

BOOK REVIEWS

The MARC Pilot Project; Final Report . . . prepared by Henriette D. Avram. Washington, Library of Congress, 1968. 183 pp. \$3.50.

MARC Manuals Used by the Library of Congress prepared by the Information Systems Office, Library of Congress. Chicago, American Library Association, 1969. 335 pp. \$7.50.

The first of these two important publications is a technical report of high quality. Its purpose is to describe in detail the history, objectives, system design, operation, costs, and findings of the experimental pilot project. It attains its purpose admirably; this report will long be the classic document on the first major experiment of the use of a machine readable cataloging record by a group of libraries.

Mrs. Avram has included sufficient detail to enable the reader to understand exactly how the project operated. Procedures could be reproduced from the information given. For the many who will be using MARC I or MARC II data for experiment or operations, complete information on both formats is included.

Four calculations of input costs yielded unit costs ranging from \$2.26 to \$1.31. If the cost of computer processing is subtracted from \$1.31, the result is \$.99, or double the approximate average of conversion costs reported from several other centers.

Reports from seventeen participants constitute an appendix. Some accomplished nothing, others experimented with the tapes, while a third used the data in routine operations. Of the participants' reports, those from the University of Toronto Library and the Washington State Library are the most detailed and contain most useful statistical data.

MARC Manuals is an indispensable publication for any library contemplating use of, or using, MARC II tapes. The manuals are four: 1) "Subscriber's Guide to the MARC Distribution Service," 76 pp.; 2) "Data Preparation Manual: Marc Editors," 218 pp.; 3) "Transcription Manual," 22 pp.; and 4) "Computer and Magnetic Tape Unit Usability Study," 18 pp. This publication is the master guide to use of MARC II records.

The Government Printing Office required three-quarters of a year to produce *The Marc Pilot Project* while anxious users waited. The American Library Association needed hardly a month to produce the *MARC Manuals*. Admittedly this publication performance is new for ALA, but it should receive long and loud applause. Computerization has introduced a factor of timeliness into publication, and it is gratifying that ALA recognizes the fact.

Frederick G. Kilgour

Bibliography of Research Relating to the Communication of Scientific and Technical Information. Edited by Jay Hillary Kelley, Charles L. Bernier and Judith C. Leondar. Bureau of Information Sciences Research, Graduate School of Library Service, Rutgers, The State University. Rutgers University Press, New Brunswick, N. J. 1967. 3510 pages.

Do we need a review of a bibliography already two years old? The Editor of JLA says yes. More importantly, can we find good use for the bibliography it reviews? In this case, yes. Its scope is both less and more than the title indicates: less, because "communication" here means documentation and excludes direct, immediate communication; more, because it extends far beyond merely the documentation of science and technology to information processes *per se*, though not to all of information science. Psycholinguistics and epistemology seem to be ignored, and logic is given short shrift.

From the seven existing major bibliographies listed at the end of this review, and from twenty abstracting and indexing services, and nearly 300 journals, the compilers have selected items published during the years 1955-1965, in nine categories: 1) research results, 2) new theories, 3) identifiable breakthroughs, 4) incremental gains in information sciences, services, and systems, 5) developments identified as new by the authors reporting them, 6) comprehensive reviews, 7) bibliographies, 8) evaluative articles, and 9) directories to current research. Excluded are items of purely historical, biographical, speculative or entertainment value, as well as bibliographies or literature surveys of fields outside Information Science (IS).

These criteria, and the book's subject classification scheme, are themselves useful and they reflect considerable thought, even though the user is sure to find instances where: 1) items included do not seem to measure up to the criteria or 2) he will disagree with the structure of the classification scheme. However, these faults are inherent in the bibliographic activity, inexact science that it is.

The introduction offers as the project's rationale some interesting and provocative hypotheses. One relates to the epidemic nature of progress in IS—i.e., that progress comes through a few identifiable discoveries. More basic is their assumption that "well-known bibliographies, reviews, workers, and organizations were identifiable and needed representation." (It is possible to argue that if identifiable through literature, they are likely to be already identified, at least by the people who really need them, and that a general bibliography is not needed. But the worker oriented to the literature of IS—as documentalist, librarian, or as teacher, student or researcher in IS, will probably be glad anyway to have so much of it in one place.)

Selection is slanted to the most current work, on the assumption that viable earlier contributions will be identified through citations. The editors postulated that "plagiarism, duplication, and repetition of work were so

rampant that many potential items for the bibliography could be rejected on this basis." By creating in advance a classification scheme for IS, and then placing the items selected in the classes, they predicted that it would be possible to identify gaps in the field, where more research is needed. The means for doing so are not discussed and left unanswered is the question: How do we determine the right amount of publication for each class?

