

Provisional Probabilities and Paradigm Shifts

By Jonathan Weinstein
Northwestern University
September 23, 2010

ABSTRACT

In this paper we show that procedures in which models are replaced, allowing for "paradigm shifts," can be partially reconciled with the principles of decision theory which lead to Bayesian updating. Under certain conditions, a belief-revising decision-maker is identical to or closely resembles a Bayesian. In these cases we have two alternative ways to represent the same decision-maker: with model revision, in which case we refer to his beliefs as "provisional beliefs," or as an ordinary Bayesian who has a different "belief" that covers all of the possible revisions. This is an attempt to bridge the gulf between decision theory and statistical practice.