The Illusion of Omniscience: Subject Access and the Reference Archivist

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CURRENT THEORIES of subject and information retrieval are predicated on the experience and needs of libraries and information centers and do not effectively address the needs of archives. Both libraries and archives seek to aid users in locating information. The problems faced by the two institutions, however, are as different as their materials, organizing principles, and descriptive techniques. A comparison of the two institutions illustrates some of the difficulties facing the reference archivist seeking subject retrieval of archival and manuscript materials arranged according to the principles of provenance and original order.

Archives and libraries differ most obviously in the materials they collect. For the most part, libraries collect books and other published materials which are produced in multiple copies in relatively uniform sizes and formats. Generally, a book is created quite deliberately by an author, as a literary product treating a particular topic. On the other hand, archives accession unique documents which vary widely in size and format. The documents are usually created by many authors as the byproduct of personal and organizational activity. Rarely are they self-conscious literary productions. Unlike a book, which can stand alone as an author's thoughts on a single topic, archival documents generally make sense only as part of a group of records. Record groups reflect the many activities which created them and may be useful for many subjects.

Retrieval of individual books relating to a specific subject is a primary goal for the library, and librarians have devised both classification and cataloging techniques to accomplish subject retrieval. On the other hand, subject retrieval of individual documents has not been a primary goal for most archivists. Library classification brings books treating the same subject together on the shelf, thereby creating one important and powerful mode of subject access. The classification notation gives

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each book a unique number which identifies its primary subject. Any classification scheme assumes a community of users, and the development of the scheme and the location of any given book within it will in part be determined by the perceived needs of the users. For example, a book on the history of religion among American blacks can be located with books on religion, or with books about blacks, or with books about U.S. history, but because the book can be physically located in only one place, only one aspect of the subject treated by the book can be retrieved through the classification scheme alone.

Archivists reject the idea of rearranging documents to fit a predetermined classification scheme. Archivists respond instead to the unique, organic, and activity-based quality of records. Basic to archival arrangement is the canon that records cannot be arranged according to an enumerative scheme but must be arranged according to the principles of provenance and original order, reflecting the processes that created them. The subject matter of individual documents can only be understood in the context of related documents created by the same activity. Records are valuable not only for the information found in them but also for the evidence they provide about the processes that generated them. Consequently, the relationships among activities reflected in the records must be preserved. The archivist is as responsive to the needs of the creator of the record as to later users.

T.R. Schellenberg recognizes that all later users may not find archival order useful but defends archival arrangement according to the principles of provenance and original order:

While this arrangement will not bring together records by subjects that will meet all the research needs of scholars, it is the only workable way of placing records in order while preserving their evidential values on government functioning. . . .The archivist, therefore, should resist any efforts on the part of scholars to induce him to arrange records according to any abstract system of universal subject classification.[1]

Archivists further maintain that a usable original order remains usable. Because human activity created the records and because later users are interested in that activity, retaining records in the order generated by the original activity allows access through analysis of function, a powerful mode of access. Archivists also recognize that many records are self-indexing when original order is maintained. Physical arrangement, however, whether in the archives or the library, can offer only one mode of access. In the office of origin, physical location is usually sufficient to retrieve documents, but it is not enough in the archives. Since no library classification scheme or arrangement of records meets the needs of all users, cataloging of books and description of records are employed to provide intellectual control of the holdings.

In the library, cataloging, like classification, serves two purposes. Library cataloging describes each item according to standardized prescriptive rules and also offers multiple access points—typically author, title, and subject—for the user. Standardized lists of subject headings relate subjects represented in the library to each other by means of

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[1]T.R. Schellenberg, *Modern Archives: Principles and Techniques* (Chicago: University of Chicago Press, 1956), p. 188.

cross references. Standard practice allows for cooperative cataloging and shared information. Archival methods of group description, on the other hand, analyze the function and structure of the records rather than providing item description and multiple access points. Each record group tends to be described as an isolated entity, and there is little standardization among institutions.

American archival institutions and manuscript repositories have used a wide variety of descriptive media; the forms most prevalent today are the inventory or register, the card catalog, and the guide. In purely archival agencies, the inventory quickly became the basic finding aid; the card catalog is rarely found in such institutions. The card catalog is more likely to be found in manuscript repositories, but even there the register is widely accepted as the basic finding aid.

