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William Stetson Merrill and Bricolage for Information Studies

Abstract:

Purpose: This paper examines William Stetson Merrill, the compiler of A Code for Classifiers and a Newberry Library employee (1889-1930) in an attempt to glean lessons for modern information studies from an early librarian's career.

Methodology/Approach: Merrill's career at the Newberry Library and three editions of the Code are examined using historical, bibliographic, and conceptual methods. Primary and secondary sources in archives and libraries are reviewed to provide insight into Merrill's life at the Newberry and his attempts to develop or modify tools to solve the knowledge organization problems he faced. The concept of bricolage, developed by Levi-Strauss to explain modalities of thinking, is applied to Merrill's career. Excerpts from his works and reminiscences are used to explain Merrill as a bricoleur and highlight the characteristics of bricolage.

Research Implications and Limitations: Findings show that Merrill worked collaboratively to collocate and integrate a variety of ideas from a diverse group of librarians such as Cutter, Pettee, Poole, Kelley, Rudolph, and Fellows. Bliss and Ranganathan were aware of the Code but the extent to which they were influenced by it remains to be explored. Although this is an anachronistic evaluation, Merrill serves as an example of the archetypal information scientist who improvises and integrates methods from bibliography, cataloging,

classification, and indexing to solve problems of information retrieval and design usable information products and services for human consumption.

Originality/Value of Paper: Bricolage offers great potential to information practitioners and researchers today as we continue to try and find user-centered solutions to the problems of digital information organization and services.

Introduction

In 1914 the Committee on Code for Classifiers of the American Library Association (ALA) issued 200 copies, in mimeograph form, of "*A Code for Classifiers: A Collection of Data Compiled for the Use of the Committee By William Stetson Merrill, Chairman*" (Merrill, 1914). The 1914 mimeographed document was the precursor to two editions of the Code that ALA published (Merrill, 1928; Merrill, 1939). Merrill discussed the idea for compiling a code for classifiers in 1911 at the ALA Conference in Pasadena (Merrill, 1911) and in 1912 when he presented two lectures at the University of Illinois. The lectures were also published in the *Library Journal* (Merrill, 1912). Subsequently, Merrill was appointed Chair of the special committee of the ALA that included now famed classificationists J.C.M. Hanson, University of Chicago Library and Charles Martel, Library of Congress, Washington, and other prominent librarians of the time such as Phineas L. Windsor, University of Illinois Library, Urbana, J. C. Bay, John Crerar Library (now the University of Chicago Library), Walter C. Biscoe, New York State Library, Albany, and W.P. Cutter, Library of the Engineering Societies, New York (Merrill, 1914, p. 2). The Committee was charged to collect data "relating to a proposed Code for Classifiers" (Merrill, 1912, p. 3). Copies of the mimeograph, the product of the committee's deliberations, which was essentially a list of the principles that Merrill was using at the Newberry Library, were circulated and "detailed criticism" solicited (Merrill, 1914, p. 3). The feedback from various libraries and librarians around the country, and from an ALA survey (Bostwick & Seymour, 1926) was

incorporated into a revised version of the mimeographed Code that ALA published, 14 years later, and with a different sub-title, “*Code for Classifiers: Principles Governing the Consistent Placing of Books in a System of Classification*” (Merrill, 1928). A second edition of the Code was also published eleven years later in 1939 and the most recent re-printing of the Code appears to have been 1969 (Merrill, 1969). A complete history of the development of the two editions of the Code and reactions to them including the story of a variant edition can be found in Coleman (2004). Figures 1-4 are excerpts from the various editions of the Code giving guidance on classifying a book/information resource about historic houses. They are explained in detail later.

Many general principles for library classifiers that are the basis of the Code and still taught today - aboutness, intent of the author, class of reader for whom the book is intended, and subject vs. topic distinctions – are explained in early published lectures (Merrill, 1912). Four schemes of classification are used in American libraries of the time (Dewey’s Decimal Classification (DDC), Library of Congress Classification (LCC), Cutter’s Expansive Classification (EC), and Brown’s Subject Classification (BCS)). Merrill provides examples of specific titles when discussing classifying problems such as complex topics, coordinate topics, unrelated topics, bias and influence relations among topics. Ernest Richardson and James Brown are summarized to provide a list of the *general characteristics* of books and the *subject characteristics* that may be used for classifying. Most important however, is Merrill’s insistence on the difference

between the *art of classifying* and the *science of classification*. He categorizes himself as a practical classifier, and paves the way for theoretical classificationists like Bliss, Mills, and Ranganathan. Thus while classification theorists Bliss (1933, p. 134, 144), Ranganathan (1998, p. 81), Mills (1968, p. 158-159), and Sayers (1926) were all aware of it, the extent of the Code's influence on their own thoughts and works needs to be explored further. In brief, Bliss makes the same distinction between classifying and classification that Merrill highlights in his Code but cites Merrill's Code in the context of the need for an Index to a classification scheme (p. 134) as well as in a subsequent discussion on Codes for Classifying (p. 144 ff). Mills opens his chapter on practical classification and indexing by using Merrill's definition: "the art of assigning books to their proper places in a system of classification." (p. 158). Ranganathan mentions the Code as proof of his argument that classification consistency cannot be achieved between libraries (p. 81).

