specific, real, and practical situations, such as user studies, adequate hours, multiple copies, parking, and photocopying, than about basic research. A substantial section is later devoted to applied research, and the author even says that "There is no good reason to assume that basic and applied research are mutually exclusive," and applied research "can validate theory and lead to the revision of theory." (p. 45) With that we agree.

One could quibble about the word "Methods" in the title. "Methods," to this reviewer, include empirical procedures used to describe data or test relationships between variables. Some of the major procedures are mentioned — t-test, analysis of variance, chi-square — but one does not learn how to use them in this book. This is not criticism for leaving them out. "The text is not . . . a cookbook. . . ." Rather it is a reproach for expecting them to be included. The book is really an expository checklist of topics (not "issues," the author's term) to be considered by the researcher — and a good checklist it is. Some helpful sections in the chapter "Developing the Research Study" include Formulating Hypotheses, Validity and Reliability, and Selecting the Research Method. "Other Types of Research," including Qualitative, Operations, Systems Analysis, Modeling, and Bibliometrics, are also mentioned. Chapters on Survey Research and Sampling, Data Collection Techniques, Experimental Research, Historical Research, Analysis of Data, Writing the Research Proposal, and Writing the Research Report contain fairly standard material. More apt titles might have been *Introduction to Empirical Research in Librarianship*, or *An Expository Checklist for Conducting Empirical Research in Libraries*.

The author grants that anyone seriously interested in doing rigorous statistical research should go elsewhere, and mentions several statistical texts.

To criticize this book for its omissions would be to reproduce all the books and all the journals ever written on how to do and how not to do research. George Sarton is long gone. Without his prudent counsel, where does one begin?

Deficiencies in library research go deeper than the books we write or the student we attract. How do we overcome the fear of mathematics, the widespread notion that statistics is a tool of liars — that you can "prove anything with statistics," and the inability to distinguish between science and technology? How do we counter the common practice of making inferences from descriptive studies without using inferential methods? One could go on. These deficiencies are society-wide. Rigorous research ultimately has nothing to do with methods. The best research comes from the need to know, from the excitement of discovery, from fundamental skepticism, from ruthless objectivity, from disinterest in results and from the need to understand. No book can teach that. Still, we need books on basic research methods, however modest.

School of Information and Library Studies   WILLIAM E. McGRATH
University at Buffalo
Buffalo, NY 14260

The Design of Bibliographies; Observations, References and Examples. E. BERGER. (Bibliographies and Indexes in Library and Information Science, Number 6). Greenwood Press, Westport, CT (1992). x + 198 pp., $85, ISBN 0-313-28425-3.

The idea behind this book is an ingenious and useful one, that is, to join together principles of type design with those relating to the construction of bibliographies in order to develop an aesthetic framework for the physical design of bibliographies. Bridging as it does several fields of endeavor — type design, organization of information, history of books and bookmaking — the work is bold in its ambition to synthesize these only loosely related specializations.

The work, which should more accurately be entitled *The* Physical *Design of Bibliographies*, begins with a 48-page essay attempting to cover book design, the shape and content of bibliographies, and computers and desktop publishing. Following is a 274-item annotated bibliography, and an appendix consisting of "facsimile examples" of published bibliographies accompanied by author's observations. With index, this compilation amounts to a 198-page treatment of the topic at $85 a copy.

Admiring the bravery of the attempt to cover so many fields at once, and noting the earnestness of the author in the almost autobiographical remarks and annotations, one wants to like this book. Its serious shortcomings make that hard to do.

Given the engaging style of the preface, one is surprised that the essay is more compilation than exposition. Quotes abound, but they are only awkwardly and artificially worked into prose that is in format more encyclopedic than narrative. One easily imagines the categorized note cards from which the author worked. But style is not of the essence here. What of content?

Here, too, one is surprised at a mixture of admirable sophistication in type design sources, combined with only a superficial understanding of the principles of bibliography as set forth with such profundity by the author's mentor, Donald Krummel, and extraordinary naiveté about principles underlying the organization of information and the basics of computer use in publishing. It is to the author's credit that he attempted to bridge the gaps between fields, but it would have been to his advantage to engage a few experts in fields outside his own to help him with the technical details. The hand of an editor would have been appropriate here. One can only assume that Greenwood's role as publisher was more technical than substantive.

A knowledgeable editor, for example, might have made these suggestions to the author:

- Random observations on the design of specific bibliographies should be placed in some overall framework of criticism.
- Legibility of typeface and design as a concept may vary with time and place. Absolutes are questionable, even when they come from the pens of typographic notables.
- The *purpose* of a bibliography determines its content and form, even before a consideration of the characteristics of its intended readers.
- Annotations *may* be evaluative, descriptive, or even expressive of a specific point of view or interest. The author's seeming preference for non-evaluation (p. 36) shows only a narrow understanding of the principles of abstracting and indexing.
- Annotations need not *always* be — in fact, should probably *never* be — "as long as the publisher will allow" (p. 36).
- A discussion of format, and especially punctuation, should show some acknowledgement of AACR2.
- It is not money alone that makes *The Stinehour Press* bibliography (p. 127) notable for design. There *is* craft, and there *is* taste!
- Even if said with tongue-subtly-in-cheek, one should think carefully about lumping librarians with "other intermediate agents which conspire to thwart our excellent work" (p. 28).
- Indexing requires more than the few words devoted to it here. The relationship of indexing to classification should be explored, as should the role of classification in bibliographic organization. There is a vast body of theory and literature here that deserves review and presentation.
- A book on bibliography should make clear the different needs of descriptive and enumerative tools; the selection of data elements depends upon such distinctions.
- It is highly questionable today to defend the use of typewriters as appropriate technology for the production of bibliographies, however frequently and ingeniously this relatively primitive technology may have been used in the past.
- Given the role of computer technology in printing, bibliographic and otherwise, this topic deserves far more development than is offered here.
- Critical remarks about the design of existing bibliographies are not well supported by somewhat fuzzy reproductions of those works.
- The reader will question the inclusion of so many items in a bibliography that are "not seen."
- Appeal to the author's "intuition and experience" (p. 12) as reasons for design preferences are generally unconvincing.
- Although judgments of design are largely a matter of taste, the author might be asked to reconsider the use of so thin a (sans-serif) letter in bibliographic headings, compared with the fairly thick-lined (serif) face used for annotations.
- Some page numbers almost run off the sheet (pp. 98, 99, 101, for example).

It should be said, after all, that bibliographers are terribly picky people. This reviewer, despite good intentions, is no exception. Berger should be congratulated for daring to speak on so broad a topic to so opinionated and persnickety an audience.

The merit of Berger's treatment is the joining of topics that belong together, but are too seldom unified. His arrangement and general approach draw from the separate conventions of these fields; they make sense and constitute a reasonable structure for future discussion. As a pioneering work, Berger's treatment falls short in some details — and especially in its theoretical underpinnings — but the effort was worth the considerable pain that Berger alludes to in his very personal comments. Although one might not like or agree with Berger's contentions, even the skeptic can recognize the potential of this work to stimulate a new approach in a too often turgid discipline.

School of Library and Information Science
Catholic University of America
Washington, DC 20064

DEIRDRE C. STAM