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New Appraisal Techniques: The Effect of Theory on Practice

Margaret Hedstrom

Archivists are acutely aware of the need for a better framework and new methods to guide the selection of records with enduring value. Whether appraising the current records of government agencies, corporations, colleges or universities, or social organizations, archivists confront a gargantuan task with meager tools. [1] Appraisal theory provides general principles based on a few broad generalizations: the distinction between

[1] F. Gerald Ham, "The Archival Edge," *American Archivist* 38 (January 1975): 5-13; F. Gerald Ham, "Archival Choices: Managing the Historical Record in the Age of Abundance," *American Archivist* 47 (Winter 1984): 207-16; Richard J. Cox and Helen W. Samuels, "The Archivist's First Responsibility: A Research Agenda to Improve the Identification of Records of Enduring Value," *American Archivist* 51 (Winter and Spring 1988): 28-42; Frank Boles and Julia Marks Young, "Exploring the Black Box: The Appraisal of University Administrative Records," *American Archivist* 48 (Spring 1985): 121-40; and Francis X. Blouin, Jr., "An Agenda for the Appraisal of Business Records," in *Archival Choices: Managing the Historical Record in an Age of Abundance*, ed. Nancy E. Peace (Lexington, Mass.: D.C. Heath, 1984), 61-79.

primary and secondary uses for records; the need to evaluate their evidential and informational values; the notion that organizations ought to preserve a record of their significant policies, procedures, functions, and activities; and the premise that certain levels of the administrative hierarchy are most likely to produce records of permanent value. [2] Although appraisal theory and methods proved valuable for identifying the archival records of the past generation, both the theory and methods are inadequate and inflexible for appraising contemporary records.

Modern records appraisal began with the premise that preservation of the universe of documentation would serve neither scholars nor repositories. Archivists working at the National Archives in the 1940s and 1950s recognized that repositories could not afford the space or staff to manage all of the voluminous records of their day and that scholars could not "find their way through the huge quantities of modern public records." [3] To warrant preservation in an archives, records had

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[2] For the standard reference on appraisal, see Maynard J. Britchford, *Archives & Manuscripts: Appraisal and Accessioning* (Chicago: Society of American Archivists, 1977). For an annotated bibliography which includes some works on new approaches, see "Annotated Bibliography on Appraisal," Julia Marks Young, compiler, *American Archivist* 48 (Spring 1985): 190-216.

[3] T.R. Schellenberg, "The Appraisal of Modern Public Records," in *A Modern Archives Reader: Basic Readings on Archival Theory and Practice*, eds. Maygene F. Daniels and Timothy Walch (Washington, D.C.: National Archives and Records Service, 1984), 57. For discussions of the development of appraisal theory at the National Archives, see Trudy Huskamp Peterson, "The National Archives and the Archival Theorist Revisited, 1954-1984," *American Archivist* 49 (Spring 1986): 125-30; and Nancy E. Peace, "Deciding What to Save: Fifty Years of Theory and Practice," in *Archival Choices*, 4-8.

to document the programs, policies and procedures of an organization; shed light on its important functions or activities; or contain information that was unique and significant. After reviewing all extant documentation of a government agency or organization, archivists could select significant records--generally at the records series level.

Important changes in record-keeping practices and technologies since appraisal guidelines were first formulated in the 1940s and 1950s raise concerns about the adequacy and effectiveness of appraisal theory and practice. The sheer volume of contemporary records is one dimension of this problem. Although appraisal theory and methods were formulated in part to cope with the rapid growth of records during the 1930s and 1940s, the volume of those records pales in comparison to the expansion of records since the 1960s. Patricia Aronsson, in her careful study of twentieth century congressional collections, points out that each member of Congress now accrues between fifty and one hundred cubic feet of records per year, while their predecessors fifty years ago accumulated that quantity of records in an entire career of two decades or more. [4] Likewise, a survey of Yale University's records revealed that university records production trebled between 1960 and the late 1970s. [5] Such large volumes of information make it increasingly difficult for archivists to acquire intimate knowledge of the universe of documentation from which they must select records with enduring value.