In more recent times, Merrill's Code has been thought to represent US "national consensus" about classifying (Olson & Boll, p.62). The Code was also translated into Japanese (Merrill, 1928) and Spanish (Merrill, 1958) and used in libraries and library schools inside and outside the US (Fellows, 1914; Mann, 1928, 1929; Maltby, 1972, p. 136; Dutta, 1962, p. 241, 245, 251-252). However, today, in the US, both Merrill and his Code are not really well known. Few recent writers researching in this area or foundational texts even mention the Code or its creator. Paul Dunkin, who published *Cataloging U.S.A.* in 1969, the same year

the Code was last printed, described it as “a collection of rules for traditional American library classification with some discussion of each” and dismisses it as “out of date” (Dunkin, 1969, p. xx. Yet its creator focused on issues involved in the application of theoretical classification systems to actual library materials, issues that to this day continue to challenge original catalogers, metadata librarians, and information systems designers. Like the scholar-librarians he knew and worked with — Charles Ammi Cutter and William Frederick Poole — Merrill epitomized the professional who understood the art and the science of not only library administration and service but also information organization, its tools such as bibliography, cataloging, classification, and indexing, and was not unaware of the bibliographical control problems presented by new materials and the growth of knowledge. Consequently, Merrill’s career offers the best potential for current practitioners of library and information science if he is understood as an early bridge figure in what would come to be called the documentation and later the information science movement; a bricoleur who was able to use the tools at hand and draw on humanistic and scientific approaches to solving problems of knowledge organization. The rest of the paper highlights the key aspects of Merrill’s career and life together with excerpts from his writings, correspondence, and reminisces, followed by a discussion of bricolage and its relevance today.

Merrill, Poole and Cutter

William Stetson Merrill was born on the 16th of January in 1866 in Newton, Massachusetts. He “claimed descent from the Mayflower Pilgrims” (Merrill, 1954, p. 28). The young Merrill entered Harvard in 1884. While at Harvard, he worked as a student assistant librarian and William Lane, Assistant Librarian at Harvard College, was a family friend. Lane recommended Merrill for a position at the Newberry Library and accordingly, Merrill met with Poole, Librarian, in December 1888. He took up his new position at the Newberry in June 1889 and remained there for almost 41 years, until his retirement in 1930 (Merrill, 1954, 1955; Krummel, 1966; Krummel & Williamson, 1978). Thus, Merrill did not belong to the emerging cadre of those professionally trained in the new library school that Dewey had recently set up. Rather, he learned library management as an apprentice, interested in bibliography, indexing, and classifying. That is, he learned library work by doing it.

In the early days of the Newberry Library (1889 - 1930), Merrill worked alongside the elder statesman of American librarianship, indexing innovator and pioneer of the modern public library movement William Frederick Poole (Williamson, 1963, p. 6; 18), bibliographers Charles Evans and George Watson Cole (who became a life-long friend), cataloger Charles Nelson, and classificationists Charles Martel and J.C.M. Hanson (Merrill, 1954, 1955). Merrill was deeply influenced by Poole and Cutter (Librarian, Forbes Library, Northampton, Massachusetts). Until 1894, when Poole died, Merrill was in close contact with Poole; his desk was right outside Poole’s office. *Poole’s Index*, the

precursor to *Reader's Guide* and Poole's ideas of classification (as theory) vs. classifying (as application) informed his early training at Newberry (Merrill, 1954, p. 15). While he does not seem to have subscribed to Poole's criticism of the Dewey system of subject subordination as "procrustean" (p. 16) he did follow in other matters. He compiled the Archeological Institute of America's *Index to Publications, 1879-1889* (Merrill, 1891), and served as the ALA Editor of the *Index to Periodicals* (issued on cards) from 1913-1931 (Merrill, 1916). He was involved in the founding of the Bibliographical Society of Chicago, the precursor to the Bibliographical Society of America, and prepared and read a paper on "*General and National Bibliographies*" at one of its early meetings, in April 1900 (Merrill, 1900).

Merrill's correspondence with Cutter lasted from 1895 until Cutter's death in 1903 (Merrill & Cutter, 1895-1902). He was active in proposing modifications to the Expansive Classification scheme; for example, in 1895 Cutter wrote to him: "You want to have a mark for the classes now marked FA-FZ, called "Allied Studies", which shall have only one letter, F and distinguish the studies by figures. If this had been thought of in the beginning it would have been best to use FO for Allied Studies; but now FO is already taken for periods." When John Vance Cheney became Newberry Librarian in 1894 and brought along his assistant at San Francisco Public Library, Alexander J. Rudolph, who had invented the Rudolph Indexer (an alternate to the card catalog), Merrill was instrumental in getting the Rudolph and thereby, the Newberry Library and the

Indexer, to adopt Cutter's Expansive Classification scheme rather than the Dewey scheme (Merrill, 1955, p. 11). Rudolph did not like the Cutter notation of letters and wanted decimals and this led to the use of Cutter's classification with decimals at the Newberry. Merrill describes how this came about:

