

ARCHIVAL INDEXING: PROBLEMS AND ISSUES

By

RUSSELL LEWIS MARTIN

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Department of Library, Archival and Information Studies

The University of British Columbia
1956 Main Mall
Vancouver, Canada
V6T 1Y3

Date April 27, 1987

ABSTRACT

The last decade has seen an unprecedented flood of material coming into archival repositories. As a result, there is a great need for procedures which provide a high degree of intellectual control over records. One such procedure is the indexing of archival materials. An archival index provides access to a large number of name and subject terms, without being bound by the traditional archival structures dictated by provenance. This process has not traditionally been widely understood by archivists, but it is important to grasp the fundamental principles of archival indexing, as well as the problems and issues that follow. This is especially true in a period when methods of automated information processing have reached new levels of sophistication.

This thesis is an exploration of these problems and issues. The place of indexing in a complete system of archival description is established, and the process defended as a valid part of archival retrieval. The thesis also offers guidelines for conducting the actual indexing process, and making several basic decisions faced by archival indexers with regard to the implementation of indexing in an archival descriptive system. In addition, the merits of such alternative methods as controlled-vocabulary and uncontrolled-vocabulary indexing, and coordination of desired terms before and after index creation, are weighed, and the positive and negative aspects of certain recently-developed systems evaluated. The thesis concludes by stating

ways in which archivists must re-evaluate the indexing process for it to be used effectively in the future.

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INTRODUCTION

Archives by nature are not static. They grow as time passes. Phenomenal growth has been experienced in recent years by archives which preserve the huge volume of records created by government. The task of scheduling, selecting, describing, and conserving these records presents a formidable challenge to government archivists. [1]

Although it has always been the way of archives to grow, the trends of past years toward greater ease of creating records and greater incentive to keep them have caused a dramatic increase in the amount of material being retained by public and private repositories alike. In one recent year in Canada, 12,000 linear feet of material were accessioned by institutions other than the Public Archives, which alone added 7,000 linear feet.³ Similarly, the number of researchers making use of archival materials has also risen, and the demand is growing most sharply among users outside the familiar discipline of history.⁴

As a consequence, the need for effective records control by archivists is greater than ever. The concept of "control" of records can be broken down into physical control, the ability to locate and retrieve records, and intellectual control, knowledge of the processes that created the records and about the information contained in them. Control is provided through devices called finding aids. Physical control can be achieved fairly easily by the use of a system to indicate the location of material, but intellectual control is a more complex process. The need to retrieve small groups of documents or even single documents from a large body of records has made the need for

effective intellectual control even more acute than in the past.

One procedure for control of records is archival indexing. Archival indexing can be defined as the creation of a list in a fixed order, usually alphabetical, of access points such as proper names or subjects, which are found in a document, file, series, group, or repository, giving in each entry one or more references to the location of material relevant to the term in the body of archival records. Indexing is an important part of the archival descriptive process for several reasons. Only an index provides the user with anything approaching full intellectual control over the many significant name and subject references contained in a holding of any complexity, and only an index brings together the many references to the same name or subject found in various collections in the same repository. Indexes can provide a level of access to the information in discrete documents and to common subjects and names found among several documents that is unmatched by any other type of finding aid.

This thesis concerns itself both with name and subject indexing. As used here, "name indexing" will refer to the selection and use of any personal, geographical or institutional name in a document as an access point, regardless of whether or not the entity named is the subject of the document; "subject indexing" will refer to the topical areas covered by documents, such as "politics" or "organic chemistry."

Historically, there has not been an extensive literature on the subject of indexing archives, even though the index has been

the subject of many writings in the library and information science fields. The topic deserves consideration today, however, for two main reasons. The potential of any archival tool which provides such a high degree of control must be evaluated in a time when archives are able to collect unprecedented amounts of material. In addition, the new technologies available for storing and manipulating information make it imperative that archivists' principles of managing the materials in their care be sound, so that automation can be used to its fullest potential. In many cases, there are theoretical areas where alternative procedures have been recommended for many areas of archival work. These must be compared and contrasted in order to discover which would best serve the needs of researchers and archivists in specific practical situations. The indexing of archives has not been sufficiently explored in the past, and one result has been the emergence of various computer systems for archives which have demonstrably been developed from a poor conceptual basis.

This thesis is an investigation of some of the areas where the archival indexer faces more than one choice. The first chapter will be an outline of the practices of arrangement and description as they are understood and practised by archivists today, and of how indexing fits into this field. It will also identify the various types of archival index and the functions they perform. Chapter one will thus provide the background for the remainder of the work, showing the roles indexes can have in a repository. The remaining chapters will contain analyses of some of the contentious issues, and thereby attempt to indicate

which alternatives seem to offer the greatest promise for the development of archival indexing to its greatest potential. Chapter two illustrates the actual process of indexing and its implementation in a descriptive system. Chapter three examines the merits of controlled and uncontrolled vocabulary indexing, and the use of precoordinate and postcoordinate indexing, as well as the implications for the future borne by the development of automated systems of information retrieval. The conclusion will attempt to bring these concepts together and thus establish how indexing systems of the future ought to be viewed by designers and users.

Other subjects will not be discussed, except tangentially; these include the development of national archival information systems; the technical aspects of different automated indexing systems; comparisons of one system with another to discover which is more useful; and the use of surveys of users to establish the effectiveness of indexing systems. All of these deserve papers or theses of their own, but either they do not come as close to the theoretical heart of indexing as do the issues that will be discussed here, or they have not been the subject of enough of the literature to provide an adequate basis for discussion. In addition, the question of the exact criteria to be used in term selection is too lengthy and complex to be included in a study which attempts to clarify general problems and issues.

Textual archival records, those written on paper, will be the concern of this thesis. While other media for the storage of information, such as photographs, sound recordings, and computer

disks are also found in archival repositories, and their use will likely increase in coming years, the problems they present are in many cases identical to those associated with paper documents, particularly those matters of principle with which this study is concerned.

Chapter One

APPROACHES TO INDEXING TEXTUAL RECORDS

Desk top microprocessors, office copiers, and inexpensive offset printing have made it possible to produce and disseminate information at a staggering rate. Couple this with the administrative and legal demands of an increasingly complex and regulated society, and the capacity of bureaucracy to meet their needs, and the result is literally mountains of records... the larger problem of the 1980s is not bulk but the mass of information. No matter how compacted, this mass presents problems of control and access.[1]

Over the last few decades, the world has been changed permanently by the development of automated systems for the storage and retrieval of information. Computers in various forms have ceased to be the province of specialists and have become a common part of offices throughout the developed nations.

This process has not yet had its full effect in the field of archives, due chiefly to the fact that most repositories have not had the funds available to automate their operations.² To a large degree, particularly in smaller institutions, computers remain a thing of the future for archivists.

Despite this, many large repositories have made attempts to use computers for archival storage and retrieval, to link users with the material they seek. While some of these efforts have been successful, many others have suffered from flaws in concept or execution that limited their usefulness.³

One of the commonest reasons for the limited success of

automated archival systems has been that the systems in question did not take full advantage of the potential contained in archival tools and techniques that were designed and in use prior to the advent of automation.⁴ If future systems created for archives are going to improve on their predecessors and enjoy greater effectiveness, then it is imperative that archivists who will be involved in their creation have a secure grasp of the way these tools and techniques work, individually and together. In this way, the systems will be further enhanced by the power of automation.

Indexing is one archival technique that, because of its great potential usefulness, deserves further exploration than it has received in the past. In order to understand indexing, it is necessary first to arrive at a definition of the procedure. The Gage Canadian Dictionary defines an index as "a list of the contents of a book giving page, paragraph or section references for each of the subjects discussed. The index is usually put at the end of a book and is arranged in alphabetical order."⁵ The Oxford English Dictionary defines it as "an alphabetical list, placed (usually) at the end of a book, of the names, subjects, etc. occurring in it, with indication of the places in which they occur."⁶ Webster's Third New International Dictionary defines it as "a usu. alphabetical list that includes all or nearly all items (as topics, names of people and places) considered of special pertinence and fully or partially covered or merely mentioned in a printed or written work (as a book, catalog, or

dissertation), that gives with each item the place (as by page number) where it may be found in the work, and that is usu. put at or near the end of the work."⁷

None of these definitions is entirely satisfactory as a definition of an archival index, since the first two are bound to the use of indexes in books, and the third leans in that direction; however, together they show the essential features of any type of index. It is a list of terms, arranged in a fixed and usually alphabetical order, giving references to the places where these terms may be found.

Definitions that match archival practice include that of The ALA Glossary of Library and Information Science, which defines an index as "a systematic guide to the contents of a file, document, or group of documents, consisting of an ordered arrangement of terms or other symbols representing the contents and references, code numbers, page numbers, etc., for accessing the contents";⁸ and that of the Dictionary of Archival Terminology: "a list of persons, places and/or subjects referred to in a document or finding aid with location of references thereto, usually in alphabetical order."⁹ This last definition, which is of a definitely archival orientation, and which covers all the essential points, will be the definition of the term "index" in this work. Surprisingly, many archival authorities, including Sir Hilary Jenkinson and T.R. Schellenberg, fail in their manuals to provide definitions of archival indexing. The Society of American Archivists' Glossary also lacks such a definition.

It is important to emphasize the differences between an

archival index and the kind, more familiar to most people, prepared for a book. An archival index is not usually to a single discrete work, but is a compilation of references to terms found in many separate works. While a book index usually gives simple references to page numbers, the hierarchical nature of archival materials often dictates references to several levels of arrangements, while the sheer volume of these records frequently precludes giving the location of every document where a certain term can be found. In addition, because archival materials are the records of various transactions, the subjects treated can overlap to a great degree, and references to certain terms may be far more repetitious in the course of a file than would be true of references in a book. For all these reasons, the indexing of archival materials is a procedure that ought to be considered as distinct from, though related to, indexing of other kinds.

While a substantial part of the literature of archival techniques is concerned with arrangement and description, only a comparatively small number of articles and sections of books have dealt specifically with indexes to archival materials.¹⁰ Moreover, few of these writings have included comprehensive attempts to systematize archival indexing: that is, to show its place in a complete system of information retrieval in a repository, and to show why this type of index is different from other, more familiar kinds, as well as how different archival indexes can vary among themselves.¹¹ A clear understanding of these is necessary in order to allow the reader to grasp the

issues that surround archival indexing today; therefore, this section will show the relationship indexing has to the archival functions of arrangement and description.

Arrangement and description are two sides of the process of making the holdings of a repository useful to the researcher; they enable him or her to know what is in them and, to an extent, to judge whether they will be of use. Arrangement is defined by the Society of American Archivists as "the process and results of organizing archives, records, and manuscripts in accordance with accepted archival principles, particularly provenance, at as many as necessary of the following levels: repository, record group or comparable control unit, subgroup(s), series, file unit, and document."¹² A scheme of arrangement should have as its main aim the reflection of the way the materials so ordered served originally as active records; in practice, this usually means preserving them in the order in which they were kept prior to accessioning.¹³

Basic to arrangement is the principle of provenance. This principle was first developed in Europe in the mid-nineteenth century in connection with arrangement of government textual records.¹⁴ The term "provenance" has a number of meanings in an archival context. It can mean the organization or person responsible for creating a body of records, or information regarding their custody,¹⁵ but as a fundamental concept guiding archivists, the word is defined somewhat differently. Its usage is not uniform; the SAA defines it as "the principle that archives of a given records creator must not be intermingled with

those of other records creators. The principle is frequently referred to by the French expression, respect des fonds."¹⁶ In a somewhat different manner, American archival theorist T.R. Schellenberg defines the principle of provenance as the concept that "archives must be so arranged that the organization and functions that produced them will be clearly reflected by them, administrative unit by administrative unit, subunit by subunit, and record series by record series."¹⁷ Here, the principle has been extended to dictate not only separation by originating entity, but arrangement within the papers of one originating entity in such a way as to show the processes that created them.¹⁸ British archivist and author Michael Cook similarly extends the principle of provenance to mean the preservation of the order in which archival materials were kept during their life as active records.¹⁹ The separate but related concept included in these more broadly defined views of the principle, that is, "that archives should be maintained in their original organizational pattern or structure and in their original filing arrangement in order to preserve all relationships,"²⁰ is known in German as Registraturprinzip, in French as respect pour l'ordre primitif, and in English as the registry principle or the principle of the sanctity of the original order. In order to avoid ambiguity, the term "provenance" will be taken to mean the general principle embodying both respect des fonds and original order, which will be referred to separately by those names where necessary.