In favoring the descriptive inventory or register, archival agencies which do not use a supplementary card catalog or its equivalent may find it difficult to provide for multiple access points, especially subject access. Manuscript repositories are more likely to use a card catalog or its equivalent to provide multiple access points and subject access. The *National Union Catalog of Manuscript Collections* (NUCMC) serves this function for many manuscript repositories, but not for archival agencies strictly defined.[2]

The repository guide is one solution to the need for multiple access points. Publishing a guide is universally described as a mandatory obligation. The SAA's glossary defines the guide as "a finding aid at the repository level that briefly describes and indicates the rela-

tionships between holdings, with record groups, papers, collections, or comparable bodies of material as the units of entry."[3] A guide, however, is as significant for its index as for its descriptive matter. For many purely archival institutions, the guide index is the only comprehensive, multiple access tool offering a subject approach. The importance of the guide for most archival agencies cannot be overstated, but it is usually recommended for only one of its two vital functions. Too often the index to the guide is a hastily contrived addition to the descriptive matter.

Subject access is achieved in some institutions through the preparation and publication of special subject guides on topics of interest, such as the *Guide to Materials on Latin America in the National Archives* (Washington, D.C.: Government Printing Office, 1974) or various "reference information papers" on special topics. Other kinds of special aids may outline search strategies for common problems presented to the archives. On the national level, subject surveys such as the *Women's History Sources: A Guide to Archives and Manuscript Collections in the United States* (New York: Bowker, 1979), provide access for some users.

Archival methodology has significant consequences for subsequent reference practice. In the library the user is expected to understand the basic principles of classification and cataloging, to use subject entries from the card catalogs, and to retrieve books from the shelves. There is no analogous procedure in most archival agencies.

Archival theory includes a number of assumptions about the user and subject

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[2]The influence of the *National Union Catalog of Manuscript Collections* should be studied and evaluated in this context. See, for example, Richard Berner, "Observations on Archivists, Librarians, and the National Union Catalog of Manuscript Collections," *College and Research Libraries* 28 (July 1968): 276–80.

[3]Frank B. Evans, Donald F. Harrison, and Edwin A. Thompson, comps., and William L. Rofes, ed., "A Basic Glossary for Archivists, Manuscript Curators, and Records Managers," *American Archivist* 37 (July 1974).

access. The archival system is predicated on interaction between the user and the archivist. Indeed, the archivist is necessary, even indispensable, for subject retrieval. The archivist is assumed to be a subject specialist who introduces the user to the relevant records through the finding aids and continues to mediate between the user and the archival system throughout the user's research.

Schellenberg, for example, believes that subject access flows naturally from the archivist's firsthand knowledge of the records. He argues that reference activities should not be segregated functionally because an archivist servicing records must have the firsthand knowledge of the records that comes from processing them. Reference assistance to users should be a logical outgrowth of other archival activities:

An archival institution should be organized, in the main, on a subject-matter, not a functional basis. By this I mean that it should be so organized that its staff will be assigned archival work on the basis of its relation to subject areas or fields of inquiry, not on the basis of its specialized professional nature. A knowledge of the principles and techniques of arranging, describing, publishing, and servicing archives should be developed with respect to particular bodies of archives. . . .By applying the knowledge in this manner, moreover, a special knowledge is gained of the archives—of their

content, their arrangement, their significance for research uses and the like. . . .An archival institution, therefore, should be organized in a manner that will most effectively develop subject-matter knowledge in its staff.[4]

In Schellenberg's view the archivist serves as an indispensable intermediary between the user and the records because, in his words, "No matter how well finding aids are prepared, they cannot impart all the knowledge that is in the head of a well-informed archivist."[5] Richard Lytle confirms this observation. In his analysis of retrieval methods in archives, he found that "retrieval performance scores appeared to be primarily a function of the experience of the searcher with the method used."[6]

In his description of the interaction between user and archivist, Frank Burke emphasizes the personalized nature of research in provenance-based archival agencies. He notes that the records are arranged and described in terms of organization, function, and hierarchy. The researcher, however, usually presents a subject request. Only the archivist with his[7] knowledge of the subject matter of the records and knowledge of the functional and administrative structure of the agencies producing the records is able to match researcher requests with archival material.[8] Richard Lytle sums up the traditional method succinctly:

Subject retrieval in the P (Provenance) Method proceeds by linking

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[4]Schellenberg, *Modern Archives,* pp. 126–27.