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[4] Patricia Aronsson, "Appraisal of Twentieth-Century Congressional Collections," in *Archival Choices*, 81.

[5] John Dojka and Sheila Conneen, "Records Management as an Appraisal Tool in College and University Archives," in *Archival Choices*, 30, 41-44.

New record-keeping technologies feed a seemingly insatiable demand for recorded information. Even before the diffusion of the office photocopy machine, T. R. Schellenberg cited modern duplicating devices as a factor in the proliferation of records. [6] The spread of photocopiers since the 1960s has fueled this trend by allowing organizations to reproduce and distribute documents and reports in unlimited numbers.

The introduction of computers adds new complications. Automation of record keeping creates records that are transient and volatile. It allows users in many different locations to view a database simultaneously and to extract selected elements for further manipulation and analysis. It provides a means for collaborative research and report writing without a way to trace individual contributions of authorship, even though the results of such a collaborative effort resemble a traditional printed report. The recording medium is short-lived and reuseable, making it imperative for archivists to appraise the records before they are erased deliberately or allowed to deteriorate unintentionally.

The impact of automation on the identification and selection of archival records is not limited to the special needs of machine-readable records. The use of computers for accounting and statistical analysis fills paper files with reams of charts, tables, and other printouts. The use of word processing technology creates multiple drafts of documents, with minimal changes between drafts; or it leaves the files void of drafts of a document that evolved electronically on a computer screen. Automated indexes to hard copy files are an integral part of many case file systems, and they are replacing the manual card index as the only

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[6] Schellenberg, "The Appraisal of Modern Public Records," 61. For an analysis of duplication and reproduction technologies, see Jo Anne Yates, *Control through Communication: The Rise of System in American Management* (Baltimore: Johns Hopkins University Press, 1989), 45-56.

practical means of accessing information in files with hundreds of thousands of documents. Even though electronic files have not replaced paper documents, both the content and organization of many manual filing systems have been altered by automation. [7]

A redistribution of responsibility for many basic societal functions and changes in organizational structure also make the documentation landscape more complex. In the government arena, the *new federalism* means that programs which once were the exclusive domain of a federal, state, or local government agency are now shared among the various levels of government. Agencies at all levels of government subcontract with providers in the private sector for direct services. [8] In universities, research projects with joint government and corporate sponsorship are carried out by teams whose members reside on many campuses and who communicate at conferences and through electronic mail networks. [9] A decentralization of decision making within organizations further complicates archivists' quests for the documentation of policy development. The structure of a large multi-divisional corporation, for example, cannot be reduced to a

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[7] National Academy of Public Administration, *The Effects of Electronic Recordkeeping on the Historical Records of the U.S. Government: A Report for the National Archives and Records Administration* (Washington, D.C.: The National Academy of Public Administration, January 1989), 23-33.

[8] For an analysis of the effects of this trend on archival appraisal, see Margaret Hedstrom, "Is Data Redundancy the Price Archivists Will Pay for Adequate Documentation?," *IASSIST Quarterly* 13 (Spring 1989): 24-30.

[9] Cox and Samuels, "The Archivist's First Responsibility," 35.

simple pyramid, and its core documentation will not be found exclusively in the files of upper management.[10]

These organizational and technological changes together create modern records that are voluminous, interrelated, specialized, technical, and often difficult and expensive to preserve. As programs and activities are carried out with increasingly complex divisions of responsibility, the documentation of many contemporary functions is dispersed and duplicated in the papers and files of numerous individuals, departments, private institutions, and government agencies. Automated information systems often support the inter-institutional communications needed to coordinate and monitor diverse activities. The Medicaid Management Information System (MMIS), for example, illustrates the intricate information flows associated with modern social programs. This system exchanges information among local social service agencies, public and private hospitals and clinics, physicians, insurance companies, and state and federal government agencies. In the sparsely populated state of Utah, this system has more than 100 machine-readable master files and produces 316 different output reports, including six truckloads of paper and nearly 20,000 sheets of computer output microfiche each month.[11] Similar systems exist in most states to link public and private health care

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[10] Bruce H. Bruemmer and Sheldon Hochheiser, *The High Technology Company: A Historical Research and Archival Guide* (Minneapolis: Charles Babbage Institute, 1989) provides an overview of modern high technology corporations and their associated documentation. For a historical analysis of the rise of internal communication and its significance in modern business, see Yates, *Control through Communication*.

