Opera Selecta Boxi

Seymour Geisser

A review of *The Collected Works of George E. P. Box*, (George C. Tiao, ed.) Belmont, CA, Wadsworth Publishing Co., 1985. Volume I, xiv + 657 pp, $42.95. Volume II, xiv + 710 pp, $44.95.

1. INTRODUCTION

The Collected Works of G. E. P. Box edited by G. C. Tiao features 69 articles out of a totality of 120 articles and 6 books attributed to him and coauthors during the period 1947–1984. All of his books and more than ⅔ of his papers were collaborative efforts with a wide variety of statisticians, probably a larger number than any other statistician during the last 40 years—so much for the statistics.

Without a doubt the responsibility for the prominence of the Wisconsin Statistics Department, many of whose members or now former members have been his major collaborators, is mainly due to the efforts of Box. Most frequent as coworkers have been G. C. Tiao, N. R. Draper, G. Jenkins, J. S. Hunter, W. G. Hunter, G. Ljung, B. Abraham, and J. F. MacGregor. This is not to gainsay the important papers he wrote with D. R. Cox, P. W. Tidwell, S. L. Andersen, I. Guttman, K. B. Wilson, H. L. Lucas, D. A. Pierce, and a number of others.

Clearly, Box exhibits an enormous capacity for simultaneously inspiring and working closely with a number of different researchers on a variety of statistical issues; no mean feat, given the history of statistical egos, polemics, and assorted petty quarrels. For example, from the late 1950s to the mid-1960s, he must have been working more or less during the same period with Jenkins on control problems and time series, with Tiao on Bayesian inference, with J. S. Hunter on factorial designs, with Draper on response surfaces, with D. W. Behnken on rotatable designs, with W. G. Hunter on modeling, with G. S. Watson on robustness, and with Tidwell and Cox individually on transformations. Indeed, before anything else is said, one crucial role Box has played is as "The Great Collaborator," of course not of the Quisling variety. Later we shall hear of him as "The Great Communicator" (in the sense of mastery of exposition rather than actor transmuted into President).

Seymour Geisser is Professor and Director, School of Statistics, University of Minnesota, 270 Vincent Hall, 206 Church Street, S.E., Minneapolis, MN 55455.

The *Collected Works* appear in 2 volumes divided into 5 parts. Volume I, Part 1 contains 16 papers on statistical inference, robustness, and modeling strategy, while Part 2 features 14 papers of experimental design and response surface methodology. In Volume II, the remaining parts are: 3, time series analysis and forecasting; 4, distribution theory, transformation of variables and nonlinear estimation; 5, application of statistics. Each part is prefaced with an introduction by a distinguished figure in the field giving his view of the motivation and highlights of the more important papers presented. Appropriately distributing a large number of an individual's works into a few mutually exclusive categories presents difficulties, but here a sensible allocation was made. Within each part the papers are arranged chronologically by publication date. Several minor exceptions may be noted. In Part 1, the last paper is not in its proper chronological order (also true of the 10th paper in Part 3) and the 4th paper appears to have been better placed in Part 2. A further quibble is in regard to the 7th paper in Part 4 as with a few other papers, they could just as easily have been placed in others parts.

It would be presumptuous to believe that these works exhibit the totality of Box's contributions because obviously his career is far from over. In this sense the *Collected Works* is premature since by no means have his research efforts abated. In view of this fact the editors missed the rare opportunity of allowing the scientist to comment on his own work, discussing what he believed most important, and perhaps how he arrived at some of his ideas and the connection between works that may seem to us quite disparate. This would also have permitted him to correct mistakes, misprints, etc. of one kind or another in the text. The articles are photocopies of the originals and hence large variations in font, texture, and typography are evident.

2. INFERENCE AND ROBUSTNESS

The papers in Part 1 are preceded by an erudite summary as only S. M. Stigler can render. He traces the growth of Box's original conception of robustness