In general, the principle of provenance serves as a

universally accepted guide for the basic arrangement scheme of any repository, although in a few cases it may be impossible to identify and therefore preserve the original order. In North America, however, the principle has undergone some refinements. Since the early 20th century, the practices of archivists responsible for the administration of government archives have differed sharply from those of the curators of manuscripts originating with individuals or private organizations. The general line of thought expressed in writing on the former has been dubbed the Public Archives Tradition (PAT) by Richard Berner.²¹ Commentators in this area have tended to stress the arrangement of records in the hierarchical pattern in which they were created in government bureaucracies, with descriptive materials organized to outline those same patterns, and to emphasize the value of documents as records of transactions, rather than as information about various subjects. In 1964, Oliver W. Holmes, an archivist writing in the PAT tradition, gave expression to these practices as they had developed at the U.S. National Archives and Records Service.²² Holmes outlined five basic levels of arrangement. Although there are many variations in practice among repositories, these levels can be discerned in some form at virtually any archival institution in North America.

The broadest level of arrangement in Holmes' scheme is the "depository level," referring to a few basic divisions of material by chronology, organizational divisions, or levels of government. These groupings are mainly for administrative convenience. The "record group level" is the level at which the

records of a single agency are arranged, usually one large enough to have several subordinate bodies within it, but small enough that the record group does not become unwieldy. In using this concept, North American archivists have broken off from the European practice of establishing the records of any subordinate office as a separate unit; it was felt at the National Archives that such a practice could lead to thousands of discrete units of administration that could otherwise be united. A record group can be broken down into subgroups representing subunits of the larger unit whose records form the record group. Each record group is divided into "record series," the third level. A series consists of similar filing units, such as correspondence files or minutes, arranged in a consistent pattern. The pattern can be a simple one, alphabetical or chronological, or more complex, depending on the filing system used. Individual files within series constitute the fourth level, and individual documents in files the fifth and lowest.²³

The other area of theory and practice defined by Berner is the Historical Manuscript Tradition (HMT).²⁴ Since this tradition has arisen out of the administration of small collections of documents, or even individual items, which do not originate in elaborate administrative structures, it has tended to play down arrangement as a reflection of creating processes. Finding aids in this tradition have relied less on the structures of the bodies of records they describe than in the PAT, and more on the content of the documents themselves, often by selecting and giving references to key terms.

Over the past few decades, these two traditions have gradually merged.²⁵ While this process is not yet complete, the five levels have come to be applied increasingly to textual archives from both public and private sources, so that, for example, the personal papers of an individual are regarded as a "manuscript collection" or "manuscript group," which is the functional equivalent of a record group. The levels can be derived from a well-ordered collection of personal papers requiring little or no rearrangement, and used as a framework for description, or imposed on a disordered collection. Their application to both public archives and historical manuscripts is sufficiently widespread that they can be treated together for the most part in a discussion of the principles of arrangement and their relation to description.²⁶ It is important to stress the merging of the two streams, because it allows consideration of the practice of arrangement and description without a need to differentiate between the two, whereas earlier works by authors like Jenkinson and Schellenberg are often written with a sharp distinction between the two in mind.²⁷

Although it is not used in the Holmes outline of the five levels of arrangement, the term fonds should be introduced here. It is defined by the Society of American Archivists as "a term widely used in Europe to designate for control purposes the archives of a particular type of institution or organization; a term comparable to the concept of the record group."²⁸ In common archival parlance, the term is often used as a convenient designation of any archival holding at what corresponds to the

group level; that is, either the records of an agency, or of a person who has created a body of manuscript material comparable to a record group. The Canadian Working Group on Archival Descriptive Standards recommended this usage in its 1985 report.²⁹ In this work, the term fonds will be used to refer to either of these types of holding where no differentiation is necessary.

Description is the other half of the overall process of making records informative to researchers. Description is achieved by creating finding aids, which are defined by the Society of American Archivists as "the descriptive media, published and unpublished, created by an originating office, an archival agency, or manuscript repository, to establish physical or administrative and intellectual control over records and other holdings."³⁰ Description shows the user the arrangement and subject matter of holdings. In general, finding aids should aim to show both what information is in records, and the place of this information in its historical and administrative context to clarify its importance. In this way the user is shown what is in the materials and whether, and how, they may be useful. The names and terms which are selected from archival material for inclusion in the finding aid are termed access points; the corresponding entries in the finding aid give the researcher access to material relevant to his inquiry. These access points can include the proper names of persons who created the material or significant ones mentioned in it, as well as names of places, things and subject areas covered by the material.

Although a comprehensive finding aid program should show researchers both the overall impact and the particular topical issues contained in the material described, not all individual finding aids are designed with both these goals in view. Schellenberg has drawn a useful distinction between two basic types of finding aids. Those arranged according to provenance describe collections, groups, or series, and are structured according to the arrangement of the holdings they describe. Those arranged according to pertinence are prepared in an order that gives the researcher access to material on particular subjects, rather than to particular groups or series, and without outlining the organization of the documents concerned.³¹ There is some overlap between the two, but the commonest finding aids may be placed securely in one category or the other.

The first major type of provenance-related finding aid is the guide. The purpose of a guide is to list comprehensively, usually in permanent form, the holdings of a repository and their importance to the outside world. A guide will contain an entry for every fonds held by an institution. Arrangement of entries is usually alphabetical by name of record group. An entry will include the name of the collection, inclusive dates, statement of the activity of the creator or creating agency, and a note of any significant persons and events in the material.³² Examples of guide entries are printed on the next two pages.

The best-known type of provenance-related finding aid is the inventory, which is the most thorough description prepared of the arrangement and content of a record group. Consultation of this

0036

**OFFICE OF THE DEPUTY MINISTER --
LABOUR, MINISTRY OF**

R.G.: 7 Series II-1 to II-11

Restrictions: 30 years

Volume: 170 feet

Finding Aids: Finding Aid available

Introduction: The office which preceded this one and even the Department of Labour was the Superintendent of the Trades and Labour Branch of the Department of Public Works, for which we have the files for the period 1916-1919. The main gap in this series is for the 1920's.

Series Entries: General Correspondence, 1916-1920; 1930-1953; 1955-1973, (Series II-1). Employment Offices, 1918-1947, (Series II-2). Legislation and the Legislature, 1918-1965, (Series II-3). Low Wages and Industrial Standards Act, 1934-1936, (Series II-4). Dominion-Provincial Youth Training and War Emergency Training, 1937-1950, (Series II-5). Conferences and Conventions, 1948-1961, (Series II-6). Seasonal Unemployment, 1954-1956. (Series II-7). Senior Technical Consultant's Files, 1968-1973, (Series II-8). Executive Assistant's Files, 1969-1972, (Series II-9). Executive Assistant and Programme Analysis Co-Ordinator's Files, 1966-1972, (Series II-10). Executive Assistant and Policy Development Co-Ordinator's Files, 1968-1973, (Series II-11).

Sample guide entry

0803

DALLYN, FREDERICK A., PAPERS
Control #: MU 763 - MU 815
Volume: 26 feet
Dates: 1908-1943
Introduction: The papers of Frederick Alfred Dallyn (1886-1972), a civil engineer who was born in Hamilton Ontario, and educated at the Hamilton Collegiate Institute and the University of Toronto. He began his career with the Provincial Board of Health in 1910, developing a water purification testing station and working on sewage disposal methods. He became Provincial Sanitary Engineer in 1913, and later Director of the Division of Sanitary Engineering. In various cities and towns in Ontario, Quebec and New York State. He also lectured on public health engineering at the University of Western Ontario. In World War I he worked on anti-typhus projects with the Canadian Siberian Expedition. He also patented various advances in sewage treatment.
Series Entries: Project Files, 1911-1943, (Series A); Reference Material, 1912-1937, (Series B); Engineering Drawings, 1898-1933, (Series C); Field Books, 1908-1932, (Series D); Photographs, (Series E); and Publications: Books, 1875-1941, (Series F-1); and Periodicals, 1911-1939, (Series F-2).

device is essential to the researcher who desires familiarity with a particular record group.

The Society of American Archivists has devised a standard seven-part format for inventories. In the United States, these latter devices are called registers, but in Canada the term "inventory" is used for public records and manuscripts alike. The format is as follows:

- 1) a preface, which gives a repository's position on finding aids.
- 2) an introduction, which gives "an overview of the content, origins, and research strengths of the material described" and leads the reader to more detailed descriptions in the body of the inventory.
- 3) a historical sketch of the creating agency, or a biographical sketch of the creator.
- 4) a scope and content note, which states the overall importance of the material being described.
- 5) a description of each series in the record group or manuscript collection, including series title, dates, type of material, arrangement, and subject.
- 6) a listing of individual files or groups of files. This level of detail is not often found in inventories to public records, but is more common in those to manuscript collections.
- 7) an item listing or indexing, an enumeration of each item in the collection, either in the order held or alphabetically. Again, this amount of detail is not common. If an index is included, the amount of detail in it can vary according to

needs.³³

In practice, there is considerable variation from these elements, but the listing gives the essential idea of what sort of information an inventory should contain.

Examples of an inventory series description (types 5 and 6 above) and file list are printed on the next two pages.

The commonest type of pertinence-related finding aid is the catalogue, which presents descriptions together with access points, and arranges the descriptions alphabetically under the access points. Catalogue descriptions commonly refer searchers to more detailed descriptions in inventories.³⁴ While there is widespread variation as to the precise application of the catalogue, the two functions of description and indexing are the essential ones. Entries containing information on the origin, type and location of the various fonds listed are used, as well as entries for names and subjects found in them. All these entries refer the user to the inventory in question. Examples of catalogue cards are printed on page 23.

The other traditional type of pertinence-related finding aid is the thematic or subject guide, also known as the reference list, whose purpose is to outline the material on a theme or subject known to be of interest to a significant number of researchers.³⁵ Typically, this material will be scattered among a number of fonds. An entry might contain the title of each relevant series and a brief biographical or agency sketch, location, type of material, extent, references to other finding aids, and description of the material, with the entire subject

LAW AND STATUTORY REFORM

Ontario Law Reform Commission. 1969-1975. 119 boxes. 78 feet.

The Ontario Law Reform Commission was established by 12-13 Elizabeth II, Chapter 78, and was continued by the Revised Statutes of Ontario, 1970, Chapter 321. It was formed to enquire into and consider any matters relating to the reform of the law having regard to statute law, the common law and judicial decision; to the administration of justice; to judicial and quasi-judicial procedures under any Act; or to any subject referred to it by the Attorney-General. The commission is appointed by the Lieutenant-Governor-In-Council and funded by legislative appropriation. In the years since its creation, it has prepared many reports which have, in a number of cases, formed the basis for new legislation, or amendments to existing statutes.

File listing, see Appendix 5.

OTHER PROJECTS
(continued)

Series 4-66

Box 79

- 79.1 Report on Limitations of Actions, February 3, 1969
- 79.2 Report on Limitations of Actions, Appendices, February 3, 1969
- 79.3 Lists indicating the suggested disposition of those sections of the Ontario statutes which govern the times for instituting actions, by M.J. Coombs, November, 1967

Box 80 THE MECHANICS LIEN ACT PROJECT
Briefs and Submissions

- 80.1 Binder of Submissions and Memoranda with Index to Honourable J.C. McRuer
- 80.2 Brief: The Lumbermen's Credit Bureau, Inc., January, 1967
- 80.3 Brief: The Canadian Bankers' Association, May 9, 1967
- 80.4 Brief: The Canadian Bankers' Association, February, 1969
- 80.5 Binder of Comments and Submissions (General and Post-Report Comment)
- 80.6 Proceedings of Commission of Hearings held at Queen's Park, Toronto, January 4, 1967

Project Working Papers

- 80.7 Section by section comments on Mechanics' Lien Act
Reports
- 80.8 The Mechanics' Lien Act, February 22, 1966
- 80.9 Supplementary Report on The Mechanics' Lien Act, May 26, 1967

Box 81 BASIS FOR COMPENSATION ON EXPROPRIATION
Briefs and Submissions

- 81.1 Binder containing oral and/or written Submissions at Public Hearings held in Toronto on September 26 and 27, 1966, with Index

Excerpt from a sample file list

MG 19 ERMATINGER ESTATE
A 2

Originals, 1758-1874. 6.42 m.
Photocopies, 1766-1966. 1.5 CM.
Portions also available on microfilm
reels C-4556, C-1337 to C-1342, C-375,
C-11353

Montreal - Sheriff's Office ca. 1758-1909
- records of

see: ERMATINGER ESTATE

MG 19
A 2
series 3

guide given an introduction discussing the importance of the subject. The arrangement may be alphabetical by record group name, or numerical by its number in the repository.