[11] Ken White, "We Have the Program, Now We Need Federal Approval" (Paper delivered at the annual meeting of the Society of American Archivists, New York, New York, 5 September 1987).

institutions and the local, state, and federal agencies that monitor them into a large, complex information network.

New approaches to archival appraisal hold promise for guiding archivists through the maze of modern documentation. The development of documentation strategies, experiments with sharing appraisal data, and efforts to refine appraisal criteria augment traditional appraisal theory. These recent efforts have not been integrated, and they focus on different aspects of the appraisal process. Yet they share a common goal of more systematic and better selection of archival records.

Documentation strategies

A discussion of documentation strategies provides a useful point of departure because the documentation strategy approach establishes a broad context for appraisal rather than offering a new appraisal technique. The definition of *documentation strategies*, drafted initially by Larry Hackman and Helen Samuels, is "a plan formulated to assure the documentation of an ongoing issue, activity, or geographic area . . . ordinarily designed, promoted, and in part implemented by an ongoing mechanism involving records creators, administrators, and users."[12] A

[12] Helen Samuels, "Who Controls the Past," *American Archivist* 50 (Spring 1986): 115; and Larry J. Hackman, "The Forum," *American Archivist* 52 (Winter 1989): 8. For other works on documentation strategies, see Larry J. Hackman and Joan Warnow-Blewett, "The Documentation Strategy Process: A Model and a Case Study," *American Archivist* 50 (Winter 1987): 12-47; Nancy Carlson Schrock, "Images of New England: Documenting the Built Environment," *American Archivist* 50 (Fall 1987): 474-98; James M. O'Toole, "Things of the Spirit: Documenting Religion in New England," *American Archivist* 50 (Fall 1987): 500-17; Philip N. Alexander and Helen W. Samuels, "The Roots of 128: A Hypothetical Documentation Strategy," *American Archivist* 50 (Fall 1987): 518-31; Samuel A.

documentation strategy is a way for records creators, users, librarians, subject specialists, archivists, and others to define jointly what documentation has enduring value, to plan for its long-term preservation and accessibility, and to evaluate and refine the criteria and mechanisms for selection as conditions change. It is a proactive approach which places creators, users, and custodians of records in a position to shape the historical record actively.

Although the term *documentation strategy* dates from the mid-1980s, the concept of a nationwide effort to improve the selection of archival materials in one well-defined subject area has its origins at the Center for the History of Physics, a unit of the American Institute of Physics (AIP). In the late 1950s, a committee of physicists recognized the inadequacy of documentation on modern physics, drafted an action plan, and then recruited a historian and an archivist to develop a program for long-term cooperation among many institutions and individuals. [13] Several other joint documentation projects in science and technology disciplines followed, and discipline history centers, modelled on the Center for the History of Physics, have been established on the history of information processing, the

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McReynolds, "Rural Life in New England," *American Archivist* 50 (Fall 1987): 532-48; T.D. Seymour Bassett, "Documenting Recreation and Tourism in New England," *American Archivist* 50 (Fall 1987): 550-69; and Richard J. Cox, "A Documentation Strategy Case Study: Western New York," *American Archivist* 52 (Spring 1989): 192-200.

[13] Joan Warnow-Blewett, "Saving the Records of Science and Technology: The Role of a Discipline History Center," *Science and Technology Libraries* 7 (Spring 1987): 29-39; and Hackman and Warnow-Blewett, "The Documentation Strategy Process," 30-35.

history of electrical engineering, and the history of chemistry.[14] More recently archivists have focused on efforts to craft documentation strategies around subject or functional areas, or regions, and to articulate the elements of a documentation strategy model.

