Models of Decision Making Under Ambiguity: New Experimental Evidence

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Abstract

We examine the performance of non two-stage-probability models of decision-making under ambiguity from the perspective of their descriptive and predictive power. Focusing on the class of theories that proceed indirectly through the use of a preference functional, we try to answer the question as to whether the new generalisations of Subjective Expected Utility (SEU) theory are significantly better than SEU. We employ an appropriate experimental design which enables us to reproduce ambiguity in the laboratory in a transparent and non-probabilistic way. We operate with a very simple experiment in which there are three possible events. We ask subjects to allocate a given total number of tokens to the three events, given certain exchange rates between tokens and money for each event. Using a subset of our data we fit a number of models using a constrained maximum likelihood procedure to see how well the models fit the data. We then use the estimated models to predict behaviour on the rest of the data to see how well our fitted models predict behaviour. We find that fitting and prediction give us different rankings of the models. Our results show that, if we know nothing about our subjects, there is very little to choose between the models, but if we do have some prior information, Choquet and the Contraction Model seem to be the best, both at fitting and predicting.

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