The result is a bibliography—of some 3700 items chosen from about 30,000 considered—intended as a guide rather than an exhaustive compilation. If the judgments of the editors stand the test of time, having less is more. The prospect of obsolescence, however, haunts this bibliography as it does all others, and it highlights the need for bibliographic tools that can be more easily updated by both addition and purging, like the ill-fated *Automation Reporter*, a looseleaf service in this field, discontinued for lack of support. For a profession which seeks to solve other people's information problems, IS people are often slow to get the word. But this is an indictment of the whole field, not specifically the group at Rutgers, who have provided a useful tool, if not the most useful one imaginable.

Efficient use of the book is likely to be impaired by its appearance. Photo-offset reproduction of greatly reduced typescript is not ideal for a reference book such as this. Where economy dictates its use, a little imagination and quality control, not evident here, can do a great deal to overcome its faults. Here, the printing is too light. There is nothing done to set off such elements as author or title. Item numbers appear at the right margin in all cases; hence they are half the time buried in the gutter.

The ratio of pages of index to text is appropriately high—though of course no one knows what an optimum would be. There is about a page of author index to four pages of bibliography, and a slightly greater proportion of subject indexing. Shortcomings aside, this promises to be a useful bibliography. The editors do not make it clear if they intend it to be more than that—for example, the basis for a study of formal characteristics is IS literature. If not, they should consider doing so.

The seven major bibliographies mentioned above were completely searched for this bibliography. They are:

Balz, C. F. and R. H. Stanwood, compilers. *Literature on information retrieval and machine translation*. IBM, 117 pp., 2965 ref., 1962.

Janaske, P. C., ed. *Information handling and science, information, a select bibliography 1957-1961*. Washington, D. C., American Institute of Biological Sciences, 1121 ref., 1962.

National Bureau of Standards, Research Information Center and Advisory Service on Information Processing (RICASIP) [Computer print-out of references and indexes] Washington, D. C., National Bureau of Standards, 11 parts, approximately 18,000 ref., June 16, and July 15, 1965.

Neeland, F., ed. A bibliography on information science and technology for 1965. Santa Monica, Calif., Systems Development Corp., 3 parts 1750 ref., 1965.

Snodey, S. R., compiler. Information retrieval: systems and technology, a literature survey. North American Aviation, Inc., Space and Systems Div., 272 pp. 1914 Rev. (SID 63-199), Jan. 15, 1963.

Spangler, M., compiler & ed. General bibliography on information storage and retrieval. Phoenix, General Electric Co., Computer Dept., 1550 ref., 1962.

Zell, H. M. and R. J. Machesney, compilers & ed. An international bibliography of non-periodical literature on documentation and information. Oxford, Robert Maxwell & Co. Ltd., 1555 ref., 1965.

Joseph C. Donohue

Evaluation of the Medlars Demand Search Service, by F. W. Lancaster. U. S. Department of Health, Education and Welfare, Washington, D. C., January 1968. 276 pp.

MEDLARS, a computer-based information storage and retrieval service of the medical literature, represents a very significant effort in the management of the information explosion in the health sciences. The MEDLARS system in itself is quite complex and this study represents an attempt to evaluate the effectiveness of the storage and retrieval from the data base which now numbers more than 800,000 citations from 2,300 journals from all over the world dating since January 1964.

The study was designed to evaluate the factors related to the requirements of the user: coverage, recall power, precision, response time, format; and the effort that the user must expend to evoke a satisfactory response from the system. Emphasis in this report was upon recall and precision. The study was based on 25 to 30 retrieved citations, the effectiveness of which was evaluated by the users.

Of 299 searches studied, the system was operating at 57.7% recall of the major relevant citations from the available data base, and 54.4% precision as judged relevant by the requesters. The more comprehensive the recall, the less precise is the output. In addition to a determination of effectiveness, equally important was analysis of the factors contributing to a failure. The principal causes were related to the failure of the index language, the indexing subsystem, searching, and the interaction between the user and the system. The author concludes with a number of considerations for enhancement of the effectiveness of the MEDLARS system.

The author and the advisory committee are to be commended upon the depth of their evaluation, the objectivity of their appraisal and their thoughtful suggestions for improvement. Such a complex information system should be under continuous self-appraisal if it is to meet the urgent

needs of the scientist as he deals with the burgeoning health sciences information.

John A. Prior

Library Effectiveness: A Systems Approach, by Philip M. Morse. The M.I.T. Press, Cambridge, Massachusetts, 1969. 207 pp. \$10.00.