The documentation strategy approach is neither a theory nor a methodology for appraisal, yet this concept makes significant contributions to the appraisal of modern records. First, documentation strategies offer a new approach to understanding the broad context for specific appraisal decisions. The concept is based on a recognition that records are interrelated, just as the processes that create them are interrelated. Therefore, custodians and creators of records from many institutions need to be involved in defining a documentation strategy in order to illuminate the general terrain of documentation on a subject, functional area, or region.

Documentation strategies differ from the traditional records survey which attempts to inventory extant records as a means to understand the universe of documentation. Rather, documentation strategies often begin by identifying significant functions or activities that warrant documentation and analyzing how records are created, administered, and used to support those

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[14] Warnow-Blewett, "Saving the Records of Science and Technology," 36-40. For examples of documentation studies, see Clark A. Elliott, ed., *Understanding Progress as Process: Documentation of the History of Post-War Science and Technology in the United States* (Chicago: Society of American Archivists, 1983); Joan K. Haas, Helen Willa Samuels, and Barbara Trippel Simmons, *Appraising the Records of Modern Science and Technology: A Guide* (Cambridge, Mass.: Massachusetts Institute of Technology, 1985); and Bruemmer and Hochheiser, *The High Technology Company.*

functions. [15] As the authors of one recent documentation guide explain, "we believe that it is the archivist's task to understand the universe of documentation that is likely to be found, identify those issues and activities that seem to have historical relevance, and find the records or artifacts that best document them." [16]

The development and implementation of documentation plans bring records creators and users into the process of defining which key aspects of modern society warrant adequate documentation for future research. Through this approach, archivists benefit from the knowledge and expertise of records creators and users who understand technical and highly complex records systems and who can steer archivists toward the most significant records among today's massive volumes of documentation. The documentation strategy approach, if implemented, would also change the role of the appraisal archivist. By insisting upon careful planning, documentation strategies force archivists to think in advance about which records they most desire to preserve, and they can help appraisal archivists establish priorities for acquisition. Finally, the documentation strategy approach recognizes that archivists need to evaluate and revise their collecting priorities and appraisal criteria as conditions change. Unlike a theory of appraisal, which must stand the test of time to qualify as theory, documentation

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[15] Documentation strategies do use various types of surveys to gather information for assessments of documentation needs and conditions. Collection analysis is one particularly useful tool designed to identify topics that are well or poorly documented by existing holdings in manuscript repositories. See Judith Endelman, "Looking Backward to Plan for the Future: Collection Analysis for Manuscript Repositories," *American Archivist* 50 (Summer 1987): 340-55.

[16] Bruemmer and Hochheiser, *The High Technology Company*, 13.

strategies are designed to accomodate changes in the creation and uses of records, and in the resources available to preserve them.

In common parlance, archivists have not done justice to the concept of documentation strategies. *Documentation strategies* have become the latest buzz words in the field of archives, and recent conferences have been filled with sessions on documenting many diverse topics. Archivists have begun to use the term *documentation strategy* to refer to all systematic and proactive efforts to identify archival records and to any collecting efforts that involve two or more repositories. Documentation strategies, however, are more than extensions of joint collection projects. They involve a wide range of nonarchivists to provide expertise, promote and sustain a documentation project, and increase the likelihood of its success. If successful, documentation strategies establish ongoing mechanisms, not only to coordinate the collection of archival records, but to promote, support, and sustain better documentation.

Also lacking are enough models of successful documentation strategies. To date, archivists have discussed why documentation strategies are important and how they might be developed, but there is little practical experience demonstrating that this approach can be implemented or is effective in the long run. The lack of concrete models does not mean that documentation strategies cannot or should not be implemented, but it suggests that archivists need to work with others to test this approach before they are fully aware of the obstacles to implementation and possible pitfalls. [17] Rather than discussing documentation strategies internally, archivists need to promote the idea to other

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[17] Successful documentation work that has been sustained for a decade or more, such as the work at the Center of the History of Physics, can be instructive for archivists. See Hackman and Warnow-Blewett, "The Documentation Strategy Process," 29-44.

key actors and be prepared to adjust plans and strategies in response to their concerns.