“The first letters of the Cutter notation designated main divisions of human knowledge: A-Generalities, B-Philosophy, C-Christianity, D-Church History; and so on, to Z – Bibliography. Subdivisions and topics were designated by further letters. Instead of doing so for subdivisions, why might not the Newberry use numbers: A 1, A 2, B 1, B 2 which would be treated as decimals, admitting indefinite enlargement: A 11 to A 19, A 111 to A 199. Initial 0 would be used for forms like periodicals, B 07 – philosophical periodicals. A decimal point would separate the class number from the author number, also a decimal.” (p. 11-12)

This beginning is somewhat similar to how the Merrill Book Numbers came about too – as a result of a practical need for alphabetizing books (Merrill, 1912). Library schools such as the Syracuse University Library School (Sibley, 1909) and Illinois Library School (Sharp, 1896) show both requests and acknowledgement of receipt of these numbers. In his memoirs, Merrill describes how these numbers were developed:

“Cutter-Sanborn numbers would be used in classes, like Biography or works of individual authors in Literature, where elaboration of the author number was called for. For Bibliography I devised the employment of lower case letters, corresponding with the capitals. Thus, if F 8962 is for

history of Chicago, f 8962 is for a list of books on it. The decimal authors numbers were to be taken from a table that I drew up: AA to ZZ – 01 to 99. These so-called Merrill Numbers have since been used for alphabetizing by decimal numbers in other libraries. (Merrill, 1955, p. 12).

Merrill's Milieu

Newberry Library: Saenger writing in *Humanities' Mirror* (Achilles, 1987, p. 44) likens the collections of the Newberry to the great collections in the European repositories such as the British Museum, Bibliotheque Nationale, and the Vatican Library. But in those days when Merrill started at the Newberry in 1889 there was no formal organizational structure, such as we know today (Williamson, 1963, p.165; Merrill, 1954, p.4). Indeed the Newberry itself had just been started 1 July 1887 and it was only in 1893 that it was moved into the permanent building that was specially designed and built for it and in which it has remained to this day. Therefore, it was not until 1891 that Merrill was given the title of Superintendent of the Accessions Department (Merrill, 1954, p. 6). He remained in this position until 1895 when he became Head of the Classification Department. From 1917 until 1928 he was Head of the Public Services Department and from 1928 until his retirement in 1931 he was the Head of the Technical Procedures Department (Krummel, 1966). Merrill's title changes usually coincided with the reorganization of the Library that followed the hiring of a new Newberry Librarian. Since opening in 1887, there have only been seven

Newberry librarians including the present incumbent. Today this prestigious position is usually conferred to a distinguished Humanities scholar, however, the early Newberry librarians were both scholars, experienced in library management, and leaders of the American library movement. The seven Newberry Librarians, their terms of service and their former places of work, if a library, include: Poole, William Frederick (August 1887 – March 1894) formerly Chicago Public Library; Cheney, John Vance, (Dec. 1894 – 1909) formerly San Francisco Public Library; Carlton, William. Newnham Chattin (July 1909 – 1920) formerly Trinity College, Hartford, Connecticut; Utley, George Burwell (April 1920 – 1942) formerly American Library Association – Library War Service Committee, Pargellis, Stanley M (May 1942 – 1962), Pargellis, Stanley M (May 1942 – 1962), Towner, Lawrence (September 1962 – 1986), Cullen, Charles, T. (September 1986-present).

With every new librarian, the Newberry library acquisitions and services grew in diversity and intellectual richness (Achilles, 1987). The Newberry received one of its most important gift collections in 1895: the Ayer Collection on early American history was put under the control of the Newberry, and in 1911 it became the premier collection on Native Americans when Ayer gifted the materials dealing with American Indians and their interrelationships with whites. The Ayer collection included maps, drawings, photographs, and artifacts. The Newberry also developed a diversity of knowledge materials in documents and formats besides just books. In 1898, they were gifted with Oriental ceramic art; in

1907 they purchased Tibetan literature printed in Tibet and Tibetan and Mongol books printed in Peking. (Achilles, 1987, p. 67-69).

Merrill's title changes also meant that he saw a great deal of the vision for the Newberry Library become further refined as library technical services procedures became more and more specialized. The Newberry Library was envisioned as a free public research library; the library was open to the public, but most of the materials were kept in closed stacks, could not be checked out, and had to be used in the reading rooms. Thus, for the librarians working at the Newberry, finding the books on the shelves and delivering them to the readers evolved as a separate task from finding the subject matter of a book or document. Readers had to consult the catalogs and identify the call numbers; pages would then bring the book out to the reader. Since readers could not browse the shelves, the classified catalog (with separate author and subject catalogs) became a very important tool in helping identify subject relationships and locating items precisely on the shelf.

However, in the early days the only catalog in the Newberry Library was a short title-author catalog. Entries for the short-title author catalog were handwritten on narrow slips and on slightly smaller sizes than had been used for the regular catalog which had been abandoned because of the influx of books being ordered and the need to avoid duplicate ordering. Merrill credits the practice of using short-titles in public libraries as having begun with Poole when

he changed the method of making a catalog from entries written in books to entries written on cards (Merrill, 1954, p. 19). The short-title-author catalog is in keeping with the British tradition and with bibliographical traditions too as Merrill points out – Brunet's *Manuel* and the works of professional bibliographers could be consulted for full bibliographical descriptions. An Accessions Catalog was also kept in the form of a large sheep-bound volume and locked in a safe every night (p.3). Merrill's first job was to keep the Accessions book and to many of us who have worked in library technical services departments in the twentieth century, whether large or small, the fundamental processes he followed will be very familiar; Merrill kept the Accessions register in order by checking the contents of the packing slips/bills with the books on the shelves where the janitor Carl Allstrom had unpacked them before entering the details of the materials into the register using a library hand.

