Eric-Jan Wagenmakers
Department of Psychology
University of Amsterdam
Weesperplein 4, 1018 XA Amsterdam, The Netherlands
EJ.Wagenmakers@gmail.com

Telescopic review (2 or 3 paragraphs) of

Rex B. Kline (2013). Beyond Significance Testing: Statistics Reform in the Behavioral Sciences (2nd ed.). Hardcopy, 349 pages

Throughout the behavioral sciences, statistical inference rests almost exclusively on the Fisherian *p* value. This may seem remarkable, as the limitations of *p* values are known to behavioral scientists at least since Edwards, Lindman, & Savage (1963, *Psychological Review*). But what are researchers to do once they abandon the *p* value? The book by Kline (revised and updated from its first edition in 2004) attempts to provide alternatives to *p* value inference and advocates the use of confidence intervals, replications, and meta-analyses.

The book consists of ten chapters divided across three parts: (1) "Fundamental concepts" lists *p* value fallacies and promotes estimation procedures; (2) "Effect size estimation in comparative studies" discusses the details of effect size estimation for popular designs such as ANOVA; (3) "Alternatives to significance testing" consists of two chapters, "Replication and meta-analysis" and "Bayesian estimation and best practices summary". Each chapter is followed by exercises and is suitable for a graduate course in behavioral science statistics.

The book's contents is reasonable, clearly presented, and accurate. A future edition might eleborate more on the crucial distinction between exploratory (hypothesis-generating) research versus confirmatory (hypothesis-testing) research; blurring this distinction is a much greater statistical sin than, say, omitting a Greenhouse-Geisser correction. The chapter on Bayesian "estimation" is (luckily!) mostly about the Bayes factor. The author covers the Bayesian material well, and observes that "Once some fundamentals are mastered, Bayesian hypothesis testing is closer to intuitive scientific reasoning than significance testing." (p. 291). The behavioral sciences are in the midst of a fascinating statistical transformation, and this book will help practitioners embrace concrete alternatives to the *p* value.

Eric-Jan Wagenmakers
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