From the above discussion, it should be clear that indexing is a procedure which arranges terms in an order which cuts across provenance, and is thus a pertinence-related function. However, it would not be correct to think of "an index" as merely another form of finding aid. Rather, an index is a component of several different types of finding aid; it will be found in some form in all catalogues to archival materials, and in many cases as a supplement to an inventory or guide. While Schellenberg writes about the index as potentially a separate finding aid,³⁶ this does not reflect current practice. For this reason, it is helpful to consider the indexing process as an archival function distinct from all others, rather than focussing on the index itself, which can take a variety of forms. In this work, indexing will not be treated as a procedure leading to the creation of a separate finding aid, but as one that results in certain finding aids including an indexing component in addition to their other functions.

Provenance-related finding aids can be said to be the more truly archival of the two types, since they have their bases in the structuring that distinguishes archives from other sources of information. Only a provenance-related finding aid, moreover, can show a researcher the organization of a body of archival records without his having to consult the materials themselves. For these reasons, finding aids which reflect provenance are a

necessary part of any overall descriptive program.

Provenance-related finding aids have had many articulate and influential advocates over the years, some of whom have recommended their use almost to the displacement of pertinence-related ones.³⁷ However, many users will come to a repository in search of material on a particular "subject," whether this be an actual subject area or the name of a person or organization.³⁸ As American archivist and author David Gracy points out, for such researchers, the prospect of going through many pages of many inventories to find such information can lead to inadequate use of material,³⁹ but search procedures make this necessary in many cases, even when a knowledgeable archivist is also available for consultation, if adequate pertinence-related finding aids are not part of the descriptive program. Moreover, provenance-related finding aids cannot unite the various mentions of the same access point which often occur in different fonds or series. It must be recognized that the central role played by provenance and context, while part of the essential nature of archives, makes it difficult to search for individual names and subject areas if all descriptive instruments are created to reflect the organization of the documents and the administrative structures that produced them. For these reasons, pertinence-related finding aids, which unite entries for similar terms and concepts and show their locations without using provenance as a model, are a necessary part of the archival description process.

In the view of some archival traditionalists, the advantages

of quick access to desired terms and wide variety of terms available are not to be sought in an index, but in the mind of an archivist who is an expert on the materials in his care, and who is to be consulted by users who can expect him to provide access points out of his store of knowledge. Schellenberg has stated that no finding aid can match the information held by an archivist.⁴⁰ This view has been criticized by the American archivist Mary Jo Pugh, who points out that such a process depends too heavily on the personalities of the user and archivist, and that many archivists, in large institutions particularly, will not have the expertise born of long contact with records needed to let them function as human indexes.⁴¹ On balance, it would seem that some sort of written source is preferable to a purely human one which would be subject to changes in temperament, lapses of memory, or sudden absences from work.

Chapter Two

THE IMPLEMENTATION OF ARCHIVAL INDEXING

The purpose of this chapter is to show in a practical sense how archival indexing fits into a descriptive program, and to illustrate the procedures associated with it.

Requests made by users of archival repositories vary widely, but can be broadly divided into two main categories. The first comprises those which are relatively easy to deal with; a researcher wishes to see a fonds already known to him or trace an ancestor about whom some basic information, such as name and approximate lifespan, is known. These requests can be handled quickly; the researchers have a specifically stated goal in mind, and know how they intend to achieve it. Even if they need help from the archivist, the procedure of guiding them will probably not take long because the fonds being sought is already known by the researcher, or can easily be determined by an archivist familiar with the repository's genealogical holdings.

The second category of requests tends to the opposite extreme; inquiries regarding what material of any sort is available relating to a specific person, place, event which is not the specific focus of a fonds, or in many cases a subject area. These requests, less specifically bound to a single body of records, have become increasingly common in recent years as the use of archival repositories has grown well beyond being the

province chiefly of traditional historians and genealogists to include others, carrying out research in non-historical areas of endeavour, who do not frame their questions in the ways many archivists have come to expect from their clientele.¹

Since new forms of question have become familiar recently, archivists are faced with a choice between training users to fit their questions into the rigid mold of tradition, in the hope that they will come to be more like those in the first category, and taking the questions as they come and finding new ways of dealing with them. Some systematization may be added, since some questions will always be too diffuse to handle as originally put. However, there are differences between the needs of scholarly historians and those of researchers in such fields as archeology, urban planning, journalism, the law, film and education.² The latter are often "professional people with minimal historical training who are interested in information about the past, i.e. retrospective information, but not in history as we understand it...." They cannot be expected to "pursue or integrate the information in records as would trained historians."³ It is questionable how useful an uncompromising approach would be in connecting these non-traditional users with material that would serve their needs. This is particularly true if, as a study by the Committee on Finding Aids of the Society of American Archivists has suggested, about half of users tend to begin with a more general subject approach rather than a specific name.⁴

In any case, if the newer types of user make these more general inquiries, and a decision is made to accommodate them,

there will be a need for finding aids which connect requests of this kind with relevant material. Such a finding aid would have to be pertinence-oriented; ones set out purely by provenance, such as a guide to the whole repository or a set of inventories, would mean a long and tedious search procedure. Even with the help of a knowledgeable archivist to guide users only to relevant holdings, the fact that the newer style of inquiry can be more general and subject-aligned than traditional ones means that a long search through series descriptions, file lists, or even documents themselves, might often be necessary, since provenance-related finding aids are not created for the purpose of answering such inquiries quickly, or in fact for swift answers to any inquiries other than ones pertaining to known fonds.⁵

For this purpose, then, a pertinence-related finding aid of some kind would be needed. Of these, the catalogue which includes index entries would appear to be the best choice for incorporation of access points relating to the interests of newer users; it has both the selection of descriptors found in the provenance-related finding aids used to create it, and the flexibility, particularly if it is in the common card form, to incorporate entries. The same is true of those catalogues stored on computer disks. Indexes to particular groups and series, appended to individual inventories, termed "special indexes" by some archivists to distinguish them from the more general kind which serve as a component of a catalogue, would be of far less value in these cases, since they would not allow the user to seek an access point in a single finding aid and discern whether

anything in the repository was of relevance to his search.

If, then, a repository found itself faced mainly with inquiries from users which led easily to particular fonds, either because they were actually requested by name or because an archivist could make the connection rapidly from such a point of inquiry as a proper name, there would appear to be little need for a finding aid incorporating many access points to names mentioned within a particular fonds or to subject areas covered. In practice, however, such a situation would be unlikely to occur in light of the changes that have taken place in the occupations and backgrounds of users and the nature of their requests; even if a repository has not yet been greatly affected by this trend, the future is not guaranteed. Moreover, the more readily handled queries of the past may have been partly illusory, according to Mary Jo Pugh, who suggests that many users who in fact were after a particular subject area couched their questions in name-specific terms in order to facilitate a response from the system.⁶ From the viewpoints of both traditional and newer users, then, a general index would appear to be an integral part of a repository's finding aid system.

In the past, it was the practice of some indexers to derive entries directly from the text of documents. Given the volume of material to be processed in many modern repositories, this has given way to indexing primary finding aids such as the inventory or guide.⁷ The direct indexing of documents tends to survive more in areas of archival work where detailed item description is customary, as in medieval and early modern archives in Britain.⁸

If provenance-related finding aids are used as the basis of indexes, a natural question is which finding aid should be gleaned for the index entries in a catalogue, since by its nature the catalogue is a separate finding aid, and so not obviously linked with other devices. There is no universal agreement on this question, and such older authorities as the Dutch manual writers Muller, Feith and Fruin, as well as Jenkinson and Schellenberg do not lay down definitive guidelines. Gracy suggests using the inventory, the most detailed provenance-related finding aid.⁹ Hugh Taylor, former provincial archivist of Nova Scotia, and Lydia Lucas, the American manuscript archivist, also advocate the inventory for this purpose,^{10,11} as does Richard Berner of the University of Washington, though the mechanics of his system differ from common archival practice.¹² On balance, it would appear that since the inventory is the most detailed provenance-related finding aid that will be created in most repositories, with a scope and content note, series descriptions, and possibly detailed file or item listings, it would appear that it would be the most helpful basis for catalogue index entries created with the browsing or non-specialist user in mind.

Further, the archivist should keep in mind the reason for creating an indexing component; its aim is to guide the user to material sought under a particular access point. Because of this, the decision as to which part of the inventory is chosen as the source of index terms should be dictated by which contains a level of detail sufficient for it to contain all those names and

subjects which could plausibly be used as access points by researchers.

The exact procedures used to determine, in a particular case, which part of an inventory to use as a source of index terms, as well as which terms to select, is best illustrated by the use of concrete examples.

The first example comprises the biographical sketch (here called an introduction), series descriptions, and a portion of the file list from the inventory to the Scott Young Papers in the Archives of Ontario. An archivist intending to create index entries for a card catalogue would note that the biographical sketch contains a few terms that a researcher might seek information about, and thus search under. For example, a researcher might search for material relating to the Globe and Mail or Telegram, or the Royal Commission on Violence in the Media, and could be guided to this collection by catalogue entries for these terms. On the other hand, the majority of terms, such as book titles, would not likely be used as access points, because they are directly related to the creator of the collection, and therefore would not be sought of themselves; a researcher who was interested in the material relating to the writing of one book would search for material listed under the name of the author, and would therefore be guided first by the catalogue entry naming the collection rather than by an index term.

The series descriptions contain additional indexable terms which might be sought by researchers: "Veterans Land Act,"

INTRODUCTION

Scott Young Papers
1940-1981 5.66 M.

Scott Alexander Young (14 April, 1918 -) was born at Glenboro, Manitoba, the son of Percy Andrew Young, a Druggist, and Jean Paterson. He was educated at Kelvin Technical High School, Winnipeg, and started in newspaper work in 1936 as a night copy boy at the Winnipeg Free Press, after having sold them his first story for \$3.00. Shortly he joined the Sports Department and wrote stories there for four years. In October, 1940 he was hired as a Staff Writer by the Canadian Press in Toronto, which brought about his first major move, east.

When the Second World War began, Young was with the London Bureau of the Canadian Press. He joined the RCNVR as an ordinary seaman, and during the course of seventeen months served in the English Channel, in the invasion of Southern France, In Greece, and on loan to the Royal Navy with the 56th Flotilla, Coastal Forces, working chiefly along the Yugoslav coast in the lower Dalmation Islands. At War's end he was a Lieutenant (SB), and Chief Public Relations Officer to Flag Officer, Newfoundland.

In 1945 Young joined the staff of Maclean's Magazine and became Assistant Editor. In his spare time he began writing short stories, and by 1948 this became so lucrative that he quit

Sample biographical sketch

his job and free-lanced full time. In the next seven and a half years he sold about sixty short stories, mainly in the United States, through an Agent in New York. They were purchased by virtually every major U.S. magazine, and some were later reprinted in anthologies. his stories have been published in Britain, Italy, France, Germany, Denmark, Sweden, Norway, South Africa, New Zealand, and Australia. They have also appeared in every Canadian magazine.