Working With Women: Merrill seems to have followed the lead of Poole in the matter of working with women. Poole hired Mrs. A.B. Harnden, one of the first women to work in an American library (Krummel & Williamson, 1978, p. 28). Letters written to Merrill indicate his sensitivity to women (Robinson, 1892; Clarke, 1909; Kimball, 1912). More importantly, his acknowledgements in the written works (Merrill, 1928, p. vii-viii, 1939, p. vii-xi) indicate his intellectually stimulating, collaborative relationships and his knack for working with them. For example, Edith E. Clarke, G. E. Wire, Charles H. Brown, Renee B. Styern, and Jessie L. Shark are acknowledged in Merrill (1905).

Collaboration: Merrill's collaborative approach is best teased out by analyzing some of the attributions he made in the Code. Although many types of attribution are evident in the different editions of the Code and most of them are corroborated by the correspondence in the Newberry and ALA archives, four women who actively contributed to the development of the principles and rules in the Code are notable: Ida P. Farrar, City Library Association of Springfield, Massachusetts, Jennie Dorcas Fellows, Head Classifier, State Library, Albany, New York, and later Editor of the Dewey Decimal Classification, Julia Pettee, Union Theological Seminary, and Grace O. Kelley, Classifier, John Crerar Library.

The tone and style of the correspondence between Merrill and the women when he writes them in 1926, asking for revisions and criticism of the Code prior to its first edition publication, conveys a sense of camaraderie. Upon receipt of clarifications regarding the classifying of science and technology subject materials, Merrill wrote to Kelley: "If you will pardon the slang, I will just say: I am tickled pink! You have given me what I have been waiting years to get." A letter, almost a year later, from Kelley when she is sending him more principles of use at John Crerar, cautions him that John Crerar Library used a "Classed Catalogue in which a book may have as many entries as is deemed necessary" and is doubtful whether practices of multiple class numbers should be followed "where but one number is permitted." "Doesn't this work take stacks of time?"

she asks in her closing paragraph and goes on to report: “I have been working on it at home and have already spent many hours and must now call a halt even though there remains much to be said.” (Kelley, 1914, 1928, 1939). Specific types of attribution naming the exact roles that Merrill acknowledged for these women in the foreword to the first edition (Merrill, 1928, p. vii-viii) include: Annotater, Julia Pettee, Practice, Dorkas Fellows, Critic, Ida F. Farrar and Science & Technology Rulings, Grace O. Kelley. He also credited Julia Pettee for suggesting and demonstrating the systematic/classed order along with an alphabetical index for the organization of the classifying principles in the Code rather than the straightforward alphabetical arrangement he had first used.

Figure 1. Classifying rule # 4 (unnumbered) for Antiquities.

Source: Merrill, 1914 (p. 8)

Antiquities.

Distinguish between antiquities as a subject treating of past manners and customs; and travel as a description of present manners and customs. The class Customs may be made to include both.

E.g.

Figure 2. Classifying rule # 92 (unnumbered) for Historic houses.

Source: Merrill, 1914 (p. 38)

Historic houses. A work on historic houses or on places associated with famous persons:

Class under description of the locality unless the work is decidedly a collection of biographical sketches.

E.g. Famous houses and literary shrines of London. By A. St. John Adcock (London, 1912) Class in description of London.

See also Buildings, Single.

Figure 3: Classifying rule # 257 for Historic houses.

Source: Merrill, 1928 (p. 101)

ANTIQUITIES

Dewey No. 913

257 Historic houses

(a) A work on the history of famous houses or on places associated with famous persons: Class in local history of the place. E.g. Famous houses and literary shrines of London. By A. St. John Adcock (London, 1912). Class in history (or antiquities) of London.

(b) A work on literary shrines: Class in literary biography. E.g. Literary haunts of authors (coffee-houses and inns).

(c) A work designed to show the architecture of famous houses: Class in domestic architecture. E.g. Castles or moated houses of England.

See also Buildings, Individual 182.

The varying practice of the libraries represented in the *A.L.A. Survey of libraries* (Chicago, 1927), in regard to the classification of "history of buildings," is summarized in that work (IV: 23-25).

Figure 4. Classifying rule # 319 for Historic houses.

Source: Merrill, 1939 (p. 148)

ANTIQUITIES	
317	Archeology vs. History
	...
318	Inscriptions
	...
257	Historic houses
	(a) A work on the history of famous houses or on places associated with famous persons: Class in local history of the place. E.g. Famous houses and literary shrines of London. By A. St. John Adcock (London, 1912). Class in history (or antiquities) of London.
	L.C. has topic <i>individual buildings</i> , in history of the metropolis, e.g. Boston, London, Paris, and classes the original Colonial churches in local history of the American Colonies.
	(b) A work on literary shrines: Class in literary biography. E.g. Literary haunts of authors (coffee-houses and inns). See Literary shrines: 314.
	(c) A work designed to show the architecture of famous houses: Class in domestic architecture. E.g. Castles or moated houses of England.
	See also Buildings, Individual 232.

