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Book Review: The Chicago Guide to Writing About Numbers

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BOOK REVIEW

The Chicago Guide to Writing About Numbers. By Jane E. Miller. Chicago: University of Chicago Press, 2004. 312 pp. Cloth \$45.00. Paper \$17.00.

After the presidential election in 2004, dozens of lay and professional social scientists rushed to produce studies detailing possible explanations for Bush's victory. The Internet enabled these studies to be quickly published and critiqued by a wide audience. One of the more prominent studies was produced by a team at Berkeley, led by Michael Hout (Hout et al. 2004). Keith Olbermann (2004), a journalist, wrote in his blog that "most of the paper is so academically dense that it seems to have been written not just in another language, but in some form of code." According to Olbermann, the study was "deep-woods mathematics," and only the summary was understandable. Part of the reason for this is built into the process of scientific knowledge accumulation: If every paper had to explain what an ordinary least squares regression model was or what *dependent variable* meant, journals would be hundreds of pages long and boring for those with any sort of methodological training. Awkward writing, however, also plays a part in making quantitative articles hard to read, just as bad writing affects other forms of academic writing.

Social scientists can turn to two kinds of reference works for help with writing. At one end are books that offer general advice about the writing process, such as Howard Becker's (1986) *Writing for Social Scientists* on the habits and routines of writing and rewriting. At the other extreme are volumes that provide specifics on proper citation strategy (e.g., American Sociological Association 1997) or what statistics to include when reporting the results of a one-way ANOVA (e.g., Morgan, Reichert, and Harrison 2002). Unfortunately, few works bridge the gap between these two extremes. Unfortunate,

because it is often in the reporting and analyses of things such as one-way ANOVAs where reading academic writing becomes particularly burdensome.

Jane E. Miller's *The Chicago Guide to Writing About Numbers* spans both categories of reference works. She combines an overall theme of clear and concrete writing with specific sections on how this can be implemented for a variety of audiences. The book includes general advice about discussing quantitative findings, along with specific advice on producing tables, charts, and presentations. Miller's target audience is broad, including not only quantitative social scientists but also journalists, policy wonks, and qualitative researchers who include some numbers in their work. The book is part of a two-book series. This volume focuses on writing about basic one- and two-variable statistics, while a forthcoming companion volume covers multivariate statistics. I would recommend the book to be a part of one's reference library, especially for those who publish or present outside of academic journals, as the book gives many clear examples for explaining statistical concepts to lay audiences.

In Chapters 2 and 4, Miller presents 12 general principles for writing about numbers. While some of the advice is familiar to those who have taken a composition and rhetoric class (e.g., "set the context" and "define your terms"), others are specific to quantitative writing. Miller's book is designed as a reference tool for a variety of types who deal with numbers. Some sections seem designed to help journalists translate scientific jargon to a general audience; others are for researchers writing up results for academic journals. Unfortunately, the book is not organized to let each of these different audiences quickly access the relevant materials, and these chapters highlight this tension. While the discussion of different types of variables is quite basic, Table 4.2, which provides guidelines on the number of digits and decimals to use, should be a standard reference.

Chapter 3 provides a general overview of causality and significance, similar to what one would find in an introductory statistics or research methods textbook. While much of this chapter is aimed toward those who are new to the topics or need a thorough refresher, the discussion of causality includes a useful section on how to report causality and statistical significance to both statistical insiders and outsiders. The chapter ends with a reminder to report the substantive

significance, or lack thereof, of any findings, in addition to its statistical significance.

Chapter 6 is the most useful of the chapters offering specific advice. It concerns the construction of tables. While Miller does not thoroughly explain when one should use a table, the how is given in detail, including rules for table titles, column headings, variable ordering and labels, decimal places, and alignment. Like myself, Miller is a fan of the tables produced by the Census Bureau, and the advice she gives allows readers to construct similarly useful tables. Other useful sections include the following: Chapter 5 on quantitative comparisons, covering what to use as reference values and when to use relative change or difference as opposed to absolute change or difference; Chapter 8 on choosing an example; and Chapter 9 on writing about distributions and associations.

Chapters 10 and 11 concern writing introductions, as well as sections presenting data, methods, results, and conclusions. As in other sections, these chapters include several examples in which “poor” writing is made “better” and “best.” While none of the examples comes from actual academic writing, the “poor” examples are not straw men. In most cases, Miller improves the sentences by adding context and providing the substantive meaning for each of the statistics being reported. I would recommend these chapters to those struggling with these parts of the academic genre, as Miller provides clear guidelines for crafting each section of the paper.

Chapters 7 and 12 concern charts and presentations. While they do provide some useful pointers, the chapters do not go far enough in challenging academia’s reliance on letting Microsoft presets dictate the form of our outputs. One does not have to be a card-carrying follower of Edward Tufte’s work on charts (2001) or PowerPoint (2003) to object to some of the advice and examples given. The pie charts in Figure 7.2, for example, have a poor ratio of the amount of information given versus the amount of ink and page space used. This chapter provides best practices for implementing each of the charts that are available in Microsoft Excel, which is unfortunate, as computer users, especially those who are working with numbers, have a lot more flexibility in their graphical display of information, especially in statistical programs such as Stata and R. Similarly, the discussion of presenting statistical information in talks in Chapter 12

assumes and endorses a reliance on PowerPoint slides in presentations without questioning whether or when it enhances a talk.

As noted above, Miller's book offers advice to a wide range of readers, and as such, most readers will probably end up skimming about a third of the book that is either too basic or irrelevant to the task at hand. The specific guidelines that Miller presents for tables and the general advice on writing clarity and selecting appropriate examples, however, make this a book to keep within arm's reach when writing up quantitative results.

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