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## FRBR and the History of Cataloging

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Functional Requirements for Bibliographic Records, FRBR, is an end point of almost 175 years of thinking about what catalogs are for and how they should work—*an* end point, not *the* end point. There is no *the* end point to how libraries should make their collections available to people. That changes all the time, and lately it's been changing quickly. That's one of the reasons we have FRBR.

In this chapter I explain where FRBR comes from. I know that many of you have a horror of cataloging, and the thought of it brings back bad memories of obscure rules about spaces, colons, and dashes. Even strong-willed catalogers may blanch at the thought of a history of cataloging, but it's not as bad as you think. No special knowledge of cataloging is required. I won't go into details about main entries or who disagreed with whom about how works of corporate authorship should be handled. No actual cataloging rules are quoted and no MARC fields are shown.

We'll follow these four ideas through modern Anglo-American library history and see how they lead up to FRBR: the use of axioms to explain the purpose of catalogs, the importance of user needs, the idea of the “work,” and standardization and internationalization.

The last three ideas are fairly simple. Library users are important people and wherever they are, whatever they want, serving them is the basis of what we do. “Work” has quotes around it to make it clear that under discussion is the abstract notion of a work, not the FRBR entity. (The idea goes beyond just FRBR—different people have different definitions of what a “work” is, but they're all generally the same.) As a librarian, you know all about standards and the international sharing of information.

By axioms explaining the purpose of catalogs, I mean a core set of simple, fundamental principles that form the basis for complete cataloging codes such as *Anglo-American Cataloguing Rules*. In mathematics, Euclid set out five simple axioms and from them, by proof and deduction, built up all of geometry (a simplification, but true enough). Cataloging isn't like mathematics, and it isn't a science, but it has lots of complicated rules. They weren't invented willy-nilly.

There's a reason for each of them, and the reasons, if you follow them back, come from some simple ideas. *Principles* and *rules* are common terms in cataloging so I've borrowed *axiom* from mathematics and logic.<sup>1</sup> When we get to the first set of axioms, I'll show what I mean about how they can be used to build up a cataloging code.

These four ideas—axioms, user needs, “work,” standardization—run through our history in varying strengths, usually growing, sometimes fading. The idea of the “work” is a more modern one, and standardization and internationalization are easier and more necessary now than a century ago. The axiomatic approach goes back to the end of the nineteenth century. The importance of user needs has the longest history. All these ideas move through library work and thought, joining and rejoining, showing up here and there like threads in a quilt or red hair in a family. Unlike those, the ideas are growing in force and they've become stronger over the decades. One of the results of that is FRBR.

Chapter 1 explained FRBR: the three groups of entities; their attributes; their relationships; and the four user tasks of finding, identifying, selecting, and obtaining (plus the fifth task, relating, not officially defined but still important). Keep them in mind as the destination for this trip through the history of cataloging. We'll see where FRBR comes from and, along the way, meet some of the greatest librarians that have lived.

## A Little Background

Before we get to modern cataloging, a bit of background will help set the scene.<sup>2</sup> We know libraries have been around for about 4,000 years, going back to Sumerian and Babylonian times. The first libraries were collections of stone tablets, and even they had catalogs. As history went along there were many different kinds of catalogs, some very good and others just inventory lists. Any way you can think of to list books was probably used, including by size, color, or the name of the person who donated them. Some catalogs were just an unorganized jumble.

Classed catalogs were common. They organize books by subject. Because there were no modern standards such as *Sears List of Subject Headings*, people made up their own subject arrangements. They usually had top-level headings (for example history, law, and rhetoric), then subheadings with narrower topics, and under those they would list books by author, title, acquisition date, size, or some other feature. In a catalog like this, it could be very hard to find everything written by a given author.

Author catalogs, listing items by author and then title, fixed this problem. These catalogs bring together all the books by the same person, and it is there that we see the first glimmerings of the “work” idea. How are two different editions of the same book different, and how are they the same?

All catalogers ran into the same problems, and there were no agreed ways to solve them. How to handle variant spellings of names and titles? How to list

anonymous or pseudonymous books? Books by many people? Several books bound together into one volume? Series? Each cataloger would decide individually what to do.