Figure 5. Categories of “And” in section on The Two-Topic Book.

Source: Merrill, 1914 (p. 98)

“And.” Works treating of two or more topics...

“And”. Action concerning persons. A work on the acts, or containing the proceedings of a tribunal against a special class of offenders, e.g. merchants...

“And.” Action concerning policy. A work treating of the action of a state or organized body upon a proposed constitution or political course...

“And.” Constitutions. A work on the constitution of a state of the Union accompanied by the constitution of the United States.

“And.” Derivation or source. Derivation of one thing from another.

“And.” Inclusive subjects. When the two topics are closely related to, or synonymous with an inclusive subject.

“And.” Influence. See “Influence.”

“And.” Persons and places (or events). See Persons vs. Events, etc.

“And.” Sport and travel. Works on “sport and travel” in special countries

“And.” State and country. The history of a state of the Union...

“And.” Two opinions. A work contrasting two views.

“And.” Two periods. A work covering two periods of an art or science.

Figure 6: Transformation of the "And" categories into Subject Relations.

Source: Merrill, 1928 (p. 6)

15 Relation

When a book treats of more than one subject, or of the relation existing between two or among several subjects: Determine what this relation is and class according to the following rules.

(a) If the two subjects are merely coordinated, e.g. electricity and magnetism treated in the same volume: Class always under the first subject, unless the second decidedly preponderates.

(b) If the subjects are practically subdivisions of some larger inclusive subject: Class under the inclusive subject.

The varying practice of the libraries represented in the A. L. A. *Survey of libraries* (Chicago, 1927) in classing "books treating more than one subject," is summarized in that work (iv: 41-43).

(c) If the work treats of two factors, one of which is represented as acting upon or influencing the other: Class under the subject *influenced or acted upon*. E.g. (1) The influence of the Icelandic sagas upon English literature. Class under English literature. (2) Influence of the climate of California upon its literature. Class under literature.

This is a very important rule and one that has been strangely overlooked or disregarded by writers on classification. An experience of many years in applying it convinces the author of its entire practicability and usefulness. The A.L.A. *Survey of libraries* (Chicago, 1927) summarizes the practice of the libraries represented in the survey in regard to this ruling under the captions: "Books treating of one literature's influence upon another," and "Books treating of one writer's influence on another" (iv. 38-40).

(d) If one factor is represented as the source, cause or formative agency of the other: Class under the factor so derived or resulting. E.g. (1) Myth as a source of religion. Class under the origin of religion. (2) Economic conditions as a cause of war. Class under war.

Relation is often expressed on title-pages by connecting two topics by the conjunction "and" without further specifying the relationship. E.g. Art and ritual, which may mean the way in which art has grown out of ritual; Norse literature and English literature, which may mean the Norse sources of English literature; Shaftesbury and Wieland, indebtedness of Wieland to Shaftesbury; Cardinal Aleman and the Great Schism, share that Cardinal Aleman had in the movement. The classifier should first determine the meaning of "and" before attempting to classify and should never accept the first word given on the title-page as determining the subject of the book

(e) Literary influence of authors. See that heading under Literature 224, 233.

Figure 7: Illustrating sample practice statements by Kelley (John Crerar Library) and Fellows (DDC Editor)

Source: Source: Merrill, 1939 (p. 94)

208 Tools, Hand

Class hand tools with the art in which they are used, preferably in a suitable subdivision; tools used in many different arts or crafts, e.g. knives, saws, may be classed together in an alphabetical arrangement.

"The D.C. now has no special place for hand tools. Probably it would be best to class them in an alphabetical arrangement, e.g. adzes, files, saws, etc., either in a place following machine tools or under the section devoted to mechanic trades. It is best to keep hand tools together."—(Kelley).

"The form division *instruments, apparatus* (078) may be used to separate books on tools from books on the general subject."—(D.C. editors).

Figure 8: Illustrating a sample annotation by Pettee

Source: Merrill, 1928 (p. 20)

**CLASSIFICATION UNDER SPECIAL SUBJECTS
BIBLIOGRAPHY Dewey No. 010**

44 Definition and scope of the class

"Bibliography in its broadest sense treats of all that appertains to the outward form of books, their materials, printing, publishing and care. Called by various names, this material is grouped together in all classifications. The term bibliography, however, is generally restricted to lists of books of various kinds, either covering many topics, publishers' catalogs, dealers' lists, library catalogs; or restricted in scope."—(Pettee). Bibliographies covering but one field or topic of knowledge are in some systems grouped together by some scheme or arrangement; in others provision is made under each subject for its bibliography."

Material in this class is concerned strictly with the history of books as books,—their editions, dates, and form; it is not concerned with discussion upon the ideas of the author. It is difficult sometimes to draw the line between the history of a book and the history of the subject matter of the book. But theoretically the latter has no place in bibliography; it belongs in history of literature, art, science or technology."—(Pettee).