From 1957 to 1969, Young was employed as a Columnist at the Globe and Mail, Toronto, then he was hired by the Telegram as Sports Editor. The Telegram folded in October, 1971 and Young went back to his old job at the Globe and Mail. Partly as a result of what he considered to be shoddy treatment by Globe management, and partly because of the lucrativeness of freelance writing, he resigned on April 11, 1980 and moved out to his farm in Cavan Township to write books and stories.

In 1949, Young authored "Red Shield in Action", a history of the Salvation Army War Services during World War II. His 1952 book, "Scrubs on Skates" really launched his career as an author with its popularity. It was eventually translated into Russian and published in the Soviet Union. By 1980 he had produced twentyfive books, including: The Flood (1956), We Won't be Needing You, Al (1968), Hockey is a Battle, with Punch Imlach (1969), Faceoff in collaboration with George Robertson, and later made into a feature movie (1971), Goodbye Argos, with Leo Cahill

(1973), Silent Frank Cochrane (1973), and War on Ice (1976).

He won the National Newspaper Award for sports writing in 1958, and the Wilderness Medal for the television documentary, "The Opening of the West", in 1963. He received three Dow Press awards.

In 1977 Young served as one of the Commissioners on the Royal Commission on Violence in the Media, headed by former Federal Cabinet Minister, Author and Broadcaster, Judy Lamarsh.

The Scott Young Papers are subject to no restrictions, and they are arranged as follows.

Acc.14272
6 May '81

INVENTORY

Biographical and Business Records, 1940-1981, 6 cm., MU 3617 Series A

A file of biographical material collected by Scott Young and added to by the processing Archivist; a file of papers generated by his involvement with a piece of property in Pickering, acquired through the Veterans Land Act, 1955-60; a file of Neil Young's fan mail; and 4 files of expense account papers from Young's employment at the Globe and Mail, and from his company, Ascot Productions.

WRITER & COLUMNIST (Newspaper) Series B

Canadian Press Staff Writer, 1940, 1942-59, 1 inv., MU 3665 B1

Scrapbook of clippings compiled by Young while a Staff Writer with the Canadian Press, Toronto, and later, 1942-59, stored in Oversize.

Globe and Mail Column, 1968, 6 cm., MU 3617 B2

Clipped samples of the column, photocopies, typescripts, Dec., 1967-Nov., 1968.

Telegram Sports Column, 1970, 6 cm., MU 3618 B3

Clipped samples of the column, photocopies, typescripts, etc.

Subject Files, 1949-1981, 54 cm., MU 3619-3622 B4

An artificial file series created by the processing Archivist and containing a variety of material relative to Young's writing and other activities over 30 years. Includes: column and freelance writing ideas, background material, and research; material from Young's crusades against injustice in the sports and legal worlds; response from readers to columns on specific subjects, i.e., marriage, trees, cooking moose, etc. File titles are listed in APPENDIX A.

Fan Mail, 1963-1980, 48 cm., MU 3623-3627 B5

Response from readers of columns, stories, books, etc.

Correspondence General/Invitations, 1964-1981, 12 cm., MU 3628 B6

Correspondence other than fan mail, separated from same by the processing Archivist and filed under the above two headings.

Sample series descriptions

WRITER AND REPORTER (Freelance & Newspaper) Series C
Writing Assignments, 1940's - 1970's 48 cm., MU 3629-3632 C-1

Manuscripts, drafts, research notes and background material for articles, fiction and short stories, films, radio and television broadcast scripts; assigned by newspaper employers, or produced for sale of contracted for by broadcasters. Material is arranged in alphabetical subject files, the titles of which are listed in APPENDIX B.

Manuscripts, 36 cm. MU 3633-3635 C-2

Twenty-three finished manuscripts, mainly fiction or short story, and mainly published in magazines, in MU 3633

MU 3634 and MU 3635 contain rough drafts, mainly of fiction and short story pieces for magazines.

Published Articles and Stories, 1943-1967, 50 cm., MU 3665 C-3

An envelope and 36 complete magazines containing articles or stories written by Scott Young through the 1940's, 1950's and 1960's.

Major Writing Assignments, 1954-1979, 54 cm., MU 3636-MU 3641 C-4

- Dead Duck (magazine short story), 1954, 6 cm., MU 3636
- Canada at Work/Canadian Careers Library, 1960-64, 12 cm., MU 3637 (Scott Young was General Editor of this series, whose name was changed in early 1962, for the Ryerson Press, working with Earle Toppings, Trade Book Editor.) Mainly files of correspondence with prospective authors of other books in the series.
- MacKenzie River Trip, June, 1964, 6 cm., MU 3638
- Canada-Russia Hockey, 1969, 1974, 12 cm., MU 3639
- Canada Cup of Hockey History, 1976, 12 cm., MU 3640
- Canadian Hockey Review, 1979, 6 cm., MU 3641

COMMISSIONER Series D

Royal Commission on Violence in the Media (LaMarsh Commission), 1977, 30 cm., MU 3642-3644

Mainly photocopies of circulated research material, on the film and television media, in Canada, Europe, and the United States. Also a few letters in MU 3642, and the Commission's Final Report in MU 3644.

AUTHOR Series EBook Manuscripts, 1950-1979, 1.86 M., MU 3645-3664

Manuscripts, drafts, research notes and material,
correspondence, etc. for:

- Scrubs on Skates, 1950-51, 6 cm., MU 3645
- (Reviews for Scrubs on Skates, 1952 in MU 3665)
- The (Winnipeg) Flood, 1955-56, 24 cm., MU 3646, 3647
- (Reviews for The Flood, 1957, in MU 3665)
- Big City Office Junior, n.d., uncorrected spare manuscripts,
6 cm., MU 3648
- Spunski at the Maple Leafs Camp/at the Olympics (Juvenile
Hockey series for McClelland & Stewart), 1965, 12 cm., MU 3649
- O'Brien of Renfrew (published fiction), ca., 1966, 12 cm.,
MU 3650
- Hockey is a Battle (Punch Imlach biography), 1969, 24 cm., MU
3651-3653
- Face-Off, 1971, 24 cm., MU 3654-3656
- Goodbye Leo (Cahill), 1973, 12 cm., MU 3657
- War on Ice (Canada-Russia Hockey), 1955-75, 24 cm., MU 3658,
3659
- The Best Talk in Town (Empire Club), 1979, 54 cm., MU 3660-
3664
- (Galleys for The Best Talk in Town) MU 3665

APPENDIX ASubject Files, 1949-1981, 54 cm.,

FILE TITLES LIST

MU 3619

- Abortion
- Actra
- Arctic Trip Notebook # 1, 1969
- Arnould, Pamela
- Articles
- Aviation
- Banff
- Barrett, Pete
- Canadian Speakers and Writers Service
- Character Bits - Men
- Women
- Clean
- Clippings
- Frank Cochrane
- Column Ideas, 1965-76
- Conservative Leadership Convention, 1968

Sample file list (excerpt)

Cooking Moose
 Cottage
 Cottage Theft
 Domtar Pulp & Paper Ltd.,
 Drafts
 Election, Federal, 1965
 Family Compact
 Fraud Case - Lillie, 1967
 Freedom of Expression Panel, 1967
 Gallinger, Don, Case, 1956-63

MU 3620

Gallinger, Don, Case
 Gifts
 Globe & Mail
 Globe & Mail Column
 Hockey
 Hockey - Bassett & broadcast
 Home Owners Protest, 1980
 Hypocrisy of Amateur Sport, 1959
 Ideas - Christmas
 - Light
 Izreig, Saul, Case, 1972
 Jail & Injustice
 Korean Immigrant, 1972
 Liberal Leadership Convention, 1968
 Lost Boys Case, 1958

MU 3621

Marriage
 Mackenzie-King; Wm. Lyon, 1930-32
 McLaughlin Tutorial, 1976-77
 McMaster Expansion
 Moscow Olympics Boycott
 Notes
 Notes - Hockey
 Omemee Bits
 Paterson, Jack
 Pickering Airport, 1972
 Politics
 Prairie Chicken
 Press
 Progressive Conservative Leadership Campaign, 1967 (delegate list
 & voting record)
 Psycho (Paul Sack)
 Puc, Mike (Tennis Player), 1976

MU 3622

Regina vs. Morris, Nov., 1971
 Roberts, John P., Memoires (correspondence)
 Rowbotham, Robert W. (imprisoned on drug charges)

"Young, Neil," "Ascot Productions," "Canada at Work," and "Canadian Careers Library," as well as the subjects of books in series E. There is also a listing for series B-4, "Subject Files," which contains references to several of the major topics covered in the files themselves. As there is a more detailed file list for this series, an archivist wishing to create subject entries might go on to the list in order to gain a clear idea of the overall composition and major subjects covered in the series. In practice, however, it could be expected that only those subject entries considered significant enough to warrant inclusion in the series description would be considered to be also of possible use as access points. The decision would finally be shaped by a criterion more apparent to an archivist used to working with the materials rather than to one merely perusing the inventory: the demand for material relating to subjects covered in the series. This would in turn relate to the research needs of the users of the archives, both known and anticipated. In most such cases, file titles used as index terms in a catalogue would probably result in a great number of entries which were of marginal usefulness at best. Thus, in those cases where a file list exists, it ought to be consulted; in most cases the series descriptions will be the major source of index terms, as it tends to contain those terms which would be used as access points with the minimum amount of extraneous material.

Another example is provided by the series description and file list excerpts for the Ontario Food Council. Here, the series description contains the names of acts passed relating to

ONTARIO FOOD COUNCIL

Chairman/Director's Correspondence. 1940-1979.
40 boxes. 13 feet, 6 inches.

The Ontario Food Council was established in 1963 under an Order-In-Council dated 6 June of that year, and pursuant to the Ontario Producers, Processors, Distributors And Consumers Food Council Act, 1962-1963, Section 2. It was authorized to investigate and promote research into marketing practices, domestic and foreign, which existed or would have existed in Ontario agriculture. It also came to actively promote at home and abroad the consumption and sale of a wide variety of Ontario agricultural products. The Council represented the Ontario food industry and acted as a Board of Directors, with administration lying in the hands of its sections and committees, some of which were convened only for as long as a task was being undertaken. The Consumer Section acted as a liaison between the consumer, industry and government, and became a permanent arm of the Council. By Section 17 of the Ministry Of Agriculture And Food Statute Law Amendment And Repeal Act, 1978, proclaimed by Order-In-Council 376/79, and which came into force 1 February 1979, the Ontario Producers, Processors, Distributors And Consumers Food Council Act, 1962-1963, was repealed. The functions of the Ontario Food Council's Administration Branch were incorporated into a newly created Market Development Branch. This Branch worked directly under the administration of provincial government, rather than at the arm's-length distance originally contemplated for the Ontario Food Council; although this had not always been the case in day-to-day practice.

The Chairman/Director's Correspondence contains copies of letters and memoranda sent to Ministry officials, original incoming material, and a large proportion of files containing correspondence, informational sheets, brochures and minutes of Ontario food associations and institutes. In essence it encompasses all the activities of the Food Council. The original order of these records was rather chaotic, reflecting a questionable filing system, and there is some overlapping of files between this series and Series 16 - 112 to 123 which follow. Some rearrangement of file order and titles has been undertaken to attempt to rationalize the system and make its use more convenient for researchers (for instance, where the same subject is referred to by two different titles). This series also contains numerous files referring to the activities of the Ontario Food Council office maintained at Ontario House in London.

File listing, see Appendix 64.

Sample series description

8.6	Dairy Task Force.	1973
8.7	Eggs.	1965-1968
8.8	Ellis, R.E.	1973
8.9	Ellis, R.E. - Monthly Reports.	1973-1975
8.10	FAO/WHO Food Standards Conference.	1969
8.11	Farm Products Inspection Branch.	1968-1970
8.12	Farm Products Marketing Board.	1967-1970

Box 9.

9.1	Farmers' Markets.	1976-1979
9.2	Financial Statements - O.F.C.	1964-1978
9.3	"Food Facts".	1964-1970
9.4	Food Prices.	1966-1968
9.5	Food Prices.	1970-1973
9.6	Food Prices.	1973
9.7	Food Prices.	1973-1974

Box 10.