[5]T.R. Schellenberg, *The Management of Archives* (New York: Columbia University Press, 1965), p. 109. See also Richard H. Lytle, "Intellectual Access to Archives: Provenance and Content Indexing Methods of Subject Retrieval," *American Archivist* 43 (Winter 1980): 71–72.

[6]Lytle, "Intellectual Access to Archives: Report on an Experiment," *American Archivist* 43 (Spring 1980): 194.

[7]Masculine pronouns are used generically throughout this article.

[8]Frank Burke, "The Impact of the Specialist on Archives," *College and Research Libraries* 33 (1972): 312–17.

subject queries with provenance information contained in administrative histories or biographies, thereby producing leads to files which are searched by using their internal structures.[9]

An example of this interaction between user and archivist is found in the Spring 1980 issue of *Prologue*. Donald M. Sweig based his article, "Reassessing the Human Dimension of the Interstate Slave Trade," on manifests of ships transporting slaves from Alexandria, Virginia, to New Orleans in the 1820s and 1830s. The article won the Charles Thompson Prize, and the author expresses his appreciation to James Harwood of the National Archives, "whose cooperation and knowledge of the records of the U.S. Customs Service brought the manifests to hand."[10]

A second assumption about subject access in the traditional provenance-based system is that the system will work only if the user supplies information extrinsic to the finding aids. Any access system depends upon some degree of independent knowledge on the user's part, but archival access systems rely most heavily on it. Philip Brooks, Richard Berner, and Howard Peckham are among the many archivists who expect the researcher to associate names of people and organizations with the activities and events related to his topic. These associations link the topic with the personal and organizational records held by the archival agency.[11] Berner states:

> In the course of this preliminary research the user will have associated names of persons and organizations with his particular subject. He will, in fact, have done this so precisely and in so personal a manner that no describer of the manuscript group would be able to anticipate his needs. Whatever painstaking subject analysis of items and series that the describer might make would be largely a superfluous substitute for the minute name/subject association developed inherently by the researcher in his preliminary study.[12]

He hypothesizes that as many as 90 percent of users link their subject to proper names.[13] Many archivists imply that the "serious" researcher who does his homework and prepares carefully identifies the collections and record groups he needs before he even gets to the archives. The archivist then has only to give the user the proper inventory or register.

Berner discusses an example. In describing the records of the Council of Churches, the archivist may use a subject heading for "Japanese-American Evacuation and Relocation" to account for a subseries of records dealing with that subject. However, Berner adds the following:

> . . .it should be noted that normal-

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[9]Lytle, "Intellectual Access to Archives: Provenance and Content Indexing Methods of Subject Retrieval," p. 64.

[10]Donald M. Sweig, "Reassessing the Human Dimensions of the Interstate Slave Trade," *Prologue* 12 (Spring 1980): 5.

[11]See for example, Philip C. Brooks, *Research in Archives: The Use of Unpublished Primary Sources* (Chicago: University of Chicago Press, 1969); Richard Berner and M. Gary Bettis, "Description of Manuscript Collections: A Single Network System," *College and Research Libraries* 30 (September 1969): 405-16; and Howard Peckham, "Aiding the Scholar in Using Manuscript Collections," *American Archivist* 19 (July 1956): 221-28.

[12]Berner and Bettis, "Description of Manuscript Collections," p. 411.

[13]Richard Berner, "Arrangement and Description of Manuscripts," *Drexel Library Quarterly* 11 (January 1975): 51.

ly any reasonably knowledgeable user would have known already that the Council of Churches had been active on behalf of Japanese-American evacuees and this name association with this special subject would really be sufficient. . .[14]

Two other assumptions about subject access in provenance-based archival agencies center on the nature of historical research. Archivists assume that the user wants high recall and does not care if he gets low precision. In other words the user is expected to wade through many irrelevant documents to be certain he has seen everything of interest.