Figures 1 and 2 are from the 1914 mimeographed edition. One difference between these and Figure 3 is that Merrill has added an example and a cross-reference following up on Ida Farrar's suggestion to add more cross-references. Figure 3 also shows how Merrill, under the influence of Julia Pettee, who suggested classed order and an index for the principles, re-did the rule using the

DDC broad classes to order them. Unfortunately, the use of DDC was criticized as being misleading. Therefore, in the 1939 edition, Merrill dropped the DDC notations as can be seen in Figure 4 although other additions were made. Figures 5 and 6 are excerpts of the classifying rules for classifying multiple subjects. These clearly show the progression from simple basic rules to expression of subject relations and principles for classifying relations. In using this order Merrill was greatly influenced by Julia Pettee but the comments and examples about the rulings are often his own. In some cases, as shown in Figures 7 and 8, Merrill used the annotations contributed by Kelley, Pettee, and Fellows.

Scholarship: Merrill's writings in journals show his interest in a wide variety of subjects that ranged beyond bibliography, cataloging, and classification to history, archaeology, and literature. Taking his mentor Poole's advice to heart to "Read with an intent of writing about what you read" (Merrill, 1954, p. 3), and in addition to his job at the Newberry, he appears to have been steadily researching and writing besides documenting procedures, policies and statistics on a fairly routine basis. His interest in practical library matters resulted in brief articles on topics such as the care of pamphlets and the use of musical terms in cataloging which jostled elbows with his scholarly work about historians and explorers of the North American continent. His academic works include historical topics such as the pre-columbian settlement, southwest settlement, Catholic explorers, and the Vikings. Some of these works also led him to the editorship, reviewing, and

indexing of several Catholic journals, work that served as a precursor to the development of the *Catholic Periodicals Literature Index*.

Technical services and library administration: Classification at the Newberry, a fast growing and unique library, was a challenge (Stam, 1979). Under Poole, the classifiers were given a broad scheme of classification and left to develop the subdivisions and topical categories within, including making provision for expansions, as they saw fit. The main features of the Poole classification were 1) to bring books together treating of subjects in the same field (in other words, it was not the classification of human knowledge), 2) to make it easy to find the books, 3) to use a mnemonic form of notation to guide the searcher to a class – for example, B for Biography, F for Fine Arts, H for History, and L for Literature, 4) to use consecutive integral numbers for individual books and series, with gaps left for additions. The Dewey Decimal Classification (DDC) was not officially adopted at the Newberry but classifiers availed themselves of the DDC when they could. For example, Cole, who was familiar with the DDC and was classifying History took many of the geographical details from it besides following the Dewey sequence of headings for this class (Merrill, 1954, p. 16). Classifiers in Literature, Economics, Arts, and Sciences soon followed suit (p. 17). Naturally, the judgments of the classifiers were somewhat unequal to the demands for expansion in the various classes and by the time Charles Evans was hired as Head of Classification in 1898, the problem of intercalating additions of new books in a specific sequence when the consecutive integral numbers had already been

assigned to books on the shelves had to be faced. We've already read Evans proposed solution of adding a zero to each old number, which enabled nine new numbers between each old number (Merrill, 1954, p. 24). But more challenges were ahead. In 1894 John Vance Cheney had become the Newberry Librarian; he was accompanied by Alexander H. Rudolph who proposed to introduce the Rudolph Indexer to the Newberry Library making it a model of library technique (p. 25).

The Cheney administration was the first period of reform for the Newberry technical units (Merrill, 1955, p. 8). The Rudolph Indexer, invented when Rudolph was at the San Francisco Library, a mechanical substitute for the card catalog was to be presented as the public catalog for the Newberry, the whole library was to be reclassified using the Dewey Decimal Classification, and a new inventory made of the entire contents of the library. Concerns about balancing cataloging and classifying costs with productivity quickly emerged and in 1895 Merrill submitted to the Librarian an estimate for the cost of re-classifying the Library. Table 1 shows a snapshot of the plan and costs.

Table 1: Plan and costs for Reclassification of the Newberry.

Number to be re-classed: 125, 000 volumes (excluding the Medical collection)	
Classifying Method: 1 person assigns the number to the volume; a second person makes the entry on the shelf-list.	
Time Estimate: 1 person can classify 100 volumes per day	
Cost Estimate:	
2 Classifiers for 4-1/2 years at \$1,200 per year	\$ 10,800
Boy (to carry and label books)	\$ 1,080
Clerical assistant to change number on 100,000 cards	\$ 1,350
Cost of labels, seals, etc.	\$ 70
Total cost of classification	\$ 13,300

Work diaries, time ledgers, and reports that Merrill submitted such as those for Accessions and Classification from 1895 to 1918, to the Newberry Librarian, show how Merrill's time was divided between new accessions and classifying for the reclassification project. Table 2 shows the summary statistics of his classifying work productivity for a 6-month period; i.e., from Mar. 27th – Oct. 1, 1895, Merrill classified a total of 7941 volumes, which is 441 volumes per week or 84 per day.

Table 2: Merrill's Classifying Productivity

Classifier Name	Period	# of volumes classified	# of volumes per week	# of volumes per day
WSM	Mar. 27 th -Oct. 1, 1895	7941	441	84

Table 3 reveals finer-grained detail about the productivity of Merrill, Martel, and Monrad for 1895 and 1896.

