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Comment

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1. INTRODUCTION

The present paper is the latest manifesto in Lindley's long crusade to wrest the Holy Land of Statistics from the infidels. In it he has given a new name to this heathen host: *Berkeley*, eponymously named after the Bishop with whom Thomas Bayes had his own disagreements, but also after the campus of the University of California, which "has perhaps the best department broadly holding to that [non-Bayesian] view." This seems a bit unfair to my long-time colleagues Blackwell and Dubins, both enthusiastic Bayesians, who are untainted except through such guilt by association.

As a Berkeleyan, both geographically and in Lindley's ideological sense, I shall take this opportunity to comment on some of my agreements and disagreements with the orthodox Bayesian view presented by Lindley. Of course these are only my personal opinions; Berkeleyans are no more unified in their formulations than are Bayesians.

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2. ROLE OF THE SAMPLE SPACE

This is the topic of Sections 1.3 and 1.4 of Lindley's paper and is mentioned by him as a major point of disagreement. He notes that the sample space is often difficult to specify; I fully agree (see, for example, Lehmann, 1988). Lindley refers to Jeffreys' characterization of the sample space X as "the class of observations that might have been obtained but weren't" and (rightly) declares this class to be an artificial construct. "The practical reality," Lindley writes, "is the data x (not X), the parameter-space Θ and the likelihood function $p(x \mid \cdot)$ for fixed x and variables θ."

However, the sample space is of course only the beginning of Berkeley's violation of this dictum. Specifying a probability distribution (or class of distributions) assigns not only possible values to X but also the possible probabilities of all these values.

The idea that the actual data set is only one of many possible such sets that might have been obtained under the given circumstances is central to the concept