Archivists also expect the research process to be heuristic or iterative. As the researcher works his way through materials, he accumulates more names and events which he then tries to link with other record groups and collections. A continuing interaction with the reference archivist is required.

The standard procedure is not without its critics. Many archivists are concerned about the adequacy of the intellectual control of archival materials and feel that traditional methods based on the assumptions described above do not deal effectively with the problems presented by users. A closer examination of the assumptions underlying current practice may illuminate the special concerns of the reference archivist.

The current practice of arrangement and description in archival agencies does not focus primarily on user needs. Processors tend instead to focus on the records, partly because the records are unique and partly because the archival agency is part of a larger parent organization. While few archivists question the principle of provenance, most will admit that its corollary—original

order—is not always revealing to users outside the originating department. Archivists often inherit office filing systems which were poorly conceived, badly maintained, and dependent on the decisions of file clerks for the location of particular files or items in a file. Inherited file headings are often not meaningful and repeating them in our inventories is not always helpful to the user. Listing "Director's correspondence, A–Z" tells the user very little, but inventories are too often such lists. Many descriptions tend to capture only the order, not the substance, of the records. Simply recapitulating the order of the records in the inventory offers only unidimensional access through arrangement; it makes serial scanning of the records more effective.

Guides, so crucial for subject access, are out of date before they are published. Traditional published guides are not easily updated and appear infrequently. For example, 13 years passed between guides at the Michigan Historical Collections, and at the National Archives 26 years passed between guides. Entries in the guide cannot be manipulated or changed. To supplement the static guide, we need an ongoing system of elements which can be manipulated.

The myth of the immortal, omniscient, indispensable reference archivist must also be examined. Current practice relies too heavily on the subject knowledge and memory of the individual archivist, and is too dependent on the personalities of the researcher and the archivist. In order to help the user, the archivist must associate subject matter with record groups and collections. Some users can discuss topics so as to stimulate these associations in the archivist's mind. Other researchers feel the initial interview is an invasion of

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[14]Ibid.

their privacy or fail to use terms which bring forth a meaningful exchange. Unfortunately, either party may be rushed or distracted.[15]

Archivists have not analyzed the elements which comprise a successful reference interview and have not studied the process of question negotiation in the archival setting. The archivist seeks to understand the full ramifications of the inquiry and tries to understand what the user really wants to know, which often differs dramatically from the initial question. The archivist also helps to refine the question in view of the sources and to conceptualize a search strategy.

To depend on the subject knowledge of a particular archivist leaves too much to chance, since the quality of reference service may vary from day to day as individuals take leaves for illness, meetings, or vacations. Reference service may vary from year to year as archivists transfer or retire. In large organizations, seasonal variation or turnover may not be a major problem. In small organizations it can be devastating.

Furthermore, many archivists do not have the opportunity to develop the subject specialization recommended by Schellenberg, because archival institutions are not always organized along subject lines. Processing and reference activities are often divided functionally between two people or two departments. Records are often processed by student interns or by temporary personnel paid by grant funds. In many institutions, reference activities are rotated among all members of the staff, sometimes for periods as brief as two hours, and continuity with the researcher is lost. Unfortunately, in too many institutions, the reference responsibility is seen as a series of interruptions better delegated to a paraprofessional while the researcher is left to shift as best he can.

Like these assumptions about reference service, our assumptions about users are also untested. We have not explored the needs of the users as they approach the record. Archivists often assume the user is a subject specialist, a post-doctoral scholar, or, at the very least, a doctoral candidate at the dissertation stage. Yet registration forms reveal many other users, and use statistics indicate that research use is growing most rapidly in nontraditional areas. Administrators and staff of the parent institution, students at all stages of training, ecologists, archaeologists, preservation planners, urban planners, journalists, lawyers, amateur historians, local historians, and genealogists are among users of archival sources.

We do not know how users, whether scholarly or nonscholarly, approach the record. Is it true that 90 percent of users use proper names as their primary mode of access? It is difficult to know how many requests enumerated in terms of persons and organizations actually conceal a subject request and are presented in terms congruent with the archival system simply because users have learned that is the only way they will get a response from the system.