Table 3: Classification (Productivity) Summaries, 1895, 1896

Year	Who	What	Number	Total
1895	Merrill			
		Reclass	11262	
		New accessions (new)	460	
	Martel			
		Reclass	1324	
		New accessions (old)	3438	
		Transfers	929	
				17413
1896	Merrill			
		Reclass	14223	
		New accessions (new)		
	Martel			
		Reclass	3064	
		New accessions	6965	
		Transfers	1642	
	Monrad			
		Reclass	534	
		New accessions	433	
				26861

Knowledge Organization: The limitations of discipline-oriented knowledge organization schemes for arranging books on library shelves were obvious early on to Merrill. In response he tried to develop classifying principles generated in what today would be called as using a participant interaction – bottom-up approach. He identified at least two different types of problems that required the need for a code of classifiers: general problems of classifiers (classification problems of “law” or theory) and practical problems (Merrill, 1911). The general problems included: 1) the need for a classification system to “reflect the literature which it arranges, not to break it up into arbitrary arrangements” and be capable of adapting to both present and past literature

(Merrill, 1911, p. 231); 2) the classification should be “expansive or susceptible of addition to accommodate new topics, new points of view, new sciences, and new affiliations of old sciences” (p. 231-232); 3) the notation of classification “shall not hamper it’s due growth but shall serve as a means of conserving its orderly arrangement” (p. 232). The practical problems included: “(1) the determination of the primary content of a book; (2) choice between two or more topics in a book, given equal or nearly equal weight; (3) conflict of two classes facing, like Janus, two ways; (4) the treatment of individuals; (5) form versus content; (6) indexing. Many of the theoretical problems, such as expansion of classes, continue to be unsolved in modern day classification schemes (Henderson, 1998, p. 225). Others such as determination of competing topics close versus broad classification (although the Code presupposes close), continue to be governed by principles for classifying, subject headings assignment, and indexing.

Merrill grappled first-hand with the failure of Poole’s departmental plan of library organization and classification. The Poole notation continued to be a problem; another one was the lack of precision and detail within the scheme. This meant that classifiers at Newberry were classificationists too creating and elaborating the subdivisions and topics and notations within classes. The proposal to reclassify the Library in 1895 was a welcome and timely opportunity to experiment with new tools and solutions. Merrill and Rudolph acknowledged the superiority of decimal numbers and Merrill favorably impressed by the detailed

working out of topics in Cutter's Expansive Classification system proposed modifying the Cutter scheme with the Newberry one for the Rudolph Indexer (Merrill, 1955, p. 11) and developed the modification in full detail (p.12). To this day remnants of the Newberry-Cutter scheme can be seen in the Newberry Library. The main features of the Newberry-Cutter modified scheme are:

- 1) The first letters of the Cutter notation designate the main divisions of human knowledge – A-Generalities, B-Philosophy, C-Christianity, so on until Z-Bibliography.
- 2) The Newberry modification uses numbers A 1, A 2, etc. which would be treated as decimals for the subdivisions and topics. This admits indefinite enlargement: A 11 to A19, A 111-199.
- 3) Initial 0 (zero) would be used for forms like periodicals, e.g. B 07 – philosophical periodicals.
- 4) A decimal point would separate the class number from the author number, also a decimal.
- 5) Cutter-Sanborn numbers were to be used for Biography and Literature classes where individual author marks were needed.
- 6) The decimal author marks were from a table of AA to ZZ – 01 to 99 that Merrill had already shared with other libraries (the so-called Merrill Book Numbers).
- 7) For Bibliography, Merrill proposed lower case numbers, corresponding with the capitals. E.g. if F 8962 is for history of Chicago, then f8962 is for a list of books on it.

- 8) Call numbers of rare books in the cabinets were prefixed with the word *Case*, indicating where they would be shelved.

These simple solutions, to a society facing the problems of digital information proliferation, may sound like the primitive who uses a brick as a hammer; but, Merrill's improvisations and modifications are representative of a way of thinking known as bricolage which can be a valuable tool for the twenty-first century information professional.

Bricoleurs and Bricolage

Apprenticeship, adaptability, and collaboration are characteristics of the bricoleur that Merrill's career thus far has demonstrated. However, it is also in the approach that he took to solve the knowledge organization problems of the day that we can best discuss Merrill as a bricoleur who has much to offer information studies today. As a bricoleur, Merrill was a thinker tinkerer; he focused on the immediate objects and materials at hand to fashion solutions for problems faced. Levi-Strauss explains that when he presented a bricoleur in a dichotomous category and compared it with the engineer he was trying to explain that "there is no gap between the way so-called primitive peoples think and the way we do" (Eribon, 1991, p. 110). Very simply, in the binary view primitive minds are made up of bricoleurs and domesticated minds are made up of engineers. The differences are often explained in the types of data and materials each group uses; in bricolage the engagement is with the materials at hand

(improvisational assemblage to solve an immediate problem) and reflects humanistic values while the scientific or engineering mind engages with the abstract, the representations of the material and proceeds in a more formal, often deterministic way. In creating tools such as the decimal book numbers in an attempt to solve the shelf organization problems the Newberry collections faced, Merrill exhibited his tendency to bricolage; Cutter tables were available, but they didn't solve all the problems and hence the creation of Merrill book numbers. Interestingly, Maltby and Sayers in discussing Merrill's Book Numbers, which were essentially author marks, refer to Merrill as the "great American classifier" but also correctly consign author marks to a comparatively unimportant part of classification theory (Maltby, 1975, p. 90). Yet, to both librarians and end-users locating the book on the shelf is a very important and much-needed service while the general purpose of classification is to place books where they will be permanently useful (Merrill, 1928, p. 2).

