Cramér H. *Mathematical methods of statistics.*
Uppsala: Almqvist & Wiksells, 1945. 575 p.
[University of Stockholm, Sweden]

The book contains three parts: a mathematical introduction, an exposition of the theory of random variables and probability distributions, and finally, the application of the two first parts to statistical inference. It represents an attempt to give a rigorous and consistent survey of methods of statistical inference, based on purely mathematical probability theory. [The *SCI*® indicates that this book has been cited in over 2,445 publications since 1961.]

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"The 20 years between the two world wars was a period of strong development both for the purely mathematical probability theory and for the methodology of statistical inference. As a young mathematician, and then in 1929 as a professor at the University of Stockholm, I followed these developments with keen interest.

"Fundamentally new ideas were introduced in probability theory by Kolmogorov[1] and Khintchine[2] in the USSR, and by Paul Lévy[3] in France. In England and the US, extensive research work was being done on methods of statistical inference by Fisher,[4] Neyman,[5] Pearson,[6] and others.

"It seemed to me that the continental mathematicians and the Anglo-Saxon statisticians were working without sufficient mutual contact, and that it might be useful to try to join these lines of research by writing a book on modern statistical methods, based on mathematical probability theory. I

planned to write such a book in German, and still have a tentative table of contents, written in German in 1937. But my strong anti-Nazi feelings made me reluctant to publish in Germany, and no book was written.

"In 1942, when the end of World War II still seemed to be far away, I took up the old plan again and began writing a book in English. In the summer of 1945 the manuscript was ready, and a small edition was published by the Swedish publisher Almqvist & Wiksells. Through the intermediary of my friend Einar Hille at Yale University, I then received as a totally unexpected surprise an invitation to have the book included in the Princeton Mathematical Series, and printed by offset at the Princeton University Press.[7] This edition was published in 1946, and has been translated into Russian, Polish, Spanish, and Japanese.

"The book was written in my home in Djursholm outside Stockholm. From my working table I had a wonderful view of the large garden belonging to our house, and my wife encouraged me in my work, as she always did. The book is dedicated to her: 'To Marta.'

"During my work, Sweden was isolated, surrounded by war on all sides. I sometimes said to my wife that I hoped this book would be my entrance card to the new world after the war. In fact, the international success of the book was greater than I had ever expected. The fact that it has been cited often enough to be included in the *Citation Classics* feature is probably due to the fact that it gives a complete and self-contained exposition of the purely mathematical foundations and their application to statistical methodology, as far as this was possible in 1945. Since then, of course, there has been a tremendous further development, but the book still seems to be useful as a basic treatise."

1. **Kolmogorov A.** *Grundbegriffe der wahrscheinlichkeitsrechnung.* Berlin: Springer, 1933. 62 p.
2. **Khintchine A.** Sur la loi des grands nombres. *C.R. Acad. Sci.* **188**:477, 1929.
3. **Lévy P.** *Théorie de l'addition des variables aléatoires.* Paris: Gauthier-Villars, 1937. 328 p.
4. **Fisher R A.** The logic of inductive inference. *J. Roy. Statist. Soc.* **98**:39-54, 1935.
5. **Neyman J.** Basic ideas and some recent results of the theory of testing statistical hypotheses.
     J. Roy. Statist. Soc. **105**:292-327, 1942.
6. **Pearson E S.** The probability integral transformation for testing goodness of fit and combining independent tests of
     significance. *Biometrika* **30**:134-48, 1938.
7. **Cramér H.** *Mathematical methods of statistics.* Princeton, NJ: Princeton University Press, 1946. 575 p.

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