In 1977 the Committee on Finding Aids of the SAA circulated a questionnaire to reference staff to test the hypothesis that well-prepared scholars would primarily use the name approach. The questionnaire analyzed researcher use of proper names, topical subjects, geographical place names, and chronology when approaching the find-

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[15]The Loewenheim case implied that archivists may be held to higher standards than our systems are capable of producing. See Herman Kahn, "The Long Range Implications for Historians and Archivists of the Charges Against the Franklin D. Roosevelt Library," *American Archivist* 34 (July 1971): 265–75; and Richard Pollenberg, "The Roosevelt Library Case: A Review Article," in the same issue, pp. 277–84.

ing aids. Use of these four modes was compared with the amount of preparation the researcher had done before arriving at the research institution.

In response to the questionnaire, researcher registration forms at the Michigan Historical Collections were examined for the six-month period for July through December 1976. Nearly 40 percent of the users (61/156) were judged to have read extensively on their subject. Another 40 percent were unprepared (62/156). The remaining 20 percent had done some preparation. In this sample, preparation of user was not a good predictor for mode of access. Roughly half of all users, regardless of preparation, began with a subject approach or used the subject approach offered by the card catalog.

Another study by Michael Stevens in 1977 sought to discover how historians use finding aids in their research. Stevens sent questionnaires to 123 American historians with doctorates teaching in history departments in Wisconsin. He found from their responses that the formal system, including such tools as NUCMC, was relatively ineffective in providing information to historians. Most historians relied on other historians, either through previously published works or by word of mouth. His findings indicate that historians use both names and subjects as access points. Although names predominated, subject terms were used by a considerable minority of the historians.[16]

We also need to know more about the operation and efficacy of the name approach. Without a subject approach provided by a card catalog or guide, the researcher must check all names of possible interest against all inventories and registers to see if the archival agency has the records of the particular individuals or organizations. Even a rudimentary subject approach will lead directly to at least some of the relevant collections and record groups. The researcher can still check other names against the finding aids if he suspects the adequacy of the subject approach. A good subject approach may lead to sources that the researcher has not considered.

The relationship between the type of research project and the modes of access also needs to be studied. Not all research topics are accessible through the traditional modes. The new fields of historical inquiry and current interest in cross-disciplinary research have created a revolution in readers' expectations and needs. Researchers interested in social, demographic, cultural, ethnic, or economic history, for example, have new needs. A researcher investigating farm labor in the 19th century is interested in the most anonymous of Americans and will not have associated proper names with his topic no matter how extensive his research or his previous reading. It is obvious that the researcher must ultimately reach the names of the persons and organizations which created the papers and records documenting the activity of interest, but the problem lies in linking the known activity with the unknown actors. A cultural geographer interested in the uses of the Huron River in Washtenaw County, Michigan, must find his way to the industrial schedules of the U.S. and Michigan censuses to find mills and their output. Frank Burke uses another example to illustrate the impact of recent research:

It is one thing to do archival research on the role of the Commit-

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[16]Michael E. Stevens, "The Historian and Archival Finding Aids," *Georgia Archive* 5 (Winter 1977): 64–74.

tee on Fair Employment Practice in World War II, it is quite another to enter the National Archives with a topic such as the social and economic condition of the Afro-American in the New Deal era.[17]

In the first case the archivist would give the researcher the Preliminary Inventory Number 147 for Record Group 228, the records of the Committee on Fair Employment Practice, and offer help in using the files. In contrast, the second search would require, first, an effort to translate "Afro-American" and "New Deal" into historically contemporary terms, and, second, a joint analysis by the researcher and the archivist of federal activity in the 1930s to locate federal agencies, both civilian and military, that influenced or recorded the economic and social conditions of blacks during the period.

It is folly to expect the reference archivist to remember all administrative histories, biographical sketches, series descriptions, and container lists required to translate subject requests into names of record groups or collections. Archivists need to be able to build on the work of predecessors and colleagues. Reference archivists need an alphabetical, updatable, multiple-subject approach even if the readers never use it. It is true that no system of finding aids will be able to make all the associations and intuitive leaps of the imagination that result from a fruitful interchange between archivist and researcher. No finding aid will replace reference assistance or relieve the researcher from the need to associate a subject with names, dates, and other specific access points, but we must codify what we can.

