Dutch book against some
`objective' priors

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Abstract

`Dutch book' and `strong inconsistency' are generally equivalent: there is a system of bets that makes money for the gambler, whatever the state of nature may be. As de Finetti showed, an odds-maker who is not a Bayesian is subject to a Dutch book, under certain highly stylized rules of play - a fact often used as an argument against frequentists. However, so-called `objective' or `uninformative' priors may also be subject to a Dutch book. This note explains, in a relatively simple and self-contained way, how to make Dutch book against a frequently recommended uninformative prior for covariance matrices.

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The Dutch Book argument (DBA) for probabilism (namely the view that an agent's degrees of belief should satisfy the axioms of probability) traces to Ramsey's work in "Truth and Probability". He mentioned only in passing that an agent who violates the probability axioms would be vulnerable to having a book made against him and this has led to considerable debate and confusion both about exactly what Ramsey intended to show and about if, and how, a cogent version of the argument can be given. The basic idea behind the argument has also been applied in defense of a variety of principles, some of Regarding informative priors in applied research, we can distinguish three categories: (1) Prior distributions giving numerical information that is crucial to estimation of the model. (This also makes it fun to write books.) Regarding your last comment: yes, there is an idea that a Bayesian wants everyone else to be non-Bayesian so that he or she can do cleaner analyses. I discuss that idea in this talk from 2003 which I've been too lazy to write up as a paper.