

TAUBE, MORTIMER and Associates. *Studies in Coordinate Indexing*. [Washington] Documentation, Inc., 1953. 110 p. \$3.00.

In a recent paper, Jesse Shera¹ says that any system of bibliographic organization "must be designed to make readily available the extensive and increasingly intricate accumulations of technological and operational literature as well as the literature of scholarship." He feels that "failure on the part of the librarian to recognize the importance of [the] radical change in his role in the modern industrialized and highly specialized society has resulted in a cultural lag on the part of librarianship that could, if it is permitted to continue, result in institutional obsolescence. Fortunately, there is some evidence that a process of adaptation has already begun that will bring the library into closer conformity to the contemporary cultural pattern. . . ." Shera goes on to deplore the "devastating schism" which has arisen between documentalists and librarians, and hopes that it may be eliminated.

I line up behind Shera in this position; the area of "documentation" is the area of librarianship. That there has arisen this new name to describe some very old things is basically an indication of the despair of some of our colleagues in the face of the often deadly ultra-conservatism of the rest of us. In the work here under review, the words "documentation" and "indexing" appear frequently; I equate them with "librarianship" and "subject cataloging." I do not believe there is any significant difference between indexing a periodical article or technical report and subject-cataloging a book; to hold otherwise is to have undue reverence for a mere artifact of format. That apparent differences are readily disposed of was, I believe, demonstrated in my paper of two years ago.²

If Mortimer Taube and other hardy souls persist in their efforts to define documentation as something separate from librarianship, I cannot agree; but I can sympathize with their position, which can be interpreted as a reaction of outrage in the face of the reluctance of traditional librarianship to acknowledge qualitative and quantitative changes in the stuff with which we deal, as well as reluctance or inability to reassess continually the techniques we use for coping with it. If we bemoan the magnitude of the tasks which face us, we should be willing to re-examine critically some of the ancient principles and traditions of our craft, and having made the re-examination, to have the courage to change, if that is what the logic of the situation calls for.

Studies in Coordinate Indexing provides such a re-examination of the area of subject cataloging. It is a loose collection of individual papers rather than a

¹ Shera, Jesse. Emergence of a new institutional structure for the dissemination of specialized information. *American Documentation* 4: 163-73, October 1953.

² Rogers, Frank B. Applications and limitations of subject headings; the pure and applied sciences. (In: *The subject analysis of library materials*, ed. by Maurice Tauber. New York, 1953, p. 73-82)

well-knit treatise which attempts to develop a position by carefully-ordered argument. Of the ten chapters in this volume, four have been previously printed elsewhere, and six have had a limited availability in the form of technical reports prepared for the Armed Services Technical Information Agency.

I would attempt to define coordinate indexing as a system of subject cataloging which capitalizes on the concept of the logical conjunction of ideas (the phrase comes from symbolic logic). In the past we have been very much concerned with the specificity of subject-headings, and with problems of subdivision, into which we have carried over many of the hierarchical concepts of linear classification. Taube is simply stressing the fact that complex ideas are often best expressed, or even solely expressed, by the intersection of two or more widely separated ideas, and by the intersection, or conjunction, of their separate word symbols when an attempt is made to catalog those ideas. He is further stressing the practical difficulties which arise when attempts are made to accommodate all the possible permutations of multiple-term catalog descriptions.

This analysis of the central problem of subject cataloging is simple, straightforward, and readily understandable. There are those who will claim that there is nothing new here; after all, we have always been very much aware of the problems of topical sub-division and cross reference apparatus. I could not go along with such criticism; Taube's analysis has, at the very least, provided a clarification of some important areas previously only dimly and imperfectly comprehended. Once pointed out, the idea is simple; this does not detract from its power.

Taube uses the term "coordinate indexing" generically to describe all systems in which the facility for bringing terms into logical conjunction is given high priority. He would describe all machine systems as variants of coordinate indexing, although here I do not follow his reasoning. He and his associates describe in some detail a particular system of coordinate indexing which they have devised and are advocating; this system is called the "Uniterm" System, and is claimed to have equal suitability for manual and machine applications. The manual system only is described in this book; there is some promise of later machine developments.