Early catalogs were written out by hand, but in the 1600s printed catalogs started to be made. By the mid-1900s catalogs in book form were the most common. For a large library, they would run to many thick volumes. Printed catalogs were hard to organize, with all the cataloging, typesetting, proofreading, and printing, and they were out of date before they were published. New books had to be added by hand. Card catalogs were developed later in that century and were easier to keep up to date, but large card catalogs were unwieldy and hard to manage. Cards reigned for about a century. Now we are in the era of the online catalog.

Three of the four ideas we're following were not much in evidence through most of library history. We know of no axioms set down before the 1900s, and standardization and internationalization played small roles (except, perhaps, at places like the Library of Alexandria, an enormous library with an international clientele). The idea of the "work" has been fleshed out only in the last 70 years.

Devotion to users has been an important thread through all of library history, regardless of whether the library was small or large and whether its books were on stone or paper. Thomas Hyde, a librarian at the Bodleian Library at Oxford University in the seventeenth century, worked for nine hard years on an author catalog. In its preface in 1674 he wrote, "For though I was exhausted, I did not think I should complain or withdraw my neck from the yoke, but labored stubbornly, neglecting even my health, so that I might draw the matter as rapidly as possible to a successful close." He finished by saying, "In this work I have given students a tool to enable each of them to construct for himself and with ease out of this forest of materials an index of selected books that will serve to advance in no small measure his private studies."<sup>3</sup>

## Sir Anthony Panizzi

The four ideas—axioms, user needs, the "work," and internationalization—really start to gain force in early Victorian England with an Italian refugee who began the era of modern cataloging. Antonio Panizzi (later Sir Anthony) (1797–1879) was born in the Duchy of Modena in what would become Italy. Politics were lively there during the Napoleonic wars and after, and although Panizzi was a lawyer he was involved with revolutionary secret societies. He had to flee for his safety, and in 1823 he arrived in England. In 1831, he was hired at the British Museum and began a long and prosperous, although not always calm, career. The full story of his life is told in Edward Miller's *Prince of Librarians: The Life and Times of Antonio Panizzi of the British Museum*,<sup>4</sup> and his work at the British Museum is entertainingly described in Dorothy Norris's *A History of Cataloguing and Cataloguing Methods*,<sup>5</sup> both of which I draw on here.<sup>6</sup>

The British Museum was founded in 1753 and when Panizzi arrived almost eighty years later its library was a mess. Michael Gorman described it as

“a disorganized and random collection of books cataloged by indigent clergymen and other part-time drudges.”<sup>7</sup> In 1825, the Rev. T. Hartwell Horne had presented a classification scheme and a brief set of cataloging rules, both of his own making; the next year he and two assistants were hired to build a classed catalog. In 1834 the trustees wanted a progress report. The assistants had disappeared, and after eight years and £8,000, Horne had “got as far as arranging the titles under the heading, Medical and Chemical Philosophy, with such obscure subdivisions as to be almost useless.”<sup>8</sup> The trustees stopped the work.

Over the next few years there was much debate about what to do. By the mid-1830s, a Select Committee of the House of Commons was looking into how the museum was run, in part because of the catalog problems. In 1836 Panizzi made the case that, instead of a classed catalog, they should use an author catalog with a subject index. The next year he was made Keeper of the Printed Books, a sort of second-in-command.<sup>9</sup>

Now Panizzi could take charge of building the catalog he wanted. To do so, he needed a new cataloging code. With Edward Edwards, J. Winter Jones, J. H. Parry, and Thomas Watts (names now usually lost to history), and after interference from the trustees, he drew up the now famous 91 rules, *Rules for the Compilation of the Catalogue*.<sup>10</sup> It defined how to record author names and titles, what to do about anonymous works, and so on. The trustees sanctioned the rules in 1839; they were printed in 1841 and immediately acclaimed. Norris said, “It was believed that with the publication of the ninety-one rules, all cataloging controversies would be laid to rest for ever.”<sup>11</sup>

Although the rules ensured the quality of the descriptions of each book, the idea of printing a catalog of the whole collection was a failure. In 1841 an incomplete volume A was printed; no others followed. The trustees had said the entire catalog would be available by 1844. In that year they asked Panizzi how it was coming along, and he said it wouldn’t be done before 1854. In 1847 a royal commission was struck to look at the management of the museum and it spent most of its time on the catalog.<sup>12</sup> Panizzi told them that the best that could be done was to have a complete catalog of the holdings up to 1854 in print in 1895.

