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STATISTICAL COVERAGE IN THE SOCIAL SCIENCE ENCYCLOPEDIA

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BAYESIAN INFERENCE IN THE INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL SCIENCES (Abstract)

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While the origins of Bayesian inference are old, the approach is still novel and controversial. Theoretical developments are rapid. The ultimate relationship to the "sampling theory" approach is not yet clear. For these reasons, the problems of what to say in an encyclopedia article on Bayesian inference overshadow the problems of how to say it. But two offsets have greatly eased the difficulties of writing the article.

First, at least in published literature, the usual misunderstandings of scientific controversy have scarcely arisen. It seems to be widely recognized that the major practical difference between Bayesian inference and sampling theory is the extent to which judgment is introduced into formal stage of a statistical analysis.

Second, research in Bayesian methods has brought out many interesting connections between Bayesian theory and sampling theory. Most, if not all, sampling theory techniques seem to have useful Bayesian interpretations. When prior distributions are "informationless," Bayesian inferences often agree, or nearly agree, with sampling-theory inferences; when this agreement does not occur, the existence of disharmony can be a stimulus to further theoretical development, especially since the Bayesian procedures often have desirable sampling properties.