As professor of theoretical physics at the Massachusetts Institute of Technology, as a director of M.I.T.'s Computing Center, Operations Research Center, and Project MAC, and as the first president of the Operations Research Society of America, Philip Morse has been a key figure in the many scientific developments which are now playing such an important role in the design of information systems. His abiding interest in the analysis and improvement of libraries is less well-known, and it is fortunate that he has made available a detailed account of his seminal work in this area. The present book had its origins in a series of student projects which used the M.I.T. Library as a laboratory for the application of operations research methods. Morse has selected several mathematical models for exposition with ample verbal explanation of their theoretical implications and their practical application in explaining and predicting user behavior in the M.I.T. Science Library. The number and kinds of tasks performed by library visitors is shown to follow a geometric-multinomial pattern, not unlike a game of craps. The essentially random demand for, and utilization of, library services is shown to give rise to a queuing or interference situation not unlike a telephone switchboard, where models are available to help predict the effect of providing duplicate services, usage restrictions, and reservations, and to help account for the possibilities of the user's balking or becoming discouraged. Finally, the random usage of books is shown to have a mean bias with age, especially in the early years, which can be modelled by a Markov chain whereby book usage settles down in an exponential fashion to some residual or "steady state" level of usage in old age. The model is used to examine book retirement policies.

In all of these models approaches employing probability are emphasized, but the relationships are kept simple enough to allow for meaningful comparisons and combinations of different classes of users and library materials. Some of the observations Morse is able to make about the differences among biologists, chemists, mathematicians, and physicists as library users are among the most interesting results of his analysis. Unfortunately, the absence of statistical tests of significance makes it necessary to accept many of these results as useful hypotheses in need of further validation. On page 141, Morse says that he anticipates "comments that are sure to be made about the cavalier way we have handled the model and the data. . . . Our object was to arrive at a model simple enough so results could be obtained graphically or by slide rule. Accuracy is not

often important in reaching policy decisions: order-of-magnitude figures are far better than none. . . . But, as the library becomes more 'mechanized' or 'computerized' these data will become enormously easier to collect, *if the computer system is designed to gather the needed data,*" (author's italics). He goes on to say: "It is the author's belief, based on discouraging experience, that neither the computer experts nor the librarian (for different reasons) really know what data would be useful for the librarian to have collected, analyzed, and displayed, so he can make decisions with some knowledge of what the decision implies. What is needed before the computer designs are frozen is for models of the sort developed in this book, to be played with, to see which of them could be useful and to see what data are needed and in what form, in order that both models and computers can be used most effectively by the librarian."

Morse has addressed this book to both librarians and system analysts as an experimental but much needed venture. To the analyst it represents a good first attempt at modelling the complexities of a library and points the way toward more sophisticated techniques and more experimental work. To the librarian it provides some alternative to blind automation and a glimmer of hope that the evaluative techniques will come forth that are so badly needed to judge and control the efficacy of the new computer-aided systems being proposed.

F. F. Leimkuhler

The Role of the Library in Relation to Other Information Activities: A State of the Art Review, by Anne F. Painter. U. S. Army, Office of Chief of Engineers, Washington, D.C. 1968. (CTISA Project, Rt. No. 23.)

At one time the controversy over libraries and "information centers" was of interest to many of us. The "Wienberg Report" could draw a crowd at any professional meeting but, thank goodness, such issues lose their interest and, one hopes, we go on to more productive work.

Differentiating between libraries and "information centers" does not seem to this reviewer to be art. Nor does it seem to be in such a state as to be worth reviewing. Nevertheless, Professor Painter has produced a large bibliography, arranged both alphabetically and by subject, preceded by some fifty rather wordy pages. The general conclusion—that libraries and "information centers" are and should be performing the same tasks to a greater and greater degree—speaks to an issue no longer of great interest. A literature survey of any kind can get tedious and one which reviews that written about a dead issue, as this publication does, becomes extremely dull. The ponderous style of official reports is present and the effort required to wade through the jargon is not rewarded by

fresh insight nor perceptive evaluation. The publication is recommended to those who collect bibliographies on the subject and collectors of library science who exercise but little selectivity.

Hugh C. Atkinson

BNB MARC Documentation Service Publications Nos. 1 and 2. London, Council of the British National Bibliography, Ltd., 1968. Part 1, £2; Pt. 2, draft.

These admirable publications, presented by R. E. Coward, describe, explain, and discuss essential characteristics of BNB MARC records. They constitute a more comprehensive presentation of information about MARC than has heretofore appeared as an integrated exposition. They are particularly valuable for their explanations of details of MARC format and of cataloging practices. In addition, Part 1 contains useful and informative treatises on filing, subject and other added entry data.