Many people were against Panizzi and his approach to cataloging, and the commission attracted a remarkable amount of attention. He fought his case well. “Armed with a superior knowledge of libraries and catalogs, trained in law, and possessing an instinct for verbal combat, he subjected his critics’ arguments to withering attack. He analyzed their testimony point by point with great success, for ‘he was a man with the annoying habit of not only being right, but of being able to prove it.’”<sup>13</sup> He was vindicated when the commission decided he was right and his numerous opponents, including interfering trustees, were wrong.<sup>14</sup>

The writer Thomas Carlyle was one of the opponents. He and others thought that building a catalog was a simple matter of writing down a list of titles, but Panizzi was after much bigger game, involving the “work” and a better sense of user needs:

Panizzi’s response was, in effect: Yes, I require the reader to look in two places for the information he wants, because I want to tell him much more than merely

whether or not the library has a particular book; yes, my rules are complicated, but that is because my rules are concerned not only with the book as a single and separate item, but also as a complex of editions and translations of potential interest to an acquiring reader. . . . In Panizzi's own words, "a reader may know the *work* he requires; but he cannot be expected to know all the peculiarities of different *editions*, and this information he has a right to expect from the catalogues." So here we have two individuals looking at the same object—the book—but seeing different things. Carlyle saw the book as a material object, a separate entity unrelated to any other book in the library, and he did not see why it should not be so represented in the catalog. Panizzi saw the book as an edition of a particular work that is intimately related to the other editions and translations of the work that the library may have, and thought that it should therefore be *integrated* with them.<sup>15</sup>

Seymour Lubetzky also put it another way: "[A]n adequate catalog, concerned about the actual *needs* of a reader, must be designed to tell one not only whether the particular book he or she seeks is in the library but also what other editions of the work and what other works of the author the library has. That was the object of Panizzi's rules."<sup>16</sup>

Panizzi's career at the British Museum was filled with controversy and argument, but he emerged blameless from both the investigations during his time there and was responsible for turning the library into the great institution it became—and for the Round Reading Room. He was made Principal Librarian in 1856, retired in 1866, and was knighted (on the instigation of his friend, Prime Minister William Gladstone) in 1869.<sup>17</sup>

Panizzi's rules are the wellspring of modern cataloging for several reasons: they were developed by a group and not just one man (although certainly Panizzi was the primary force); they were subject to intense debate, scrutiny, and justification; they were approved by government bodies; they were used at a major library; they received international attention; and, at root, they were good rules made by a great librarian and gave a better catalog than any that had come before. Panizzi did not set down any axioms, but user needs, the idea of the "work" (although he did not think of it that way), and standardization are all part of his legacy.

## Charles Cutter

Charles Ammi Cutter (1837–1903) is now the second most famous nineteenth-century American librarian, overshadowed by Melvil Dewey. Cutter was an important figure in his time: a leading librarian; one of the founders (with Dewey and others) of the American Library Association and *Library Journal*; the creator of the Expansive Classification; the first man to put slips into library books to make it easier to track what was checked out; and a cataloger whose work has affected all of cataloging to this day. Anyone interested in learning more about

him should read the source of this biographical information, Francis L. Miksa's *Charles Ammi Cutter: Library Systematizer*,<sup>18</sup> which goes into detail about Cutter's work and influence and collects his important writings.

Cutter was born in Boston and lived there almost his entire life. He went to Harvard College, then Harvard Divinity School, and at 21 was ready to become a Unitarian minister. He had worked at the divinity school's library during his time there, however, and was drawn to librarianship instead of preaching. In 1860 he was hired at the Harvard College library, and in 1869, at age 31, he became librarian at the Boston Athenaeum, a library and art gallery that was at the heart of Boston intellectual life. He was there for 23 years. He kept working—at other libraries, on his classification system, and with American and international library groups—until his death at 65.

Cutter is best known today because of Cutter numbers, which help form unique call numbers for different books about the same subject. Cutter's classification scheme, the Expansive Classification, was advanced and flexible but never completed. It lives on today only in the Library of Congress Classification, whose creators used it as a basis for their work.