Sharing appraisal data

Another important trend in appraisal techniques is an effort to share information about appraisal decisions through a national database. As part of the seven states RLIN (Research Libraries Information Network) project, several state archives conducted the first systematic test of the potential value of sharing information about appraisal decisions. The test used two fields in the MARC AMC (Archives and Manuscripts Control) format to store information about the final disposition of records, the reasons for appraisal decisions, and the appraisal process. This test was based in part on the premise that different states create and maintain similar records in areas where state government agencies perform similar functions or support similar programs. If records are of a sufficiently generic nature, archivists and records managers will be able to make more informed appraisal decisions by examining the appraisal decisions of their professional colleagues. [18]

Through a series of case studies, participants from six state archives tried to ascertain whether archivists in other states had appraised and scheduled similar records series such as litigation files, legislative bill files, case files of prison inmates or parolees, extradition records, and chemical waste transport manifests. When similar records series were located in the RLIN database, participating archivists determined whether they could use information about appraisal and scheduling decisions to make more informed judgments about the value of similar records to

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[18] RLIN Seven State Project, "Case Studies Summary Report," Palo Alto, Research Libraries Group, April 1988, unpublished report, 3.

their own repository. The initial test results were inconclusive, but the case studies identified areas for further analysis.

The results of this initial experiment speak to several problems with the practice of records appraisal. First, the pool of data about state government records in the RLIN database is not yet large enough to provide any assurance that a search will turn up records related to those being appraised. Second, much of the available appraisal information is too cryptic to provide useful guidance on appraisal decisions to another repository. [19] Currently, there are no guidelines or professional standards for reaching appraisal decisions or documenting the decision-making process. The first problem might be remedied as more repositories provide data to national databases using established descriptive standards. The second problem is more profound. Archivists may not have sufficient formal, written information about the appraisal process or about specific appraisal decisions to provide a meaningful resource for use by other repositories. Short pronouncements that records have evidential or informational value, for example, lack the concreteness and consistency needed to understand the detailed reasoning behind an appraisal decision. The challenge here is to develop a more precise vocabulary for explaining why records were appraised as permanent or disposable which will capture the determining factors without resorting to vague or overarching generalities.

A clear consensus on the purpose and value of sharing appraisal data has not yet emerged. Archivists in some states expressed the concern that specific statutes and regulations governing the retention of records and local collecting interests were the overriding factors in all appraisal decisions. While they found appraisal information from other states interesting, they

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[19] RLIN Seven State Project, "Case Studies Summary Report," 10.

concluded that it was unlikely that such information would ever be the deciding factor in an appraisal decision. [20]

Archivists are not always certain how to interpret appraisal information when it is available. If archivists in one repository decide to preserve a particular set of records, does that mean that archivists in another repository should rely on the judgment of their colleagues and preserve a similar set of records? Or does it mean that the documentation preserved in one repository provides an adequate historical record of a particular event or phenomenon? Voluminous case files illustrate this dilemma. Should all state archives preserve inmate case files because two or three states decided to do so; or are inmate case files from two or three states sufficient to document prisoners in state correctional facilities? These concerns will remain predominant in the absence of multi-institutional documentation strategies which will help appraisal archivists determine whether the main reason to preserve any particular records is to document local, regional, or national phenomena.

Sharing appraisal data is an area that warrants further exploration and development. Exchanges of information about a specific appraisal decision could help archivists avoid duplication of effort when appraising similar records. Moreover, exchanges of information about holdings and collection policies are essential elements of documentation strategies. [21] Such information can

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[20] RLIN Seven State Project, "Case Studies Summary Report," Appendices, nonpaginated.

[21] Hackman and Warnow-Blewett, 28, 38-39. Currently documentation reporting relies primarily on newsletters, local databases, and subject area collecting guides. For examples, see the newsletters of the AIP Center for the History of Physics and the Charles Babbage Institute. As part of its national collecting strategy, the Charles Babbage Institute produced a multi-

form the basis for an assessment of needs and conditions in a subject or functional area, or a region, and could facilitate joint decision making about the selection of archival records.

