BOOK REVIEWS

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DENNIS V. LINDLEY, *Introduction to Probability and Statistics from a Bayesian Viewpoint*, Vols. 1 and 2. Cambridge University Press, New York, 1965. Vol. 1, Probability, xi + 259 pp. $6.00; vol. 2, Inference, xiii + 292 pp. $6.50.

REVIEW BY HERMAN CHERNOFF

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The prospective author of a textbook in statistics is bedeviled by a host of problems. The subject matter is delicate and difficult. A complicated historical interplay in theory, textbooks and widespread practice serves to perpetuate a body of knowledge normally justified by dogmas which are controversial and mysterious when examined closely. The technical mathematical background required in a rigorous discussion of relevant theorems involves advanced work in mathematics, but fairly sound intuitive justification can be given with practically no reference to calculus. On the other hand, a body of illustrations requires a sound knowledge of calculus. With or without the use of the formal background, mathematical skill is of fundamental importance in facilitating the penetration to the heart of matters. An attempt to make a text readable and interesting to a large audience must cope with the widely divergent backgrounds of prospective readers.

The jargon and questionable dogmas have encouraged some authors to rewrite statistics in unconventional form. A few such attempts, based on poorly digested readings rather than experience in practice and theory have been unfortunate and rapidly forgotten. In recent years, some well established statisticians have begun to experiment with less conventional treatment.

Professor Lindley is a prominent statistician with many years of experience and a record of important contributions to the fields of Probability and Statistics. He is an outspoken Bayesian with a strong interest in decision theory. In writing this text he has reduced or eliminated a number of the above mentioned difficulties. By limiting the audience to university students of mathematics with a sound knowledge of calculus plus familiarity with matrix algebra, he has assumed students with skill and allowed himself the liberty of heuristic proofs when convenient. A liberal interpretation of his stated objective, of presenting the minimum that any mathematician ought to know about random phenomena, provides considerable choice among topics. A previous more orthodox draft required so much mental juggling to understand the concepts that he chose to present the less conventional and simpler Bayesian approach, where inference is