Series Editor's Note

I have known David Kaplan for a number of years now. We are both members of the Society of Multivariate Experimental Psychology and the American Psychological Association; we also served together on an Institute of Education Sciences standing review panel and overlapped as Associate Editors for *Multivariate Behavioral Research.* He and one of his students also contributed a terrific chapter to one of the handbooks that I edited. When I see him at the annual conferences of these societies or at panel meetings, he is regularly engaged in deep intellectual discussions with others in attendance because they seek him out for his guidance and input on their own research. I have benefited from his scholarly acumen in this manner a number of times. Given my admiration and respect for him, when David first mentioned that he would like to contribute a book to the Guilford series Methodology in the Social Sciences, I was elated. When he mentioned that the book would be about Bayesian procedures, I was even happier. When he mentioned that he would use the R software platform for all of his working examples, I reached the peak of elation.

David Kaplan is in a very elite class of scholar. He is a methodological innovator who is guiding and changing the way that researchers conduct their research and analyze their data. He is also a distinguished educational researcher whose work shapes educational policy and practice. I see David's book as a reflection of his sophistication as both a researcher and a statistician; it shows depth of understanding that even dedicated quantitative specialists may not have and, in my view, it will have an enduring impact on research practice. David's research profile and research skills are renowned internationally and his reputation is

globally recognized. His profile as a prominent power player in the field brings instant credibility. As a result, when David says Bayesian is the way to go, researchers listen. Now his book brings his voice to you in an engaging and highly serviceable manner.

Why is the Bayesian approach to statistics seeing a resurgence across the social and behavioral sciences? (It's an approach that has been around for some time.) One reason for the delay in adopting Bayes is technological. Bayesian estimation can be computer intensive and until about a score of years ago the computational demands limited its widespread application. Another reason is that the social and behavioral sciences needed an accessible translation of Bayes for these fields so that we could understand not only the benefits of Bayes but also how to apply a Bayesian approach. David is clear and practical in his presentation and shares with us his experiences and helpful and pragmatic recommendations. I think the Bayesian perspective will see a spirited adoption now that David has penned this indispensable resource. In many ways, the zeitgeist for Bayes is favorable—because researchers are asking and attempting to answer complex questions.

The blind empiricism of frequentist thinking is giving way to a modeling perspective. Complex theoretical models abound in social science research. Such models are most informative if the modeler has a strong theory and good data. Some analysts will argue that data should not get in the way of good theory and others will argue to never let theory get in the way of good data. Neither position, however, will yield useful and generalizable findings. An informed dialogue with data—the heart of the Bayesian perspective—is essential for good data models. The theory that drives the modeling endeavor derives from the modeler's intuitions, born from experience and informed by the extant literature. These intuitions are coupled with an informed understanding of the utilized design and the acquired measures. These critical ingredients are carefully mixed to specify a Bayesian statistical model grounded in prior knowledge and insights. The model is then estimated against the data and the conversation thereby begins. As an iterative process, finalizing a statistical model is a process of commensuration. Model modifications must balance improvement in model fit and estimation precision with the verisimilitude of any model changes. Model modifications are statements of theory that emerge when the modeler has carefully balanced errors of the type I and II variety. The modifica-

tions must be reconciled in the context of the larger model and the broader literature. Blind allegiance to theory or unequivocal adherence to data—hallmarks of traditionally trained researchers—will not deliver useful knowledge. Optimal gains in knowledge can only occur when we engage in an informed dialogue with data.

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