Appraisal criteria

Some archivists have emphasized the need for a more precise appraisal methodology which identifies the key factors in appraisal decisions. Frank Boles and Julia Young developed and tested a model of the appraisal process which identifies more than fifty factors that archivists consider when appraising records. [22] The states of Washington and Pennsylvania also use an appraisal matrix to rank factors and arrive at numerical scores which guide final appraisal decisions. Efforts to articulate more explicit appraisal criteria make two important contributions to appraisal techniques. First, these models may lead to more rigorous appraisal decisions by identifying the large number of factors that archivists should consider when selecting records for permanent retention. Second, appraisal models may improve reporting about appraisal decisions by contributing to the development of a standardized and controlled vocabulary to describe the factors that archivists consider in the appraisal process.

Finite lists of appraisal criteria, however, also have their limitations. If applied without the benefit of a larger context, such as a broad understanding of a collecting area that a documentation strategy might provide, appraisal criteria help with specific decisions, but they do not direct archivists toward

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repository guide, *Resources for the History of Computing: A Guide to U.S. and Canadian Records* (Minneapolis: Charles Babbage Institute, 1987).

[22] Frank Boles and Julia Marks Young, "The Archival Selection Process: Report of the Boles-Young Appraisal Project," unpublished report, preliminary draft (June 1988).

the most valuable or most important records. All extant documentation must be evaluated and ranked according to the criteria using a fairly labor intensive methodology. One particular weakness of the appraisal matrices is that they do not accomodate interrelated records very well. Most of the models include criteria for evaluating the *uniqueness* of records, but the models do not account for the fact that few modern records provide the only *unique* source of information about an event, a social phenomenon, or an individual. One goal of modern appraisal is to select the best source of documentation, often from many alternative sources. Furthermore, uniqueness is not always a virtue. In documenting contemporary society, too much emphasis on unique records will create a historical record that fails to capture the essence of everyday life.

New challenges

In spite of the contributions of new appraisal techniques, these approaches fall short of what is needed to appraise many modern records. Archivists who have appraised electronic records in modern information systems have encountered some of the most challenging issues in appraisal. The only effective way to insure preservation and continued accessibility of electronic records is to identify records and data with long-term value when new information systems are being designed. This approach would make it possible to build routines into the system to handle retention, disposition, and preservation of selected archival data. What this approach requires, however, is all of the elements of a documentation plan, but a documentation plan that is developed and in place before any records are ever created--the ultimate in a proactive approach. Defining which machine-readable and hard copy pieces of an automated system merit retention will require discussions with the creators of the records, with primary users, and with potential secondary users. It will

also require a well-defined set of criteria that archivists can communicate to systems designers to identify which information in the system has long-term value. Furthermore, computing becomes decentralized with the proliferation of microcomputers. Control over systems design, records creation, retention and final disposition are placed in the hands of the users of microcomputers. Archivists need to provide clear guidelines for identifying archival records to microcomputer users who appraise records every time they decide whether to delete or save a document or a record.

In developing new appraisal techniques, archivists could exploit the concept of information systems as a useful framework for appraisal and documentation projects. An *information system* consists of a set of rules and procedures for collecting, processing, maintaining, and distributing information in order to achieve predetermined results. The concept of information systems has dominated information science and provided the basic framework for the design and development of record-keeping systems for more than two decades. Yet the use of information systems concepts for the analysis and appraisal of records has been limited almost exclusively to a handful of archivists who have conducted serious studies of automated information systems. [23]

This is unfortunate because systems designs, diagrams of information flows, system specifications, and other documentation of information systems are rich sources for archivists to begin to understand the background, purposes, and organization of modern records. One purpose of an information system design is to define the relationship between different data

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[23] For an example of an appraisal of a large information system, see Alan Kowlowitz, *Archival Appraisal of Online Information Systems*, Archives and Museum Informatics, Technical Reports, Part 2 (Fall 1988). The information systems concept is also discussed in Hedstrom, "Is Data Redundancy."

elements, data sets, data sources, and output reports. The design itself makes explicit how information flows among the various parties who have access to the system and often includes information about production and distribution of hard copy output.

