

JOHN E. WALSH, *Handbook of Nonparametric Statistics*. D. Van Nostrand Company, Inc., Princeton, New Jersey, 1962. \$15.00, 549 pp.

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The author's goal is "to present statements of the more important nonparametric procedures in a concise but understandable form." By a nonparametric procedure he means one having "properties which are satisfied to a reasonable approximation when some assumptions that are at least of a moderately general nature hold." This statement of objective leaves the intended scope of the book a vague matter; partly this is unavoidable.

The material included in this volume comprises tests of randomness, Tchebycheff-type inequalities, point and interval estimation of parameters, tolerance regions, tests and estimates relating to the cdf (and to the pdf) and a last chapter contains "Sequential, Decision, and Categorical Data Results for Distributions." Generally, the author has striven to include coverage of all the relevant literature through and including 1957. The coverage of subject matter is very wide; the literature cited is comprehensive. (I remarked only one reference which seemed to me an important omission.)

The preface states that a second volume<sup>1</sup> will cover material (excluded from this one) that is "concerned with the two-sample problem, the several-sample problem, analysis of variance, regression and discrimination, multivariate analysis, matching and comparison problems, and tests of symmetry and extreme observations." Actually, there are a few two-sample tests included in the book, as well as some tests of symmetry.

The author has intended to write a handbook for applications, a purpose emphasized in the preface as follows: "All results given are designed to use data from actual statistical experiments." In collecting a very large body of literature between two covers, the author has done somewhat more than merely assemble, edit, and summarize; he has offered some opinions on conditions in which particular methods are applicable, (e.g., necessary sample sizes), difficulty of application, sensitivity to assumptions, etc.

It appears that doubtful cases of practicality have been resolved by deciding to include rather than exclude. For example, bounds on probabilities in terms of moment matrices smack less of data analysis than of theorem-proving; they are none the less welcome inclusions in the text. Similarly, Stein put forward his contribution to the *Third Berkeley Symposium* as an indication of how the nonparametric hypothesis testing problem may become (asymptotically) no more difficult than the same problem formulated in parametric terms. Stein somewhat shrugs off the practical utility of his construction; Walsh includes it as a tool for use. There are other such cases. Again, the over-inclusiveness is not harmful.

The book begins with four introductory chapters, totalling 53 pages, followed by seven more chapters, each containing a collection of related statistical procedures; these chapters occupy another 426 pages. There follow tables of the

<sup>1</sup> The author now projects two further volumes to cover these topics and some additional ones.