

Measuring the costs of planning

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Abstract

Which information is worth considering depends on how much effort it would take to acquire and process it. From this perspective people's tendency to neglect considering the long-term consequences of their actions (present bias) might reflect that looking further into the future becomes increasingly more effortful. In this work, we introduce and validate the use of Bayesian Inverse Reinforcement Learning (BIRL) for measuring individual differences in the subjective costs of planning. We extend the resource-rational model of human planning introduced by Callaway, Lieder, et al. (2018) by parameterizing the cost of planning. Using BIRL, we show that increased subjective cost for considering future outcomes may be associated with both the present bias and acting without planning. Our results highlight testing the causal effects of the cost of planning on both present bias and mental effort avoidance as a promising direction for future work.