Selective Sampling with Information-Storage Constraints*

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May 9, 2018

Abstract

A decision-maker acquires payoff-relevant information until she reaches her storing capacity, at which point she either terminates the decision-making and chooses an action, or discards some information. By conditioning the probability of termination on the information collected, she controls the correlation between the payoff state and her terminal action. We provide an optimality condition for the emerging stochastic choice. The condition highlights the benefits of selective memory applied to the extracted signals. The constrained-optimal choice rule exhibits (i) confirmation bias, (ii) speed-accuracy complementarity, (iii) overweighting of rare events, and (iv) salience effect.

Keywords: bounded rationality, cognitive constraints, information processing, stochastic choice, confirmation bias, speed-accuracy complementarity, probability weighting, salience.

JEL codes: D03, D80, D81, D83, D89, D90.