Aiming appraisals at the information systems level could also bridge a wide gap between the very broad and abstract goals of some documentation strategies and the quite narrow and pragmatic focus of appraisal methodologies. Some of the proposals for documentation areas seem so broad, that archivists may become paralyzed by the scope of the projects and the complex interrelationships among records. Information systems, while manageable, still capture many of the issues that make appraisal of modern records difficult. For example, the national criminal records system is a complex network for transfer of data on criminal histories, criminal identities, warrants, and other crime-related activities vertically between local, state, and federal law enforcement officials, and horizontally between criminal justice agencies within and between states. In addition to identification, social and demographic background, and criminal history data on millions of offenders and suspects, the system contains data on significant actions taken by police agencies, district attorneys, courts, probation departments, correctional institutions, and parole boards. [24] This system, which includes both electronic databases and hundreds of manual files, contains the most comprehensive information on the nature of crime and criminal activity and forms the basis for analysis of long-term trends. A comprehensive appraisal of the system would require collaborative assessments at the federal, state, and local level because local, state, and federal agencies share data and use the

[24] Kowlowitz, *Archival Appraisal of Online Information Systems*, 25-34.

system. Ambitious as a cooperative project may be to appraise the information in this system, such a project would fall far short of a documentation plan on crime and criminal justice.

Archivists have been reluctant to use information systems concepts in the development of new appraisal techniques for several reasons. First, there has been a tendency to reduce fundamental changes in the organization and use of information that result from automated record keeping to the narrow issue of what to do about machine-readable records. Traditional archivists tend not to analyze computer-generated reports, correspondence created in a word processing system, or printed transaction documents as components of an automated system. Instead they are treated as extensions of traditional forms of documentation because they continue to reside on paper in manual filing systems. This approach obscures the processes used to create records, their relationship to other forms of documentation, and the impact of automation on the organization, conceptualization, and use of information.

A second reason that archivists may be reluctant to use information systems concepts, or may find it difficult to do so when they try, is that there is not always a neat fit between the structure of an information system and the structures of the organizations it serves. Information systems can span several units within an organization or pass data from one organization to another. Data or records, which in traditional systems were held exclusively by one unit in an organization, may now be combined with other data in a corporate-wide database which is owned either by everyone or no one. Shared databases within or among organizations undermine the concept of provenance and

make ownership of data and responsibility for its preservation unclear.[25]

Archivists will not be able to use information systems concepts to analyze all extant documentation. Clearly, only a portion of the most recent records are created and organized in information systems. Nevertheless, where information systems exist appraisal archivists can take advantage of the pre-defined parameters of a system and the explicit relationships among its components to provide a framework for analysis of complex, multi-institutional records. This approach can also address one of the concerns of the documentation strategists: functions which at one time were carried out and documented by a single institution are now carried out and documented in systems and networks.

The appraisal of contemporary records, especially records from automated information systems, will require elements of all the new appraisal techniques discussed above. Archivists need not reject traditional appraisal theory, but they must supplement it with information systems concepts developed by systems analysts and information scientists. Archivists must provide records creators with criteria for identifying records with long-term value, so that they can make special provisions to ensure the longevity of fragile media and transient records. Contemporary records are too voluminous, their interrelationships too complex, and the time to appraise them too short, to allow archivists to review all potentially archival records on a case-by-case basis. Unless archivists refine and implement new appraisal techniques to shape the historical record as it is being created, appraisal will

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[25] For a discussion of these issues in the context of government records, see Hedstrom, "Is Data Redundancy."

become limited to evaluating the remnants of record-keeping systems that someone forgot to erase or destroy.

Margaret Hedstrom is Chief, Bureau of Records Analysis and Disposition, New York State Archives and Records Administration. This article is a revised version of a paper presented at the spring meeting of the Mid-Atlantic Regional Archives Conference, Albany, New York, 6 May 1989. The author thanks Larry Hackman, Joan Warnow-Blewett, and the readers for *Provenance* for their comments and suggestions on an earlier draft.