10.1	Food Prices - Bread Price Increases.	1973-1974
10.2	Food Prices - Meat Price Increases.	1974
10.3	Food Protein.	1973
10.4	Food Service Industry.	1972-1973
10.5	Fresh for Flavour Foundation.	1973-1974
10.6	Fresh for Flavour Foundation.	1975-1976
10.7	Fresh for Flavour Foundation.	1977
10.8	Fresh for Flavour Foundation.	1978
10.9	Fresh Fruit and Vegetables Section of O.F.C.	1964-1967

Box 11.

11.1	Frozen Foods.	1968-1972
11.2	Fruit and Vegetable Containers Standardization Committee (also known as the Plastic Tote Box Committee).	1964-1965
11.3	Fruit and Vegetable Industry (Processed), Task Force (including references to a Study of the Food and Beverage Industry).	1978-1979
11.4	Fruit and Vegetable Market Situation.	1978
11.5	Fruit and Vegetable Products Export Promotion Council of Canada (FAVPEP).	1964-1967
11.6	Fruit and Vegetable Quality Program.	1967-1970
11.7	Fruit and Vegetable Situation.	1970
11.8	Fruit and Vegetable Storage Assistance Program	1977-1978
11.9	Fruit Processing Industry Study.	1970-1972
11.10	Fruits and Vegetables, General.	1968-1970

Box 12.

12.1	Fruits and Vegetables - Vegetable Research Committee.	1968-1969
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Sample file list (excerpt)

12.2	Government Office Outside Ontario, Task Force on	1972
12.3	Grade Nomenclature and Uniformity of Grade Names.	1964-1972
12.4	Grape Loan Program.	1975
12.5	Grape Loan Program.	1976 (1)
12.6	Grape Loan Program.	1976 (2)
12.7	Haulers' Licenses - Reciprocity.	1972-1973
12.8	Haulers' Licenses - Reciprocity.	1977-1979
12.9	Hinoat.	1973-1974
12.10	Honey Section of O.F.C.	1964-1965
Box 13.		
13.1	Hooker, L.G.	1971-1972
13.2	Hooker, L.G.	1973
13.3	Hooker, L.G.	1974-1975
13.4	Huff, Morris A. - General.	1969-1970
13.5	Huff, Morris A. - General.	1971-1972
13.6	Huff, Morris A. - General.	1972
Box 14.		
14.1	Huff, Morris A. - General.	1973
14.2	Huff, Morris A. - General.	1974
14.3	Huff, Morris A. - General.	1976
14.4	Huff, Morris A. - Monthly Reports.	1971-1974
14.5	Humfries, Walter.	1970-1974
14.6	Hydroponics.	1973
14.7	Imports of Produce - Ontario Regulation.	1958-1968
14.8	Industry and Tourist, Ontario Ministry of Japan Office.	1971-1974
14.9	Klassen, M.J.	1970-1971
Box 15.		
15.1	Klassen, M.J. - General.	1972
15.2	Klassen, M.J. - General.	1973-1974
15.3	Klassen, M.J. - Monthly Reports.	1974
15.4	Land Use Planning.	1972-1973
15.5	Lettuce Meeting.	1966
15.6	Licensing and Joint Ventures Abroad.	1969
15.7	Loss Leaders.	1970-1975
15.8	Lynch, J.M. - Monthly Reports.	1974
15.9	Maple Syrup - General.	1969-1970
15.10	Maple Syrup - Equipment.	1969-1973
15.11	Maple Syrup - 'Expo' '67.	1967
15.12	Maple Syrup - Festivals.	1973-1974
15.13	Maple Syrup - Fort William Indian Band.	1968-1969
Box 16.		
16.1	Maple Syrup - Interdepartmental Committee on Maple Syrup.	1966-1974
16.2	Maple Syrup - Licensed Manufacturers.	1966-1967
16.3	Maple Syrup - Maple Information Days.	1970-1972

automatically become index entries. In such cases, guidelines will be needed for the study and evaluation of the material and finding aids. As this process of evaluation becomes more familiar to archivists, it will become easier to scrutinize material with this in mind before other finding aids have been created, thus speeding up the process by uniting index term selection and inventory creation to an extent.

The first criterion will be the nature of the material; how many descriptors will be available, and whether these will be of types likely to be used as such by researchers. For example, names of correspondents and issues discussed in a particular fonds would generally be likely terms to be sought, whereas file titles that merely gave a type of material, such as "Minutes" or "Correspondence," though they could be useful on a file list, would not be worth indexing. In any case, descriptive paragraphs from inventories would probably be the most consistent source of useful access points.

Second, the nature of users and their requests should be a factor in the selection of index terms as well as in the decision whether to index, particularly with regard to the rise in non-traditional archives users. If there has been a rise in the number of questions that ask for linkages between a broad area of knowledge and the holdings of the repository, it may be a signal that index entries ought to include a high proportion of subject terms that will indicate where material pertaining to these subject areas can be found. If not, subject indexing should still be a priority, since some inquiries of this type will

this body as well as names of related organizations; however, there is not a great deal of detail as to the subjects treated. In this case, the archivist who wished to create index entries for a catalogue would be well advised to examine the file list. The titles found here show many terms which might be used as access points, such as the names of agricultural products and organizations, as well as such subject areas as "hydroponics" and "land use planning."

To sum up, normally the archivist who creates the inventory should use the series descriptions as the source of index terms. In some cases, however, it will also be necessary to make up a file list, and if this is done, it ought to be consulted to see if the file titles contain additional possible access points.

Once a descriptive program which includes a general indexing capacity is in place, archivists there will afterwards often find themselves asking whether material which has yet to be processed will be worthy of indexing. Incoming fonds will be weighed in light of whether the access points attached to them for inclusion in other finding aids, particularly the inventory scope and content note and the file list, should be rearranged for inclusion in the indexing component of a catalogue.¹³ If it is the policy of the institution to do so with all such access points, there will be no question of inclusiveness, since the procedure will be automatic. In many cases, however, a repository will not have the resources to be so all-encompassing, or its policy will be that not all descriptors should

occur, but the main focus will probably remain on various sets of names.

Third, archivists should also check to see if there are other fonds on areas of inquiry similar to the ones in question. If there are in all only one or two, and those not of great size, it might be easier for a small repository to guide users to them and let them do some of the hunting themselves, rather than taking the trouble to index extensively. If there are several fonds relevant to a specific subject area, or even one if it is large, indexing will probably be more efficient.

In addition to these, the time and funds available for a project of this sort will doubtless have to be taken into account. If a repository has one or more prestigious collections for which it is well known, there may be a strong urge to make it an early target for a thorough indexing. This may well be a desirable goal, but the decision on whether to do so should be dictated by the nature of the access points within the material and the nature of the demand for it.

In the future, as data processing and information manipulation become more commonplace, it will become easier simply to rearrange all access points from inventories and other finding aids produced by these methods into index entries automatically. However, even in repositories where this becomes the case, some discrimination ought to be used in order to ensure that all index entries are based on informative access points.

Indexes prepared to individual groups or series are of lesser importance to most repositories than those incorporated

into catalogues, because they provide access to material only after the user has ascertained that the fonds which it describes is the one desired, and thus leave the first part of the search to be followed along other channels. However, they can be useful for fonds of such great importance that they are pre-eminent within their repositories and widely known outside. In this case, users who wish to perform detailed research and ask questions relating to specific names and areas of inquiry will already know what fonds they are seeking. Such an index would provide the same sort of access as a comprehensive card catalogue, but without the need to guide the user to the fonds it described. Even in such a case, a special index would be useful mainly if the repository had few other holdings it wished to index, or if it wished to show off its most famous fonds with a deluxe set of finding aids.

Although the index has been presented here as an important part of the inventory and guide, and an integral part of the catalogue, it must be admitted that it is an area which has often been neglected in the past, with many provenance-related finding aids not indexed at all, while catalogues have contained inadequate name and subject access points. Several reasons for this state of affairs, found in many repositories in all areas, suggest themselves.

One is that indexing has been seen as a luxury, something for repositories with excesses of money and staff time, rather than an integral part of a descriptive program. Another is that

archivists have perceived indexing as not arranged according to provenance and therefore something less than truly archival. Still another is that indexing has been viewed as a poor substitute for the services of an archivist who has a thorough knowledge of the material in his care. Finally, some archivists, in writings which have had a wide circulation,¹⁴ have treated indexing not as part of the creation of a total descriptive system, but as something which can be done on its own through a separate perusal of the material involved. As a result, archivists may well have seen indexing as a worthwhile goal which they meant to pursue at some later time, and never did in the face of more pressing commitments.

All of these misapprehensions can be traced back to an inadequate understanding of the place indexing holds in a finding aid system, whether pertaining to its basic legitimacy, its practicality, or its relationship to other tools of description. An accurate understanding of its true place, however, would eliminate these inaccurate ideas.

Arrangement and description are the areas where the hopes for exploitation of the new capabilities of information retrieval technology have been greatest. If these hopes are ever to be realized, however, an understanding of the functions of all phases of arrangement and description will be necessary, particularly if the intention is to combine the power of automation with that of the access provided by indexes.

Chapter Three

INDEXING VOCABULARIES AND KEYWORDS

Beyond an understanding of the importance of indexing and its place in archival retrieval, an archivist must also have some knowledge of the technical aspects of indexing, and the choice of procedures available. The overall task of any indexer can be defined as helping the user find material relating to an entity or idea, whose location is not known to him, using a systematic guide to the relevant concepts. The indexer is responsible for giving the user a maximum of references to material relevant to his inquiry with a minimum of extraneous references. The precise choice of terms that will be used is therefore important in helping the indexer produce an index that meets these criteria.

Different indexing procedures, such as controlled and uncontrolled vocabulary and precoordinate and postcoordinate indexing, have their advocates who maintain that they best help to provide such efficient access. These procedures have been discussed mainly from the viewpoints of librarians and information scientists, but are important for archivists as well. Although the literature in these fields does not usually deal with archival concerns, the principles found there are relevant in considering the special functions and problems of the index to archival materials.

To many observers in the indexing field, the nature of the

English language is such as to require regulation of the terms used in an index. Words that have more than one meaning, concepts that can be expressed by two or more synonyms, and the fact that words can change meaning over a period of time, all are cited as reasons for careful control of which words are used as access points. In order to provide such control, several devices are available: the classification scheme, the list of subject headings, and the thesaurus, all of which contain those terms chosen as preferable to their possible alternatives, for the indexer's reference in the course of his work.¹

The process of indexing materials by using a collection of preferred terms is known variously as keyword indexing,² use of an indexing language, or controlled vocabulary indexing;³ it will be referred to here by the last term or by an abbreviation, CV indexing. In indexing a particular piece of material, the indexer consults one of the lists of terms to ensure that those he chooses are consistent with the established pattern.

Other indexers have advocated leaving to themselves the choice of which of several possible terms to use.⁴ As well, documents and articles can now be stored in computer data bases; where this is the case, the searcher can enter a desired word and see if and how it occurs in a particular text.⁵ In this case, there is no need for the indexer to scrutinize a work for key concepts in the process of subject analysis; rather, all words, except for prepositions and others included on a stoplist, are available for retrieval. These are different forms of uncontrolled vocabulary (UV) indexing, also known as free text or

natural language indexing.

A complete system of CV indexing consists of three parts. The first, the main vocabulary, is the list of all those possible words which have in fact been selected for use in entries to denote the concepts they represent. The second, the approach vocabulary, includes all those possible terms which were not so selected, but under which a user might seek out a desired concept, and to which are appended references to the synonymous terms used in the process of indexing. The third part is the syntax, the network of relationships in meaning among terms used in the main vocabulary. Some terms will be linked to others that are wider in scope, or to others that are more precise, or that are connected but distinct in meaning.⁶

The best way to illustrate these relationships is through concrete examples. In the 1880's, the National Policy was a program of economic development which included the construction of the Canadian Pacific Railway, the settlement of the West, and tariff protection for Canadian products. In turn, the building of the railway, for example, was a matter with many aspects, such as the people associated with the project (Sir John A. Macdonald, William Cornelius Van Horne), places along the way (Kicking Horse Pass, Craigellachie) and the effects of the project. "Canadian Pacific Railway -- Construction" is an aspect of "National Policy," describing one part of it; the former is thus said to be the narrower term. At the same time, a term like "Van Horne," where relevant to the topic, would deal with an even narrower aspect still, and hence "Canadian Pacific Railway --

Construction" stands in a broader term relationship to it. Other aspects of the National Policy, such as the settlement of areas along the route of the railway, are related to this one, yet distinct in meaning; these are neither broader nor narrower, but are called related terms. The whole network of relationships among all terms being indexed is the syntax of the vocabulary.

