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In This Issue

I. J. Good has been a prolific and influential contributor to the field of probability and statistics for more than 45 years. His list of publications contains more than 1,500 items. An abbreviated version of this list, together with a subject index, is contained in the Good book *Good Thinking: The Foundations of Probability and Its Applications*, University of Minnesota Press, Minneapolis, 1983, and it is more stimulating and entertaining to read than most of the *articles* published by other statisticians. Jack Good is the man who created the fictitious coauthor K. Caj Doog to justify the use of "we" in a publication, and pointed out that there are at least 46,656 varieties of Bayesians: "This is more than the number of professional statisticians so some of the categories must be empty." Indeed, Good's own approach to statistical inference is sometimes called Doogian by himself and others.

Philosophical issues of probability and statistics have been a major interest of Good's (*Good Thinking* contains a rich selection of his papers in this area) and in this issue we are pleased to present a wide-ranging exposition by Good on "The Interface between Statistics and Philosophy of Science." Among the topics that he touches upon are such standard Goodies as "probability, surprise, rationality, corroboration or weight of evidence, explanation, induction, probabilistic causality and a Bayes/non-Bayes compromise." The discussants are Patrick Suppes, George A. Barnard, James O. Berger and David L. Banks.

An international symposium in honor of Good's 70th birthday was held at Virginia Polytechnic Institute and State University in May 1987. We wish him well and look forward to his next 1500 publications. A previous article by him "Some Statistical Applications of Poisson's Work," appeared in *Statistical Science* (1986), Vol. 1, No. 2.

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In statistical data analysis, it is often necessary to *interpolate* between the points in a data set or to *smooth* these points in some appropriate way by fitting a suitable curve to them. Loosely speaking, a *spline* is a curve chosen for one of these purposes that is made up of segments of different polynomials joined together and satisfying certain continuity or differentiability properties at the join points or *knots*. The statistical theory of splines has been extensively developed during the past 20 years, and continues to be an active and fruitful area of research. Several of the most important references are cited by J. O. Ramsay in his article in this issue, "Monotone Regression Splines in Action." As the title of his article indicates, Ramsay describes, complete with examples, methodology for the construction of splines that are appropriate in certain regression-like settings in which the fitted curve must be monotone.

The discussants are Leo Breiman, Randy Eubank, Trevor Hastie and Robert Tibshirani, and Grace Wahba, all of whom have themselves made distinguished contributions to closely related areas. Breiman writes, "It is a pleasure to comment on [a paper] where one finds much merit together with major issues on which one can contend," and this same feeling is reflected in the comments of the other discussants, all of whom find their own points of contention.

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A. S. Hedayat, Mike Jacroux and Dibyen Majumdar provide a thorough, up-to-date and valuable review of optimal experimental designs for problems in which a set of test treatments must be compared with a control or standard treatment. If, in such problems, t_0 represents the effect of the control or standard treatment, and $t_1, \cdots, t_v$ represent the effects of the v test treatments, then we are interested in designs that will allow us to estimate the differences $t_i - t_0$, $i = 1, \cdots, v$, with as much precision as possible. Optimal designs are described for a variety of experimental frameworks and optimality criteria.

The discussants, Robert E. Bechhofer and Ajit C. Tamhane, William I. Notz, A. Giovagnoli and I. Verdinelli, John D. Spurrier and R. J. Owen, describe the history of the topic and raise some questions regarding other useful optimality criteria, problems with several controls of varying interest and sequences of experiments.

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For 40 years, Cuthbert Daniel has had a distinguished and creative career as an independent consultant in industrial statistics. An outline of Daniel's unusual career, together with his bibliography, is given in the book *Design, Data, and Analysis by Some Friends of Cuthbert Daniel* (edited by Colin L. Mallows), John Wiley and Sons, New York, 1987. A highlight of this issue is an interview with Daniel conducted by Edward R. Tufte, Professor of Political Science and Statistics at Yale University.