Predicting Choice from Information Costs

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We study a canonical flexible-learning model in which an agent chooses from a finite set of alternatives, the benefits from which depend on a stochastic state. Before making her decision, the agent chooses what signal to acquire about this state. Learning comes at a cost, which the agent subtracts from the expected benefit she derives from her final decision. After choosing her information, the agent observes a signal realization and takes an action.

In our paper, we explore to what degree knowledge of the agent’s information costs helps predict her behavior. We establish an impossibility result: learning costs alone generate no testable restrictions on choice without also imposing constraints on actions’ state-dependent utilities. By contrast, choices from a menu often uniquely pin down the agent’s decisions in all submenus. To prove the latter result, we define iteratively differentiable cost functions, a tractable class amenable to first-order techniques. Finally, we construct tight tests for a multi-menu data set to be consistent with a given cost.

A full version of this paper can be found at https://arxiv.org/abs/2205.10434.