R. E. Coward prepared these documents for users of BNB MARC records, but users of any variety of MARC records will find stimulating and helpful discussions. Since it appears most probable that BNB MARC records will be used beyond the perimeters of the United Kingdom, the handbook areas of these two documents will receive wide use.

The description and explanation of the communication format is fully and lucidly presented. BNB has introduced a few elaborations of LC MARC that are imaginative and effective. For example, Part 2 describes an attractive technique for elimination of an initial article in a title when sorting is on title. The number of characters in the article and the space following the article is determined, and this number is placed in the otherwise unused second indicator position. This information is not on the LC tapes, and would certainly be a welcome and helpful addition.

Part 1 contains discussions and solutions of filing problems that occupy two dozen pages. Since the British National Bibliography appears in bookform, its filing problems are numerous and severe. The techniques for solving their problems are effective and are presented with commendable clarity. Of course, not all problems of arrangement of entries in bookform catalogs are solved, but the procedures for solution will be useful in application to architecture of other filing orders.

Little has been written about subject content of MARC records, and most of what has appeared is also in Part 1. Coward briefly describes subject-heading and classed subject content of MARC without pushing these two ancient jousting into the lists. However, it can confidently be predicted that MARC will become a new terrain for this heroic arena.

The discussion of added entries, although brief, is also novel for a MARC document. However, the boundaries of a new battleground are

discernible in the statement that "author and title have proved to be so cumbersome and prone to error that number systems have proliferated to take their place." Those librarians whose main objective is participation in the programs of the community of which their library is a segment, will surely protest that the day is not in the foreseeable future when scholars and other users will substitute Standard Book Numbers for author-title citations.

Part 2 of the publication supplements Part 1 with provision of detailed information on magnetic tape specifications. It also increases compatibility between BNB MARC and LC MARC so that no significant differences exist. Where BNB MARC does not include fields in LC MARC, the LC fields are nevertheless described, thereby aiding either British or American users in processing MARC records from either source.

These two publications contain much useful information about MARC records that is not available elsewhere. In addition, they contain effective emendations of MARC that will stimulate all MARC users to develop further improvements. Richard Coward and BNB are to be commended for a major contribution to MARC literature.

Frederick G. Kilgour

Library & Information Science Abstracts. 1 (Jan.-Feb. 1969). London, The Library Association. Annual subscription £6 6s.

Recently two authors described librarianship as "paralyzed by decades of philosophical and literary argumentation." It is correct to state that until the past few years library literature has contained little, if any, new knowledge. However, the literature of today is beginning to swell with reports of new investigations and applications—reports which the modern librarian must make part of his armamentarium, just as the modern physician must learn of new developments if he is to be increasingly successful in prevention and cure of disease. Indeed, worthwhile library literature has increased to a magnitude that requires regular perusal of abstracts to "keep up." Given this circumstance, it is a pleasure to welcome an excellent new abstract journal.

Library & Information Science Abstracts (LISA) is not a mere rechristening of *Library Science Abstracts*. To be sure, LISA evolved from the latter, and must be thought of as a new generation. The Library Association publishes LISA but ASLIB has joined forces with LA in cooperative sponsorship. LISA now boasts a fulltime editor with some staff at LA, where responsibility for abstracting in library science resides. ASLIB furnishes the information science abstracts under a contract with LA.

It is the intent of the publishers to use author abstracts or to have

staff do abstracts in English and to call on a panel of abstractors that can read foreign languages. The goal for publication lag is six to fourteen weeks. If lag time can be kept within these limits, LISA will achieve at least one notable accomplishment.

The main arrangement of abstracts is the British Research Groups' *Classification of Library Science*, which appears to be adequate. The subjects are much more narrow than those that *Library Science Abstracts* employed. Cross references are included in the form of the citation with a reference to the location of the abstract—a most helpful procedure. An author index and a subject index is in each issue.

The first issue contains 358 abstracts, so that it can be expected that some two thousand will appear annually. The abstracts are the usual indicative variety found in abstract journals and are well done. The LA Library will provide photocopies of the original at page rates varying from 4 1/d to 1s 0d, depending on size of page.

LISA will cover proceedings, symposia and a few monographs as well as journals. The first issue lists 251 journal titles being covered—a twenty-five percent increase in numbers of titles over *Library Science Abstracts*. However, some titles in LSA have been dropped, so that LISA covers approximately a hundred new journals, including titles in computation and information science as well as librarianship.

LISA is an excellent abstract journal which every librarian who wishes to grow with his profession must read and use effectively.

Frederick G. Kilgour