Most important to us, tracing FRBR's development, is Cutter's cataloging code *Rules for a Dictionary Catalog*. It was first published in 1876, in the same report that unveiled Dewey's classification scheme, as *Rules for a Printed Dictionary Catalogue*. (Cutter published a five-volume dictionary catalog of the Athenaeum's holdings.) It drew on earlier codes, including Panizzi's, and the preface even mentions "the famous 91 rules of the British Museum."<sup>19</sup> A slightly revised edition in 1889 was called *Rules for a Dictionary Catalogue*, with "printed" dropped because card catalogs were becoming popular. The third edition was identical but for the addition of an index. The fourth edition<sup>20</sup> was published posthumously in 1904, and the change to *Rules for a Dictionary Catalog* reflected Cutter's desire for simplified spelling.<sup>21</sup>

A dictionary catalog was a new development. Instead of just listing items by author, it listed them by author, title, and subject, all together in one alphabetically sorted list. In a card catalog system this meant all of the cards would be filed in the same set of drawers. A dictionary catalog brings together, for example, all of the books both *by* and *about* a person. If you're old enough to have used a card catalog, it probably worked this way.

Cutter<sup>22</sup> opens *Rules* with some brief general remarks and then explains, in some of the most quoted words in library history, what a catalog is for and how it should work.

### Objects

1. To enable a person to find a book of which either
  - (A) the author
  - (B) the title
  - (C) the subjectis known.
2. To show what a library has
  - (D) by a given author

- (E) on a given subject
- (F) in a given kind of literature.
- 3. To assist in the choice of a book
  - (G) as to its edition (bibliographically).
  - (H) as to its character (literary or topical).

### Means

1. Author-entry with the necessary references (for A and D).
2. Title-entry or title-reference (for B).
3. Subject-entry, cross-references, and classed subject table (for C and E).
4. Form-entry and language-entry (for F).
5. Giving edition and imprint, with notes when necessary (for G).
6. Notes (for H).

Cutter added a wry footnote to the second edition: “This statement of Object and Means has been criticized; but it has also been frequently quoted, usually without change or credit, in the prefaces of catalogs and elsewhere. I suppose it has on the whole been approved.”<sup>23</sup> “In a given kind of literature” (2F) means that users should be able to see what novels the library has, or what plays, what poetry, etc. Cutter says the form of a book may be either “Practical, as in Almanacs, Dictionaries, Encyclopaedias” (the same books that have a topical character) and the like, or “Literary, as Fiction, Plays, Comedies, Farces” and so on.<sup>24</sup>

These Objects are the first set of axioms made in cataloging. They are the foundation on which Cutter built a full set of rules, covering all a cataloger would need to do to make a dictionary catalog. Let’s take the author as an example. Cutter says the user should be able to find a book if the author is known. The most basic implication of this is that when cataloging a book, the name of the author must be recorded and made part of the description. But some books don’t just have one author; they have two, or three, or an editor, or annotator, or illustrator, and the different roles may need to be handled specially. Should all of the authors in an anthology be listed? If 15 people collaborate, should they all be listed, or just the first few? How should pseudonyms be handled?

Next, how should the names be written down? If the name is spelled differently in different books, which is the proper version? How should names from other alphabets be transliterated? Should Ovid go under his real name, Publius Ovidius Naso? Should John Buchan be listed as 1st Baron Tweedsmuir? The names will be sorted into alphabetical order, which works easily for people with simple First-name Last-name names, but what about Hildegard of Bingen? Does Leonardo da Vinci go under L or D or V? What about languages where the name is Family-name Personal-name? Corporate authorship (many people working together under one name) is often a problem. If a commission of a government ministry writes a report, does it go under the commission’s name, or the ministry’s, or the country’s, or the name of the head of state, or something

else? What if the commission or the ministry changes its name, then issues an updated version of the report?

Those are just some of the problems that cataloging rules need to settle. On top of all that, there's the problem of providing cross-references so that if the user looks up a name but the catalog lists that person under another name, the user is directed to the right place. To meet the other Objects, similar rules are needed for titles, subjects (which need to be chosen by the cataloger), and the rest. By the time all of the rules have been decided, there will be scores of them, and they all arise from those few axioms.