In dealing with published materials, terms for a CV are selected from examples of the literature being indexed, from classification schemes and thesauri in related areas, and from dictionaries and glossaries.⁷ Terms are regulated so that common nouns are assigned standard spellings, and proper names given specific forms. The singular is used for four types of noun: processes (evolution), properties (size), concepts (love) and unique things (National Policy). The plural is used for things and classes of things (plants, animals). The overall aim in term selection is to provide a list of all terms that will be used, while keeping different meanings separate, although words with more than one meaning may be used if qualifiers are added, e.g. "bank -- financial" and "bank -- soil," or simply "bank -- 1" and "bank -- 2."⁸ Approach vocabulary terms are also used in the index to guide the seeker to the preferred term.

The three devices used for presenting terms in a CV for the use of indexers differ in their treatment of the relationships among terms. A classification scheme presents them schematically, with hierarchies of narrower terms listed under broader ones.⁹ A list of subject headings lists them in alphabetical order, but does not show relationships, except

through "see" and "see also" references, which guide the user to terms which have any sort of relationship to the one in question. Only a thesaurus presents the terms in a CV in alphabetical order, and gives all hierarchical relationships, to one level above or below in the case of broader and narrower terms, for each. The thesaurus can be used not only by the indexer, but by the user in search of terms relating to his inquiry. Alternatively, these references to other terms can be incorporated into the index itself.

Systems that use controlled vocabularies can be divided into two types, precoordinate and postcoordinate. In any search, a user may wish to retrieve only those documents which pertain to two or more index terms. For example, a researcher might require only materials relating to the construction of the CPR in British Columbia, and not those relating to its construction elsewhere, or to other aspects of B.C. history. In a precoordinate system, these two terms from the thesaurus might be combined to form a compound entry in an index, for example, "Canadian Pacific Railway -- British Columbia" or "British Columbia -- Canadian Pacific Railway," and so, the user could locate material relevant to an inquiry in his precise field without having to consult extraneous matter. If the two were not so combined by the indexer, however, the user would be faced with a larger search.

In a postcoordinate system, no entries are created for compound concepts. In the simpler postcoordinate systems, the user must consult the index entries for each of the simple concepts contained in the compound concept he has in mind, and

then see for himself which documents concern the particular subject combination. If automated facilities are available, the user can search for entries listed under two or more desired terms with the aid of a computer.¹⁰ For example, a researcher could seek out material on forest workers' unions in B.C. by combining the terms "forestry," "unions," and "British Columbia" in a search.

The advantages of a precoordinate system are that predetermined multi-concept headings allow greater precision in index terms; not only can it be easier for the user of the index to tell if a given series or file is on the combination of subjects he seeks, but false associations are reduced. Postcoordinate indexing, however, is less costly and faster to do. In addition, it is attractive to many users from the point of view of recall and precision.

These two terms refer to characteristics usually found in a complementary relationship in the archival retrieval process. A search which produces a high level of recall is one in which the user obtains a large number of documents bearing on the user's area of inquiry. Such a search is typically also characterized by low precision, meaning that only a small percentage of the material retrieved will in fact be relevant to the user's research needs. Similarly, a search giving high precision will usually also yield a low level of recall. A postcoordinate search is one which tends to produce high recall and low precision, and while some users may welcome the large amount of material retrieved, others may find the large number of

extraneous documents annoying or self-defeating.¹¹ False associations in postcoordinate indexing can be avoided by the use of links to indicate which subjects in an item are related, but these can be cumbersome to use. Where computer technology is available, it is also possible to combine pre- and post-coordination, by coordinating some terms when indexing is done but allowing for further coordination during searches.

An uncontrolled vocabulary index, by contrast, does not involve the preparation of a thesaurus, because index terms are derived directly from descriptions of documents. Terms are selected freely and incorporated in an index, or, as has become increasingly common recently, nearly all words are made available as access points in a data base. Some books have been indexed this way, as well as a wide variety of materials indexed by automated processes. The two systems can best be evaluated by examining the strengths and weaknesses of each.

The main problem associated with a controlled-vocabulary index is that it requires the services of trained indexers to prepare the thesaurus and assign terms to specific documents. Once an automated uncontrolled-vocabulary system is implemented, it is lower in cost, and therefore more attractive to many managers. Other problems with controlled vocabularies relate to the adequacy of particular systems and operations, as it is possible to create a thesaurus which omits many access points, or for an indexer to do an inadequate job of subject analysis on a given document. These are not problems associated with automated UV.

When an uncontrolled-vocabulary system is used, a greater burden is placed on the user than with CV. Since so many words have synonyms, near synonyms, and related terms, as well as variant forms and spellings, the user must think of and search under a number of terms to ensure that he is not missing any references. When different terms are coordinated in a search, a machine cannot distinguish between items that have some significant relationship and those that do not, whereas a CV indexer can discard those instances where a relationship is trivial or illusory. The risk of such false connections will be much greater where nearly every word of a document is made an access point.¹²

Archivists thus face the choice of whether CV or UV is more appropriate for their situation, and if the former, another choice between pre- and post-coordination.

Full exploitation of the advantages of a UV system would appear to require indexing of every word in a description, other than those normally put on a stoplist. This is a viable alternative in the case of newspaper and abstract indexing, but not in archives, considering the volume of material to be processed and the fact that archival materials often concern themselves with more than one subject area, even at the lower levels of arrangement. In addition, many file titles are uninformative, giving only the type of record contained and inclusive dates. Records are increasingly being produced in machine-readable form, which opens up the possibility that UV might be used effectively to index them, but this lies in the

future for most repositories and outside the scope of a work on textual archives.

Another reason why UV indexing might not be appropriate for archival materials is that vocabularies change over long periods, and many older documents would contain obsolete words which would not occur to many users as access points. While this is a standard problem with UV, it becomes acute when materials as old as those found in many archival repositories are concerned. To be sure, a CV thesaurus could also become outdated, but the task of updating it would be less onerous than coping with an obsolete UV index. It would also appear that while a UV index would initially cost less to prepare, the amount of editorial revision needed to eliminate long and frustrating searches would more than offset these early savings, ideas confirmed by the findings of a study by the Midwest State Archives Guide Project.¹³

Controlled vocabulary thus appears the more viable option for archivists today in the majority of cases. If an archivist decides to use this system, the first decision he will have to make will be whether to use pre- or post-coordination. In the library and information science fields, the main attractions of precoordination are the fact that it gives a high rate of precision between the exact subject desired and the documents delivered, and the fact that users need not have access to automated searching facilities to combine terms. Postcoordination, on the other hand, offers a high level of recall and costs less to implement than its alternative. Professional researchers such as academics are widely considered

to prefer high recall, as well as many amateurs, although this view has been questioned recently.¹⁴ The initial savings postcoordination offers will also make it attractive to repositories on a limited budget, except in the case of the smallest indexes. In the case of very large indexes, however, some degree of precision at the expense of recall may be required.

Precision and recall have traditionally proved very difficult to balance, and it appears that for the foreseeable future some choice will have to be made between them. The archivist deciding between pre- and post-coordination will face this choice, but there will not be one correct answer; the decision will be determined by several considerations. Conditions vary so greatly among archives that rigid rules for such a decision cannot be established, but the following factors will often come into the question.

The issue of the coordination of subject terms will prove important only if the researcher's inquiry is of a somewhat complex nature, relating to two or more subject areas. If the request is merely for the name of an ancestor, a simple listing of names would be adequate. Personal names as access points are not usually coordinated with anything in the course of indexing archival materials.

In cases where such more complex requests are anticipated, an important point will be the aim of the index contemplated. If it is intended to guide researchers to large bodies of material, such as collections and series, into which they can pursue a

general inquiry, a high level of recall may be more desirable than precision, and hence a postcoordinate system would be attractive. On the other hand, if an index is to be created for a particular series or group in some detail, it will probably be important enough to be worth a precoordinate index with its higher degree of precision. In addition, a specific series or group may still be small enough for a researcher who knows its structure to search part of it for a desired combination of terms even if it is not included in a precoordinate index.

Postcoordination is more convenient to use if the archives offer automated searching facilities to locate materials relevant to two or more index terms, particularly if they can be used by researchers. If no computer facilities are available, the amount of material to be processed and the consequent size of the index may decide whether postcoordination would still be practical. In a repository with computers, the lower initial cost of postcoordinate indexing may also be an attraction.

The wishes of researchers and their opinion as to the usefulness of existing indexes should also be weighed. It is likely that academics and professional researchers will prefer a high degree of recall and the ability to coordinate their own terms during searches.

No matter which system is used, the preparation of a thesaurus should be a high priority. Many repositories have not prepared them in the past, but the need for them will increase with the volume of material. Archival repositories have created their own in the past, and the unique character of each

institution, the issues and people dealt with in the holdings and the history of the local area, all would make it impractical for one simply to use the thesaurus prepared by another wholesale, even if such were commonly available, which has not tended to be the case. Because of this, while there will be certain terms common to many archival thesauri, each new one will probably have to rely on several sources for its preparation. Thesauri to the subject areas concerned will be helpful, as will histories of the subject for terms used in the past, and particularly a survey of the material for terms. As new accessions are indexed, the thesaurus will likely be expanded.

One of the most important differences between such traditional forms as the indexing of books and the abstracting of scholarly articles, and archival indexing, is that the former deals with clearly defined units, such as books, chapters, and individual articles, which have already been given titles, or, if academic works, have been abstracted. These titles and abstracts normally give some idea of the contents of the index in question. Because of their informative nature, they can be used as the bases of index entries, by selecting the terms they contain which are significant to their meaning, and listing the document reference number, and sometimes the whole title, under each. Often these entries are supplemented by others listed under key terms which do not appear in the title, selected from the body of the text.¹⁵ Archival materials, by contrast, are not generally given titles by their creators, since they are not intended to be

published works. They are assigned titles at different levels by archivists, but these will not necessarily contain useful access points. As a result, the most generous source of index entries lies in the inventory description or similar detailed analyses of contents.

As with any kind of indexing, the drudgery and risk of error which are involved in selecting keywords from titles of published items have been alleviated in the past generation by the development of automated processes to select and manipulate information. In the case of indexing titles, the potential of the new technology was particularly great because of the possibility of eliminating the element of human analysis from the indexing process altogether. It became possible to use every word in a title as an index term, while automatically blocking those common words which would not be used as access points.¹⁶ The only human contribution lay in deciding on the titles to be indexed, and in checking the finished index. Automated indexing has become an essential part of information retrieval in the area of conventional published documents. Some systems have involved the automatic rotation or permutation of terms selected manually. Those which make the actual selection of terms from a document an automatic process, however, have had the greatest impact.¹⁷

The automatic separation of key terms in titles from those which would not serve as useful access points is a process which calls for careful planning. There are many methods for selecting these terms, but a program for doing so would normally exclude a stoplist of common parts of speech as well as certain other words

which are general but uninformative, such as "theory" or "report."¹⁸ In some cases, all other words would be used as index terms, which would make the index quite bulky if the number of available words were not curtailed by restricting them to those found in a title or abstract. There are other cases where only certain words remaining would be used, such as those capitalized, but the use of a stoplist and inclusion of all other terms appears the surest method of including all relevant terms.¹⁹

The mere inclusion of a keyword with its location in an index entry does not usually provide the user with a sufficiently clear idea of the significance of the term in its context. For this reason, various systems have been developed to show users the original meaning of the term without forcing them to consult the document itself. The most influential of these has been the Key-Word-In-Context (KWIC) indexing system, which has been used extensively to create computer-generated indexes.

