Asymmetry and the Geometry of Reason

Stefan Lukits
University of British Columbia
sediomyle@gmail.com

Defenders of the epistemic utility approach to Bayesian epistemology use the geometry of reason to justify Bayesian tenets such as probabilism and standard conditioning. The geometry of reason is the view that the underlying topology for credence functions is a metric space, on the basis of which axioms and theorems of epistemic utility for partial beliefs are formulated. It implies that Jeffrey conditioning must cede to an alternative form of conditioning. The latter fails a long list of plausible expectations. One solution to this problem is to reject the geometry of reason and accept information theory in its stead. Information theory comes fully equipped with an axiomatic approach which covers probabilism, standard conditioning, and Jeffrey conditioning. It is not based on an underlying topology of a metric space, but uses non-commutative divergences instead of a symmetric distance measure. I show that information theory, despite initial promise, also fails to accommodate basic epistemic intuitions.