Archivists have the methodology to provide better subject access. Richard Lytle usefully differentiates between provenance-based descriptive systems and content-indexing systems. In the provenance-based system, descriptive information "derives only from what is known *about* the file—the activities of the creating person or organization and the structure or organizing principles of the file itself." In the content-indexing system, deriving from librarianship, "information is gleaned by an indexer who examines the records."[18] Lytle provides a useful theoretical distinction and he has greatly influenced this paper, but he presses the distinction too far. As he admits, the two systems often "occur as complementary approaches within a given repository," and he further states, "The two methods may be summarized as two dimensions of subject access to archives."[19]

We need both modes to satisfy the needs of reference staff and users. Determining information about provenance and determining information about content are not contradictory or mutually exclusive activities. The analysis of records is central to archival activity. Schellenberg's views are instructive:

> While preparing an inventory, an archivist gains a knowledge of the origins, structure, and content of an archival group that is very useful to him in reference service and later descriptive work. Its preparation is a kind of discipline for him, for while preparing it he is required to do those things that are always necessary to acquire a knowledge of records. These relate to a study of the organization and

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[17]Burke, p. 315.

[18]Lytle, "Intellectual Access to Archives: Provenance and Content Indexing Methods of Subject Retrieval," p. 64.

[19]Ibid., pp. 65, 74.

function of an agency, which he must know if he is to understand the records it produced; a dissection of the archival group into its constituent parts. . . and an identification of the record type and a description of the content of each of the series.[20]

Analysis of both provenance and content can and should be part of our daily work. Archivists tend to be too passive and bureaucratic when writing inventories and registers. Inventories, which should be the major intellectual accomplishment of our profession, are too often merely lists of container and the headings. In the agency history or the biographical sketch, in the scope and content note, in the subgroup or series description, the archivist has the opportunity and the obligation to analyze in some detail the content and potential use of the records as well as the function and composition of records. Frequently only the processing archivist will see the collection or record group as a whole. Preparing a sensitive, perceptive, provocative essay on the strengths and weaknesses of records for research use is difficult. It requires historical knowledge, imagination, and the ability to write clear prose. It is also difficult to assess records for current research interests and to anticipate other uses of the records. But if we are unable to assess and analyze the records, why are we saving them?

Human activity generates records, and although current users may not be interested in particular activities, they are part of the human experience. Archivists knew of the activities of blacks and women from our records before

historians discovered them. Archivists knew the universals of human experience—birth, family, education, work, aging, and death—long before they became elements of historical analysis. Archivists, however, did not always identify these historical elements in descriptive programs. Manfred Kochen suggests that a good information retrieval system is one that helps people to ask better questions.[21] Archivists in their inventories and registers have unlimited opportunities to suggest areas of study.

Archivists have long sought to differentiate archival arrangement and description from library classification and cataloging. In the process, archivists may have unnecessarily neglected the idea of subject access. The double step of indexing inventories and registers and cumulating the index entries offers one way to gain subject control in a manual system and provides the data for eventual transfer to automated systems. SAA's Committee on Finding Aids noted that indexes are rarely used in inventories or registers. The Committee, however, errs in defining indexing too narrowly as "rearranging entries from container or item listings into an alphabetical, subject, chronological or other sequence."[22] It is not necessary to restrict the index to the container or item level. Indexing can be keyed to any of the other levels of description as well, as it is in the guide. Such indexes can be cumulated into a master index for the repository.

These ideas are not new. Variants of this proposal are described by Ruth Bordin and Robert Warner, Kenneth Duckett, David B. Gracy II, and

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[20]Schellenberg, *The Management of Archives*, p. 220.

[21]Manfred Kochen, *Principles of Information Retrieval* (Los Angeles: Melville Publishing Co., 1974), pp. 54–55.

[22]Society of American Archivists' Committee on Finding Aids, *Inventories and Registers: A Handbook of Techniques and Examples* (Chicago: Society of American Archivists, 1976), p. 32.

Schellenberg.[23] Richard Berner offers a comprehensive and well-developed model. He suggests that archivists use a card catalog or index-posting sheets to index the inventories or registers rather than the records. The card catalog or index-posting sheets thus lead the reference archivist or the user to the proper inventory or register, which then leads into the internal arrangement of the record group or collection.

