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Bayesians Too Should Follow Wason: A Comprehensive Accuracy-Based Analysis of the Selection Task

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Wason's selection task is a paramount experimental problem in the study of human reasoning, often connected with the celebrated ravens paradox in the philosophical literature. Various normative accounts of the selection task rely on a Bayesian approach. Some claim vindication of participants' rationality. Others don't, thus following Wason's original intuition that observed responses are mistaken. In this article we argue that despite claims to the contrary, all these accounts actually speak to the same effect: Wason was right. First, we provide a new accuracy-based analysis of the selection task that includes the existing proposals as special cases. We then show on this basis that none can actually vindicate participants' rationality. We conclude that all normative renditions considered eventually concur: all in all, Bayesians should follow Wason in the selection task.

1. Introduction

No experimental paradigm has generated more psychological research on rationality than the Wason selection task (Wason [1966], [1968]). Content with Wason's original interpretation, many psychologists and philosophers have thought of the selection task as a textbook example of how humans can systematically fall short of compelling norms of reasoning. Others have protested, however, providing a number of arguments to the effect that people's behaviour in the task is actually rational, given alternative and allegedly appropriate normative accounts.¹ The result: more than fifty years after Wason's original experiment, we are left with a plurality of different normative analyses of the task. Most of them are explicitly Bayesian; all are implicitly based on various auxiliary assumptions and theoretical choices. Some claim vindication of participants' rationality, others don't, and no consensus is in sight.

¹ For occurrences in the philosophical literature, see, for example (Stich [1990], pp. 4–6; Humberstone [1994]; Stein [1996], pp. 79–93; Bradley [2015], pp. 118–19).

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