A Brief History of Statistics in Three and One-Half Chapters: A Review Essay

Stephen E. Fienberg

EDITOR'S NOTE

This article by Stephen Fienberg reviews the last three and one-half centuries of statistics and probability largely through the author's overview and synthesis of seven recent books on the topic. It is an altering and expansion of an earlier paper with the same title published in *Historical Methods*. We are partly taking this liberty because *Historical Methods* falls well outside the normal reading range of statisticians. An extension particularly worth noting is the introductory timeline on pages 210 and 211. The original version appeared in *Historical Methods* (1991 24 124–135; Heldret Publications, 1319 18th Street, N.W., Washington, D.C. 20036-1802, copyright 1991). Permission to reprint in revised form has been granted by the Helen Dwight Reid Educational Foundation.

The seven books reviewed here are as follows:

LORRAINE J. DASTON (1988). *Classical Probability in the Enlightenment.* Princeton Univ. Press, 423 pp.

GERD GIGERENZER, ZENO SWIJTINK, THEODORE PORTER, LORRAINE DASTON, JOHN BEATTY and LORENZ KRÜGER (1989). *The Empire of Chance. How Probability Changed Science and Everyday Life.* Cambridge Univ. Press, 340 pp.

ANDERS HALD (1990). *A History of Probability and Statistics and Their Applications before 1750.* Wiley, New York, 586 pp.

LORENZ KRÜGER, LORRAINE DASTON and MICHAEL HEIDELBERGER, eds. (1987). *The Probabilistic Revolution, Volume 1: Ideas in History.* MIT Press, 449 pp.

LORENZ KRÜGER, GERD GIGERENZER and MARY S. MORGAN, eds. (1987). *The Probabilistic Revolution, Volume 2: Ideas in the Sciences.* MIT Press, 459 pp.

THEODORE M. PORTER (1986). *The Rise in Statistical Thinking, 1820–1900.* Princeton Univ. Press, 333 pp.

Stephen E. Fienberg is Professor of Statistics and Law and Vice President for Academic Affairs at York University, 4700 Keele Street, North York, Ontario M3J 1P3, Canada.

STEPHEN M. STIGLER (1986). *The History of Statistics: The Measurement of Uncertainty before 1900.* Harvard Univ. Press, 410 pp. [Reissued in a paperback edition (1990).]

INTRODUCTION

Writing a history of some aspect of science is often a daunting task, requiring the painstaking reexamination of source materials long forgotten by contemporary scientists and the blending of a knowledge of the substance of the science in question with a broader historical sense. Furthermore, unlike those working in other areas of history, the historian of science is constantly encountering examples of lapses in the scientific etiquette and scholarship of those under study (as Stigler notes in *The History of Statistics*, "Citation was an imperfect art in the eighteenth century," p. 95), as well as instances of Stigler's Law of Eponymy, which has a less modest origin than the name might suggest and states, in its simplest form, that "No scientific discovery is named after its original inventor" (Stigler, 1980). This essay takes its title in part as a play on the titles of two recent books, a highly popular account of the history of physics and astronomy as they relate to the beginning of the universe (Hawking, 1988) and a somewhat less popular work of fictional history (Barnes, 1989), but with few pretensions of emulating the success of either of the authors. It is my intent to provide a brief but accurate overview of selective aspects of the development of the field of statistics, drawing in large part on a septet of recently published books as well as a personal assessment of the books themselves. I write, not as a historian of science, but as a statistician with a strong interest in the history of his own discipline.

A history of a scientific field such as statistics plays a special role for the field itself, helping statisticians to understand some of the origins of their work as well as a sense of what, statistically, discovery is all about. Because statistical thinking infuses so many other scientific fields today, the history of statistics plays an important backdrop to the history of science more broadly. Thus, one might well begin by asking who has actually been writing about the history of statistics?