In a KWIC index, all words in a title, abstract, or full text not on a stoplist are selected for indexing. Each keyword is then shown as the middle of a line, set off from but surrounded by the words originally appearing around it. In this way, the term is shown in its original context. In the case of a short title, the entire context may appear on the line; otherwise only the words immediately before and after will be visible. The keywords are arranged alphabetically.²⁰

While the KWIC method gives the user an idea of the context which produced a term, the entire context will not always be

clear if titles are not the basis for entries. In addition, if an entry is constructed from each appearance of a keyword, the resulting index will be long and of dubious usefulness, since a concordance-type index will not normally be needed.

The Key-Word-Out-of-Context (KWOC) indexing system shows the title or phrase from which each term listed was derived, except for the keyword itself. In this method, the keyword is extracted and forms the heading.

Both KWIC and KWOC indexes make it difficult to perform coordinate searches, since it is possible only to arrange entries for each term in alphabetical order. However, modifications of these systems have been introduced to remedy these flaws, and the use of KWIC in particular continues in document retrieval, particularly in indexes to journal articles.

The different nature of archival documents, their sometimes uninformative titles and often lengthy descriptions, all preclude the wholesale importation of these techniques, but they deserve consideration. The main problem with automated extraction and permutation of index terms in this context is that the methods discussed above normally index a word every time it appears. This will be of use in dealing with titles and abstracts, but such terms might appear numerous times in a scope and content note, series description, or file list. One possible modification of this system would be to index each keyword more selectively, possibly once for every series description or file title in which it occurs, for example, depending on the level to which indexing is keyed. However, this would involve human

ASITES/NEW CONCEPTS IN	FOODBOURNE ILLNESS BACTERIA VIRUS FUN	105266
ESSED CONDUCTION HEATED	FOODS/INST COMPUTER DETERMINATION O	105546
ID AND SUCCINIC-ACID IN	FOODS BY INST GAS CHROMATOGRAPHY BEE	102081
ERMINATION OF DULCIN IN	FOODS INST DIALYSIS / STUDIES ON DETE	102210
FROM INVESTIGATIONS ON	FOODSTUFF AND ARTICLES OF CONSUMPTION	102080
O RECEPTORS IN THE CATS	FOOT / THE NATURE AND LOCATION OF CER	103193

ADULTS

A DESCRIPTIVE STUDY OF BLACK AMERICAN	*	OF ACHIEVEMENT FROM AN	
EXISTENTIAL FRAMEWORK.			097861
A STUDY OF THE VISUAL LANGUAGE PROCESSING ABILITIES OF BRAIN INJURED			
* :APRAXIC VERSUS DYSARTHIC SUBJECTS			097865
VISUAL SEQUENTIAL RECALL OF ASSOCIATIVE AND NON-ASSOCIATIVE STIMULI			
IN UNILATERALLY BRAIN-DAMAGED AND NORMAL	*	.	067524

ADVANCED

THE	*	EVOLUTION OF GLOBULAR CLUSTER STARS	045879
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ADVANTAGE

THE RIGHT EAR	*	FOR THE PROCESSING OF LINGUISTIC STIMULI	
			067890

participation and rob the system of many of its economic advantages. In addition, many users will wish to make coordinate searches, which would not normally be possible with the above methods.

However, the speed of production which automated indexing offers makes its exploitation in a more archival form an avenue to be explored further by archivists. The intellectual advantages to the user which would result from giving him an idea of the context of an indexing term are also desirable.

One more recent system containing elements of both automation and term coordination is PRECIS (Preserved Context Index System), developed in the early 1970s by Derek Austin of the Bibliographic Services Division, British Library. The original aim was to produce a subject index to the British National Bibliography directly from machine-readable records, but in fact PRECIS can be used to index any sort of textual material, including archival records.²¹ The mechanics of PRECIS entry construction are complex and have been developed to meet a wide variety of contingencies. Only an outline of how the system works will be presented here.

In PRECIS, the terms for indexing are drawn manually from the document in question, and permuted by computer.²² Each entry for the document contains a series or "string" of terms. These strings include most or all of the terms extracted from the document, in an order which gives the user a summary of its contents.

A document might have as its topic, "Training skilled

personnel in the Canadian footwear industries,"²³ in which case a term string would be selected as follows: "Canada. Footwear industries. Skilled personnel. Training." An automatic process called "shunting," which can also be done manually where no computer facilities are available, would cause as many of these terms as desired by the indexer to be used as access points in the lead position in entries, while preserving the syntactical relationships which convey the meaning of the entry. The possible entries here would be:

Canada.

Footwear industries. Skilled personnel. Training.

Footwear industries. Canada.

Skilled personnel. Training.

Skilled personnel. Footwear industries. Canada.

Training.

Training. Skilled personnel. Footwear industries. Canada.

The following would not be an entry, because the order of terms obscures the meaning:

Skilled personnel. Canada. (Are the skilled personnel

Footwear industries. Training. trainers or being trained?)

In practice, each of the four terms might not be placed in the lead position; the decision as to the usefulness of putting a term there would be the indexer's.²⁴ The skill of concept analysis is not one which can be quantified entirely, and must to a degree be learned by the operator by experience. However, Derek Austin maintains that string writing is a skill which can be mastered in a week or so.²⁵ There are many further complications when compound subjects on the names of actions being performed are involved, but the above gives a basic idea of how the system is conceived and operated.

In the mid-1970s, a detailed study of the performance of PRECIS in archival use was carried out in Britain.²⁶ The Public Record Office and Scottish Record Office commissioned a comprehensive study of the role indexes played in these institutions, how useful computers would be in this task, and which system to use. Many such were considered, and PRECIS was applied to a number of bodies of records in practical tests.

The results of the study showed that PRECIS had several advantages over other systems. While the structure of entries as conceived in the original system was felt to be too rigid for some of the subject entries that were created, it proved flexible enough to be adapted. The amount of vocabulary control afforded by PRECIS and its ease in generating multiple entries were also found helpful. The length of entries created was an advantage in some cases, but in many it was felt that such entries were expensive and self-defeating.

Criticisms of PRECIS were that it was too complex for use in

cases where only simple entries needed to be generated, and that the links among the components of an entry made it inappropriate for indexing a subject with disparate aspects.

As with almost any system, especially one not originally created for archival materials, PRECIS had its strong and weak points as a method of indexing. The recommendations made for improvements, however, show that the system was seen as having real promise, and only funding cuts led to the end of the project.

Another criticism that could be made of PRECIS is that while it involves the automated permutation of terms, their selection is still a process that must be done by humans. Given the nature of archival materials and the amount of funding usually available for automation, fully computerized term selection may not be a reality in the foreseeable future. However, the prospect should be kept in mind when new systems come to be considered.

PRECIS is one of a number of automated systems of information retrieval, some expressly designed for archives and some not, which have come into use with the spread of automated information processing. Several of these systems have included capacities for the extraction and permutation of index terms, and through their use and the spread of information about them, new issues pertaining to archival indexing have arisen, notably those of online access and the standardization of practices among various repositories.

It is not the aim of this work to analyze the strengths and

weaknesses of those systems which possess an indexing capability. However, because of its recent prominence, mention should be made of the three successive versions of the SPINDEX (Selective Permutations Index) system, developed by Frank G. Burke and others. In addition to the importance of the system to the history of the technological development of archives, the observations that have been made regarding it point up the new issues that have arisen.

The original SPINDEX was used experimentally on 25 collections at the Manuscript Division of the U.S. Library of Congress in 1966. SPINDEX II, developed from 1967 to 1969 at the U.S. National Archives, was implemented in the early 1970s at a variety of public and academic institutions. In 1975, work began on a third version of SPINDEX, released in 1978.²⁷

The last two editions of the system, the ones which have been widely used, share the same essential concepts and features. Despite its name, SPINDEX is a system for the creation of various finding aids, not merely indexes, though the indexing feature is a prominent capability. It is divided into three modules, one for input of data, one to produce a finding aid, and one to perform a variety of indexing functions, such as alphabetizing and printing indexes in various formats outlined by the user.²⁸ It can be used for the control of holdings at any level from group to item. This is achieved by assigning each discrete unit to be controlled, no matter what level it is at, a unique 18-digit number. This number is divided into five subfields for group, series, container, folder and item. If, for example,

(State) (2 characters): (Arizona) 04 ...
 (City) (3 characters): (Phoenix) 04550 ...
 (institution within the city) (Phoenix Historical Society)
 (3 characters) 04550630/1

This is taken as level 1 of the archival description.

(collection or group) (John Butler papers) 045506300005/2
 (4 characters)

Level 2 of archival description.

(series in a collection) 0455063000054/3
 (1 character)
 box (1 character) 04550630000546/4
 folders in a box 045506300005462/5
 items in a folder 04550630000546256/6

level	characters	description
1	1-4	Collection/archive group identification. 4 numerical characters (0001-9999) allocated as a group identification by the archival institution concerned.
2	5-8	Series number. As above, but at the series (class) level.
3	9-12	Box (or volume) number.
4	13-15	Folder number. Chapters in volumes may appear here.
5	16-18	Item number. Pages in volumes may appear here.

Structure of a sample SPINDEX entry

control is only desired to the series level, the following three subfields for the series number would have to be made up of zeroes. Information on the holding is supplied through a descriptive entry divided into fields of flexible number and length. Subject entries, personal names, dates, and inventory titles can be selected from their designated fields by the indexing function. SPINDEX III allows for a limited amount of context for entries in the form of two-level index terms, where a subordinate qualifier is added to the main entry.²⁹

While it was thought by many in the 1970s that a form of SPINDEX would eventually become the standard system of information retrieval in North American archives, by the early 1980's it had become clear that this would not be the case; while SPINDEX II and to a lesser extent III are still being used in a number of institutions, it has not formed the basis of a widespread archival information network. As archivists became more familiar with the system through personal experience and published information, criticisms of it began to arise.

The major criticism has been that no form of SPINDEX can provide information online; that is, to allow a user with a computer to have exchanges in a conversational mode with a central data base. SPINDEX was originally conceived as a creator of finding aids, and with the lack of exact standards regarding their formats, online access was not included in any version of the system.³⁰ However, the demands of prospective users with computers who wish for quick input into a data base, and equally quick access to information in it, have increased and will

continue to do so.

In addition, despite the sensitivity of the designers of SPINDEX for the lack of standardization among finding aids, it was felt that the five hierarchical levels into which identifying numbers were divided were too rigid to be adaptable to the needs of repositories where arrangement practices differed significantly from these.³¹

Unlike most other automated retrieval systems for archives, SPINDEX was viewed as having the potential to be not only a system which could standardize finding aid practices, but also provide a central source for access points to materials in a nation- or continent-wide network of repositories, so that searches could be made from a distance as long as a computer could be plugged in.³² While this prospect has been discussed in archival literature for years, it is still uncertain whether it will ever become a reality. If the idea begins to show signs of becoming financially as well as technologically feasible, it is likely that future automated descriptive systems for archives will be created not merely as producers of finding aids but with the potential to centralize information on the holding of many different repositories. Should this happen, it appears that such a system will have to allow for online access to its data, given the number of similar operations that exist for the exchange of information in other fields.

This is an important distinction; earlier automated systems, while attempting with varying degrees of success to integrate indexing into an overall system of arrangement and description,

had no intended application outside the individual repository. In the future, however, a system may arise that incorporates a standardized indexing format for use in a wide variety of institutions. Such a system, however grandiose in its conception, would still have to conform to such basic principles of archival indexing as term extraction and the integration of the indexing function into the whole descriptive process in order to make it work efficiently. The addition of online searching facilities would not affect the structure of the finding aid system.

The criticism of SPINDEX's lack of applicability to various practices of arrangement shows another area where the future is uncertain. North American archivists have never been able to agree on a single arrangement system to be used, despite widespread agreement on such basic principles as provenance and the five levels. As automation and instant online communication become increasingly common, greater consensus on the finer points of arrangement may be reached. If not, however, future systems will have to allow more flexibility in the structuring of entries than SPINDEX does, while still allowing indexes from different repositories to be gathered in collective stores of information.

The study of techniques and systems for the automated extraction of terms raises several points.