In the ordinary subject catalog, we find alphabetically arranged subject-heading guide cards behind which are arranged unit cards, one for each document or book in the collection which pertains to that particular subject. In the Uniterm System, on the contrary, we have one Uniterm card for each subject-heading (this will be qualified later), and on this card are listed the serial numbers of all documents or library pieces which pertain to this subject. This means that, ordinarily, a serially numbered accession record is required. On the Uniterm card the serial numbers are arranged in ten columns, by final digit, to assist in ease of consultation.

The working of the system is best shown by example. Suppose we receive a document on the measurement of the properties of microwaves. We look in our accession record, and assign this document the next available number, which happens to be 489. On the Uniterm card headed "Microwaves" we then enter 489 in the 9 column; we enter the number similarly on the Uniterm card for "Measurement" and on the card for "Properties." Now when a user comes along later to retrieve data on this subject, he will pull the three cards, compare them to see which numbers are common to all three, and will readily find that document 489 answers his requirements. The serious problem of the order of terms, met with in the traditional catalog, does not arise; furthermore, large and important savings in space are made possible.

But dozens of questions immediately come to mind. Of these, I will discuss only two, to indicate some of the difficulties.

The first is mechanical. There are some tough problems involved in the posting of the numbers—placing them on the Uniterm card. There is the problem of insuring legibility and neatness, not so easily overcome without rather cumbersome machinery. There is the problem of getting the numbers on in order, to preserve ease of comparing columns of figures to establish "hits." There is the problem of cards undergoing posting being unavailable for consultation during that period. There is the problem of users removing the cards from the file for comparison, or at the very least, the concentration of cards in an area so small as to be readily accessible to only one user at a time.

The second is the concept of the term used as the Uniterm itself. In the early papers in this book, and in the earlier period of Dr. Taube's work, there seems to have been the idea of establishing various categories of terms, and choosing one or more terms from each category in the process of "subject-heading" a document under the Uniterm system. This idea is very reminiscent of the Ranganathan classification where, in a sense, *all* tables are floating, and are therefore comparable to "categories." It appears that this plan was relatively satisfactory as long as the subject scope of the documents being organized remained narrow. As soon as the scope broadened, however, the idea of categorization broke down. I am afraid that what remains is just the idea of using words as words. To me, the idea of using such words as "high," "low," "measurement," "rate," "methyl," "properties," and the like is appalling. Taube and his associates have wrestled valiantly with this problem, but in my opinion they have not brought it to the mat. They have devised some ingenious and hopeful rules for what they call "free" and "not free" terms, for example, but they are not enough.

Some of the results of such a situation are curious. Oddly enough, the question of homonyms does not seem to be a problem. For example, the word "pulse" is used in one sense in physics, in another sense in physiology, and both senses of

the word might appear in the same retrieval system. No difficulty is likely to result, however, because the ordinary search is going to be a multiple-term search, and the other terms will be controlling. (This reveals, incidentally, another characteristic—the necessity to search under multiple terms in order to obtain maximum efficiency from the system.) But the problem of synonymy is vicious. Suppose, for example we want to make part of our search under the terms "pulse" and "rate," the concept being "pulse rate." How many items that we want would have been entered under "heart" and not under "pulse?"

I am prepared to believe that the mechanical problems can be overcome. Much progress in this direction has already been made. But I cannot believe that the system can ever demonstrate its full potentialities so long as what is being coordinated are just words. In short, ultimately, and soon rather than late, the problem of standard descriptors is going to have to be faced. The larger the system, the sooner the dilemma will become apparent.

It is only fair to state that the Uniterm System is already in operation in many places, notably in certain technical libraries in the aircraft industry, and that the users are enthusiastic. It should also be remembered that the system has potentialities outside the library, as in supply cataloging, inventory control, and medical records; indeed, it may be that some great successes will come in these fields. My interest in the system is sufficient to make me want to give it a trial in some limited area—for example, the cataloging of medical motion pictures, where such diverse data as producer, performer (operator), performance (operation), place (hospital), time, and similar factors might lend themselves handily to such a technique.