Subject analysis and indexing are time-consuming, but increased effort at the input stage may reduce the amount of searching time at the output stage. Archivists have only begun to measure input costs for processing and have rarely measured output costs. Reference department salaries may be charged to output costs but it is difficult to quantify other output costs—the costs of unanswered questions, the cost of researcher time spent searching through irrelevant documents, or the cost to an agency administrator of failing to locate a needed policy statement.

In setting up an indexing system, we must consider the concept of literary warrant, that is, the vocabulary of the system must be based on the material we put into it, not forced to conform to any purely theoretical scheme.[24] Archivists will probably reject an enumerative list of subject headings that gives little freedom to the indexer and that is unresponsive to the variety of information in and about our records. A more synthetic system that gives the indexer the principles to specify subjects as they arise will be more suitable. Without adequate control of vocabulary, recall will drop. A rich entry vocabulary, a large list of the non-preferred synonyms, enables the system to move easily from the natural language of users and the records to the more controlled indexing language. An indexing system must provide syntax as well as vocabulary so that relationships can be indicated. An album of photographs is different from a photograph of albums. The genus-species relationships so prevalent in hierarchically organized archival records pose particular problems for an archival indexing system.

The specificity of the indexing system is another important variable. Specificity is a measure of the extent to which the indexing language allows precision in labeling the subject. The greater the specificity, the greater the likelihood of relevance; that is, the records retrieved should be precisely those needed. On the other hand, if more general indexing terms are used, the larger the number of records retrieved but the lower the probability that they will be directly of interest.

The exhaustivity of the system measures the extent to which all the distinct subjects reflected in a particular record group are recognized and translated into the system. Deciding the number of terms to be assigned to any given record group, subgroup, series, or file is particularly difficult when dealing with archival record groups, since so many subjects may be present. Shall we index every committee, department, center, or other administrative subdivi-

[23]Ruth B. Bordin and Robert M. Warner, *The Modern Manuscript Library* (New York: Scarecrow Press, 1966); Kenneth Duckett, *Modern Manuscripts: A Practical Manual for Their Management, Care and Use* (Nashville: American Association for State and Local History, 1975); David B. Gracy II, *Archives & Manuscripts: Arrangement and Description* (Chicago: Society of American Archivists, 1977); and T.R. Schellenberg, *The Management of Archives,* pp. 253–89. Richard Berner has written widely on this subject. Two important articles are Richard M. Berner and M. Gary Bettis, "Description of Manuscript Collections" and Berner's "Arrangement and Description of Manuscripts" cited above.

[24]Two good introductory texts to the ideas of information retrieval which follow are A.C. Foskett, *The Subject Approach to Information* (London: Bingley, 1977) and F. Wilfred Lancaster, *Information Retrieval Systems: Characteristics, Testing and Evaluation* (New York: Wiley, 1968).

sion reflected in the records of the College of Literature, Science, and the Arts of The University of Michigan?

An indexing system needs an address for the groups of documents located by the index. Indexing inventories and registers rather than records simplifies this problem. If the documents themselves are indexed, problems are compounded because archivists and users need either a relative location or a fixed location, both difficult to specify concisely.

Any archival system must be flexible, for the detail to which a collection or record group is processed depends on the importance of the material, anticipated use, and other administrative factors. Archivists need to be able to index at the record group level or at any of the subordinate levels.

In manual descriptive systems, indexing is pre-coordinate. Composite or complex subjects must be coordinated at the indexing or input stage and all possible uses of the index must be envisioned while assigning subject headings. Later manipulation of terms is not possible. In automated systems, sometimes called post-coordinate systems, the indexer can assign only simple terms during the input stage and the user can coordinate or manipulate complex subject terms during the output or use stage. It is this revolution that holds so much promise for the future.

In the final analysis, however, automated systems will be unable to solve our problems of subject access if we do not clearly identify the assumptions underlying our activities and specify our needs precisely and imaginatively. At the heart of any descriptive system lies careful and perceptive analysis of records. Good descriptive inventories coupled with an indexing system, whether manual or automated, are necessary if the reference archivist is to provide adequate service for users.