Weighting, Filtering, and Bayesian Updating*

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Abstract

This paper studies belief updating by a decision maker who receives multiple signals simultaneously. We first show that, in this environment, Bayesian updating can be characterized by two simple axioms. One requires that the decision maker updates beliefs in a Bayesian manner when only a single informative signal is received. The other requires that identical beliefs and informational content lead to identical posterior beliefs. We then explore biases that arise in the presence of multiple signals. We relate them to violations of these axioms and provide axiomatic characterizations for each class of such deviations.

Keywords: learning; non-Bayesian updating; uncertainty; complexity
JEL classification: D80; D91

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