As automation and ease of information manipulation increase, postcoordination may well become increasingly important in the creation of indexing systems, as it does not tie archivist or

user down to preset entries in a prepared index. Further, the success of indexes using context in the creation of entries indicates that index terms will become increasingly complex and sophisticated in their construction. In particular, demand for entries of this type is likely to increase among academics.

Academics and other users are also likely to insist on the availability of online access in archival retrieval systems, especially in larger institutions. This is therefore likely to be considered an essential element in any future system of this kind.

Above all, however, any system for archival retrieval which includes indexing as a component will have to be an integrated system covering all aspects of a total descriptive program.

CONCLUSION

An attempt to identify the problems and possible solutions associated with archival indexing shows that these issues are closely connected with the changes that have taken place in the archival world in the late 1970s and early 1980s. In particular, the great amount of material being accessioned and processed, and the new kinds of user whose inquiries often do not fit traditional patterns, relate directly to the need that has always existed for efficient access to materials through finding aids. Indexing is one way to provide such access, but it is necessary to view it in the perspective of the larger world of archives in order to see how it can help to do so as these trends continue to have their effect in coming years.

It is necessary to view indexing in the context of a complete finding aid system, and to remember especially that it is a function performed by one or more kinds of finding aid, rather than a separate finding aid of its own. To miss this point can lead to an unrealistic view of the index either as a panacea to replace other descriptive instruments, or as a luxury that must be subordinated to more pressing needs.

Indexing must be seen from the perspective of archival theory. Archives are arranged and, to an extent, described according to the basis of respect des fonds and original order, but it is an established and necessary practice to create finding

aids that cut across the lines set by these principles. To discount these types of finding aid, including those that index subjects and names, as unsuitable for archives because they do so is to cut oneself off from the retrieval power they offer.

Indexing must be seen from the perspective of user requests. As non-traditional users of material have come to repositories in increasing numbers, so have increased the number of requests not aligned to traditional areas of interest and methodologies. Specifically, they have focussed more on narrowly defined concepts and names rather than on subject areas covered by entire bodies of records. In addition, these newer users have shown less inclination to sift an entire fonds in pursuit of their goals than traditional historical researchers. From this point of view, indexing must be perceived not merely as a function of description, but as one which it appears will be suited to increasing numbers of requests in the near future.

Indexing must be seen from the viewpoint of the growth of automated information processing in archival repositories. Indexing is a part of virtually every system for the retrieval of archival information developed in the past ten years, but only a part. For such a system to succeed, it must create effective finding aids to perform the full range of functions. In addition, it appears that systems will have to allow some form of online access for remote users, both for entry into pooled information banks and for easy consultation of finding aids from a distance, in order to gain acceptance.

Archival indexing is not an area where problems and issues

can be solved in a vacuum. The question of whether an archival repository should include indexing in its descriptive program, and to what extent, involves one's view of how that system as a whole will fit together. What material should be indexed involves one's appraisal of the different fonds held, as well as analysis of the demands of users. If the indexing process is automated, it has to be viewed again as only one of a number of functions which must all be made to work in coordination.

This thesis has attempted to show where some areas of controversy lie for the indexing of technical archives, and to indicate where solutions may be found. Above all else, however, archivists must learn to see the issues that surround indexing as issues that touch on other areas of arrangement and description, and seek solutions that work in this larger context.

NOTES

Introduction

1. Michael Swift, "Management Techniques and Technical Resources in the Archives of the 1980's," Archivaria 20 (1985): 94.
2. Canadian Archives: Report to the Social Sciences and Humanities Research Council of Canada by the Consultative Group on Canadian Archives (Ottawa: SSHRCC, 1980), 32ff.
3. Mary Jo Pugh, "The Illusion of Omniscience: Subject Access and the Research Archivist," American Archivist 45 (1982): 39.

Chapter One

1. F. Gerald Ham, "Archival Strategies for the Post-Custodial Era," American Archivist 44 (1981): 208.
2. Michael Cook, Archives and the Computer, (London: Butterworths, 1980), 49-53; Ben Dewhitt, "Archival Uses of Computers in the United States and Canada," American Archivist 42 (1979): 156.
3. Cook, Archives and the Computer, 76-106 passim and especially 99-106.
4. David Bearman, "Automated Access to Archival Information: Assessing Systems," American Archivist 42 (1979): 187-88.
5. Gage Canadian Dictionary (Toronto: Gage, 1983), 592.
6. The Oxford English Dictionary, (Oxford: Clarendon Press, 1933), Volume Five, 203.
7. Webster's Third New International Dictionary (Springfield, Massachusetts: G. and C. Merriam, 1961), 1148.
8. Heartsill Young, ed., The ALA Glossary of Library and Information Science (Chicago: American Library Association, 1983), 116.
9. Peter Walne, ed.; Frank B. Evans, F.-J. Himly and Peter Walne, comps., Dictionary of Archival Terminology (Munich: K.G. Saur, 1984), 90-91.
10. Only three-quarters of a page of Frank B. Evans, Modern Archives and Manuscripts: A Select Bibliography (Chicago: Society of American Archivists, 1975) is devoted to writings relating to indexing (51).

11. The most prominent works that have done so are T.R. Schellenberg, The Management of Archives (New York and London: Columbia University Press, 1965) and David Gracy, Archives and Manuscripts: Arrangement and Description (Chicago: Society of American Archivists, 1977).
12. Frank B. Evans, Donald F. Harrison and Edwin A. Thompson, comps.; William L. Rofes, ed., "A Basic Glossary for Archivists, Manuscript Curators and Records Managers," American Archivist 37 (1974): 418.
13. S. Muller, J.A. Feith and R. Fruin, Manual for the Arrangement and Description of Archives, 2nd ed. translated by Arthur H. Leavitt (New York: H.W. Wilson, 1968), 52; Hilary Jenkinson, A Manual of Archive Administration (London: P. Lund, Humphries, 1937), 97-99; Schellenberg, Management, 41-45.
14. Schellenberg, Management, 41-45.
15. Evans et al., "A Basic Glossary," 427-28.
16. Ibid.
17. T.R. Schellenberg, Modern Archives: Principles and Techniques (Chicago: University of Chicago Press, 1956), 118.
18. However, Schellenberg also uses the term to indicate the creating entity only; Modern Archives, 174.
19. Michael Cook, Archives Administration: A Manual for Intermediate and Smaller Organizations and for Local Government (Folkestone, Kent, England: Wm. Dawson, 1977): 104-07.
20. Evans et al., "A Basic Glossary," 429.
21. Richard Berner, Archival Theory and Practice in the United States: A Historical Analysis (Seattle and London: University of Washington Press, 1983), 2-4.
22. Oliver W. Holmes, "Archival Arrangement -- Five Different Operations at Five Different Levels," American Archivist 27 (1964): 21-41.
23. Ibid., 24-38 and Berner, Archival Theory and Practice, 59-63.
24. Berner, Archival Theory and Practice, 1-2.
25. Ibid., 54-59.
26. Richard H. Lytle, Subject Retrieval in Archives: A Comparison of the Provenance and Content Indexing Methods (Ann Arbor, Michigan: University Microfilms International, 1982): 12.
27. Jenkinson, Manual, and Schellenberg, Modern Archives and

Management, passim.

28. Evans et al., "A Basic Glossary," 422.
29. Toward Descriptive Standards: Report and Recommendations of the Canadian Working Group on Archival Descriptive Standards (Ottawa: Bureau of Canadian Archivists, 1985), 7n.
30. Evans et al., "A Basic Glossary," 422.
31. Ibid.
32. Schellenberg, Management, 106, 115.
33. Ibid., 206-11.
34. Society of American Archivists, Inventories and Registers: A Handbook of Techniques and Examples (Chicago: Society of American Archivists, 1976), passim.
35. Gracy, Arrangement and Description, 30; Lydia Lucas, "Efficient Finding Aids: Developing a System for Controlling of Archives and Manuscripts," American Archivist 44 (1981): 25.
36. Schellenberg, Management, 273.
37. David Bearman and Richard H. Lytle, "The Power of Provenance-Based Retrieval," Archivaria 20 (1985); Richard C. Berner and Uli Haller, "Principles of Archival Inventory Construction," American Archivist 47 (1984): 134-55.
38. Cook, Archives Administration, 120.
39. Gracy, Arrangement and Description, 33.
40. Schellenberg, Management, 109.
41. Pugh, "The Illusion of Omniscience," 38-39.

Chapter Two

1. Canadian Archives, 37; Cook, Archives Administration, 144-45.
2. Pugh, "The Illusion of Omniscience," 39; Swift, "Management Techniques," 94.
3. Elsie T. Freeman, "In the Eye of the Beholder: Archives Administration from the User's Point of View," American Archivist 47 (1984): 113-14.
4. Pugh, "The Illusion of Omniscience," 39.

5. William L. Joyce, "Archivists and Research Use," American Archivist 47 (1984): 132.
6. Pugh, "The Illusion of Omniscience," 39.
7. Gracy, Arrangement and Description, 33.
8. Cook, Archives Administration, 123.
9. Gracy, Arrangement and Description, 33.
10. Hugh A. Taylor, The Arrangement and Description of Archival Materials (Munich: K.G. Saur, 1980), 56.
11. Lucas, "Efficient Finding Aids," 25.
12. Berner, Archival Theory and Practice, 67.
13. Richard C. Berner has taken this trend even further with a system where the inventories serve as the basis of all finding aids. While the system is not widely used, it shows how closely linked finding aids can be. See Berner and Haller, "Principles of Archival Inventory Construction." Michael Cook similarly encourages the construction of finding aids with index terms in mind (Archives Administration, 123).
14. For example, Gracy, Arrangement and Description, 33.

Chapter Three

1. Michael J. Ramsden, An Introduction to Index Language Construction (London: Clive Bingley, 1974), 2.
2. John Rothman, "Is Indexing Obsolete? Keyword Indexing and Free-Text Searching," in Hilda Feinberg, ed., Indexing Specialized Formats and Subjects (Metuchen, N.J. and London: The Scarecrow Press, 1983), 22.
3. Ramsden, Index Language Construction, 2.
4. Ibid., 1.
5. Rothman, "Is Indexing Obsolete?", 23.
6. Ramsden, Index Language Construction, 4.
7. Hilda Feinberg, "The Thesaurus in Indexing and Searching: A Review," in Indexing Specialized Formats, 273.
8. Ibid., 263-65.
9. Ramsden, Index Language Construction, 121-22.

10. Feinberg, "The Thesaurus in Indexing," 262.
11. David F. Mayhew, "Indexing the Biomedical Literature," in Indexing Specialized Formats, 103.
12. Feinberg, "The Thesaurus in Indexing," 262.
13. Max J. Evans et al., The Midwest Archives Guide Project: An Evaluation. A Report Submitted to the National Historical Publications and Records Commission upon the Completion of Grant Number 80-8. (Madison, Wisc.: 1982), 24.
14. Pugh, "The Illusion of Omniscience," 38.
15. William Michael Lay, The Double-KWIC Coordinate Indexing Technique: Theory, Design, and Implementation (Columbus, Ohio: Computer and Information Science Research Center, The Ohio State University, 1973), 7-8.
16. Ibid., 29-30.
17. Ibid., 28-32.
18. Ibid., 29-31.
19. Ibid., 31.
20. Ibid.
21. Phyllis A. Richmond, Introduction to PRECIS for North American Usage (Littleton, Colorado: Libraries Unlimited, 1981), 14.
22. Derek Austin, "The Development of PRECIS, and Introduction to its Syntax," in Hans H. Wellisch, ed., The PRECIS Index System: Principles, Applications, and Prospects (New York: H.W. Wilson Company, 1977), 5.
23. Ibid., 9-10, 15-17 (adapted).
24. Ibid., 10.
25. Ibid., 27.
26. Duncan Chalmers, "Computer Indexing in the Public Record Office," Journal of the Society of Archivists 6 (1981): 399-413.
27. Berner, Archival Theory and Practice, 87.
28. Ibid., 91.
29. Michael Cook, Archives and the Computer (London: Butterworths, 1980), 85-89; Nancy Sahli, "SPINDEX Users Network," in Automating the Archives, 94.

30. Berner, Archival Theory and Practice, 95.
31. Ibid.
32. Cook, Archives and the Computer, 85.

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