Similarly, Merrill used the *intent of the author* as the primary principle that should guide classifying; he was simply borrowing a key bibliographical method and principle to solve a classifying problem (how should the classifier determine what the matter in the book was about?). In describing the indexing problems in classifying, he was making connections between the work he did as ALA's Editor for the Periodical cards program whereby a set of cooperating libraries agreed to index articles for a selected set of journals on cards, ALA/Wilson printed the cards and these were purchased and used in libraries in card catalogs to provide access to journal articles (Merrill, 1916).

A bricoleur just does not borrow tools; he also moves between scientific and ‘other’ modes of thinking. Besides a proclivity for statistical reports of work productivity, and the use of logic and collaboration to integrate critical other views into the Code, Merrill’s capacity for such shifts is illustrated by his role in the debunking of the Librarian’s Hoax (Wiegand, 1979). He reasoned scientifically and proved to be one of the earliest librarians to penetrate the truth behind the Librarian’s Hoax perpetuated by John Cotton Dana and Edmund Pearson (Merrill, 1910). Many of his administrative reports are filled with quantitative evidence in support of his arguments, productivity, or concern for efficiency and systematization (Merrill, 1895-1918). As has been noted earlier, Merrill was also key in the adaptation of Rudolph Indexer, a mechanical alternative to the card catalog at the Newberry. Here again, Merrill did not devise a new scheme, he skillfully modified Cutter’s Expansive Classification for the Indexer by integrating decimals with the expanded alphabetical classes. Levi-Strauss, the originator of the bricoleur concept, acknowledges that the bricoleur/engineer division is false as the same person can exhibit both modalities of thinking (Eribon, 1991, p. 110). Thus, what is important for modern-day information scientists and librarians is the integrative thinking and tinkering with materials that the bricoleur engages upon. Merrill’s attention to detail, his skill in solving problems using the materials at hand, his desire to integrate the fast diverging arts of indexing, classifying, and bibliography, tolerance for diversity, and his ability to switch between systematic and holistic ways of thinking are the

important elements that mark him as a bricoleur and that we need to investigate further, if we are to understand the exact potential of bricolage for knowledge organization and other problems in library and information science.

“In the long perspective of American library experience, it is to be questioned whether the turn to close and exact rules and procedures did not bring, along with the apparent benefits, a rigidity and an elaborateness that cost more than the advantages were worth.” So wrote Williamson in his biography of William Frederick Poole, founding librarian of the Newberry library who heralded the public library movement in America, and was the epitome of the scholar-librarian. (Williamson, p. 183) Williamson was referring to Poole’s “tolerance for diversity” in the technical procedures that individual libraries must follow in order to serve their readers. In this, Poole was quite unlike Dewey; he was not convinced of the need for detailed enumerative classification schemes like the Decimal Classification that Dewey was promoting. Nor was he convinced that all libraries must follow the same, standard practices. “Methods which are adopted for one library are not necessarily adapted for another where conditions are different” he said in his 1886 address as President of the ALA. “In 1889, Dewey was defeated by the combined power of Cutter, Fletcher, Winsor, and Poole in a final showdown on the question of whether or not the ALA should officially endorse specific systems, procedures, and rules. Dewey was intent upon forcing recognition of “the one best way” (his way) of performing any library job.” (Garrison, 2003, p. 144). To Dewey’s argument that the ALA constitution

charged members “to reach conclusions” Winsor countered that this did not mean the association could endorse “any principles of action or usage.” The use of the decimal classification and standardization in library work became inevitable with Dewey’s election as president in 1890. But, the questions remain: Was Poole right? Are our library cataloging, classification, and indexing systems rigid and elaborate? What have libraries lost in their adherence to rigid, elaborate systems of organization? If Merrill’s Code had been kept up, could it be used as the basis for a switching language today? Did it serve as the basis for the development of the Library of Congress Subject Cataloging Manual? These and other questions such as the influence of the Code on classification theorists remain to be investigated.

Conclusion

The focus on library standardization, the rush to automation, and the increasing tendency to centralization, appear to have inadvertently fostered a neglect of intellectual diversity. Unfortunately, the integrative and bricolage sorts of solutions that humanists who were documentalists like Otlet (Rayward, 1997) and librarian bibliographers and classifiers like Merrill tried to follow, have also been ignored. In the process, we lost valuable opportunities to provide flexible, humanistic, customized and universal solutions to the problems of knowledge organization and retrieval. What Merrill’s career suggests is that the current understanding of the multiple traditions and heritages arising from documentation, bibliography, indexing, cataloging, and classification as separate trajectories, is

misguided; a view that has been supported by recent theorists and researchers in library and information science (Budd, 1995; Hjørland, 2004), as well as in information systems (Ciborra, 1999; Avgerou et al, 2004). Merrill's attempts to integrate these traditions should be studied and emulated as a model for information studies as he represents a time--which may not have passed--when an information scientist is a bricoleur who draws on librarian, documentalist, bibliographer, classifier, classificationist, indexer, technology, and systems traditions to solve information problems in ways that humanize technology and augment us.

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