There is much more in this slim book which is worthy of comment. The chapter by C. D. Gull on "Substitutes for the Card Catalog," and the second and tenth chapters by Dr. Taube, are of interest without specific reference to the Uniterm System, but simply as provocative essays.

I cannot resist the temptation to quote from *Pickwick Papers* (1836):³

"An abstruse subject, I should conceive," said Mr. Pickwick.

"Very, sir," responded Pott, looking intensely sage. "He crammed for it, to use a technical but expressive term; he read up for the subject, at my desire, in the *Encyclopedia Britannica*."

"Indeed!" said Mr. Pickwick; "I was not aware that that valuable work contained any information respecting Chinese metaphysics."

"He read, sir," rejoined Pott, laying his hand on Mr. Pickwick's knee, and looking around with a smile of intellectual superiority, "he read for metaphysics under the letter M, and for China under the letter C, and combined his information, sir."

I doubt very much, however, that Dickens should be given credit for the genesis of the idea of coordinate indexing. We are all sons and followers, but I

³ Dickens, Charles. *The Posthumous Papers of the Pickwick Club*. Chapter 51. N. Y., Modern Library [c1943] p. 769.

believe Taube deserves the credit here. And I would like to make it perfectly clear, despite my criticism, that it is credit. Since I have quoted from everyone else, I might close this review with one quotation from Taube's book:

It has become fashionable to state that we can get nothing more out of machines than we put into them. This is like saying that since mathematics is tautological there is never any more in the conclusion than there is in the premises. It is certainly true that when we add a column of figures with an adding machine we get an answer that we did not know even though the answer was implicit in the column of figures. Similarly, in the system of bibliographic coordination, by combining various terms, we may get information which, although implicit in the system, was never explicitly recognized.

There are many other such yeasty remarks. We owe Dr. Taube something more than an automatic reaction of approval or disapproval for his ideas, according to the particular rut in which we may happen to be lodged. We have been seeing what havoc this automatic reaction pattern, on the part of both liberals and conservatives, has been playing in the world of politics. We shouldn't let it happen in librarianship.

This book is not provided with an index of any kind.

FRANK B. ROGERS, MC, USA

Science Reference Notes, prepared by the Science Libraries, Columbia University. Volume 1, Number 1, January 1954 (processed)

As welcome as a lighthouse beacon to all who seem adrift on a sea of current publications, this new serial fills a definite need. It consists of an annotated listing, in subject arrangement, of important current reference works received by the Chemistry, Engineering, Geology, Mathematics, Medical, Optometry, Physics, Psychology, and Zoology-Botany Libraries of Columbia University. Sixteen titles are listed in this first issue, ten of which are of direct interest to the medical librarian. The careful annotations present valuable information and are obviously made by those well acquainted with the literature of the fields which are represented.

By a happy coincidence, the reviewer found here the answer to a correspondent's query which was waiting on her desk; from the annotation, it was clear that V.C.O. Hill's *Primates* (Edinburgh, Univ. Press, 1953) would fill the bill.

Examples of other titles which are helpfully described are: Paul Hauduroy's *Dictionnaire des Bactéries Pathogènes . . .* (Paris, Masson, 1953); SLA's *Correlation Index: Document Series and PB Reports* (New York, 1953); M. R. Murray's and Gertrude Kopech's *A Bibliography of the Research in Tissue Culture* (New York, Academic Press, 1953); WHO's *World Directory of Medical Schools* (Geneva, 1953); UNESCO's and WHO's *World Medical Periodicals* (Paris, 1953); and R. S. Daniel's and C. M. Louitt's *Professional Problems in Psychology* (New York, Prentice-Hall, 1953), which title so effectively conceals the fact that it constitutes a valuable guide to the literature of psychology.

The editors make no commitment as to the frequency of *Science Reference*