Unlike mathematics, there are different ways to decide those rules. Pythagoras's theorem about right-angled triangles follows directly from Euclid's rules, but one can't always use pure logic and deduction to decide the best way to write down a name. It's possible for someone to start with Cutter's axioms and build up a different set of rules. That's a problem: the two sets of catalog records can't be shared. If one rule puts Sir Arthur Conan Doyle under C (for Conan Doyle) and the other uses D (for Doyle), when the catalogs are melded, the same writer would appear in two places and Cutter's Objects would not be met nor the user's needs served.

FRBR's user tasks are descended from Cutter's Objects. For example, "to find a book of which the author is known" becomes to "[f]ind all manifestations embodying the works for which a given person or corporate body is responsible" and to "[f]ind a particular manifestation when the name(s) of the person(s) and/or corporate body(ies) responsible for the work(s) embodied in the manifestation is (are) known."<sup>25</sup>

In FRBR the full set of possible tasks is far more broad and inclusive than Cutter specified and allows users much more freedom. Author becomes "any Group 2 entity," book becomes "any Group 1 entity," subject becomes "any Group 1, 2, or 3 entity," and the Means open up to allow searching and browsing by any attribute of any entity. FRBR doesn't say that "find X when Y is known" is necessary, it says that any user tasks can be performed on any combination of entities. The user could search for all books by a given author, but could also search for any manifestation of a set of related works where the expressions have attributes A and B, the manifestations have attributes C and D, the producer of the manifestations has attribute E, and the relation between the expressions and the works is one of F, G, or H. FRBR even sets requirements for *acquiring* items that exemplify these manifestations, which goes beyond anything Cutter said. Acquiring is not a part of cataloging, but it is part of the whole system of making information available. FRBR's more demanding user tasks reflect the changes in libraries between Cutter and now.

In Cutter's *Rules* we see the very strong presence of two of the ideas we're following: a set of axioms and a profound concern for user needs. Standardization and internationalization were also a part of Cutter's life and work. What we don't see is the idea of the "work." When Lubetzky later discussed "work," he dismissed "Cutter's vague *what the library has by a given author*. Cutter's unqualified *what* is expressive of the failure to distinguish clearly and consistently between the book and the work in his rules."<sup>26</sup>



S. R. Ranganathan, the next librarian we will meet, summed up the importance of Cutter's work:

None of the above drafts [that is, Panizzi's 91 rules and some Germanic codes] set forth cataloging rules in a systematic or exhaustive way. Nor was there much evidence of their roots stemming from some kind of first principles. Nor again was any of them from a general code and not particularly conditioned by the practice of a single library. *Rdc* [*Rules for a Dictionary Catalog*] was the first code to reach beyond those limitations. Its limitation was only in the linguistic context. The library profession has been fortunate in the author of this code. He was a genius. This is seen in the ring of certitude and the profoundness of penetration found in the rules and the commentaries of *Rdc*. They are like the eternal epigrams of a sage. *Rdc* is indeed a classic. It is immortal. Its influence has been overpowering. It inhibits free re-thinking even to-day. It appears to have been the chief source of later codes in the English language. Being a one man's creation, it has been largely apprehended intuitively. It has been later chiseled to a slight degree. That is why *Rdc* is whole as an egg.<sup>27</sup>

## The Early Twentieth Century

The year 1908 was important in cataloging: the American Library Association and the Library Association of the United Kingdom published a set of common cataloging rules. They did not agree on absolutely everything, so separate American and British editions were made, but this was the first set of Anglo-American cataloging rules. Standardization and internationalization were running strong.<sup>28</sup> Michael Gorman called this the start of the Second Age of descriptive cataloging, "the era of the committee code, the increasingly loose, baggy monsters" that lasted to 1967. The First Age began with Panizzi and included Cutter, "the age of the single-author code."<sup>29</sup>

Cutter had published his *Rules* in 1876, and soon after the ALA was working on a standard cataloging code. It didn't get far the first time. The same movement was on in Britain, and in 1877 Cutter and some other Americans went to a conference there to talk about cooperative cataloging. The British made new cataloging rules, and in the United States, the ALA made rules, the Library of Congress made rules for the cards it started to sell, and Dewey made rules. There were no clear standards, and without everyone using the same rules they could not share their work. In 1900 the ALA started working on standardization again—Cutter was actively involved in this up to his death—and in 1902, Dewey asked the British to get involved. They did. In 1908 the results were published; *Catalog Rules: Author and Title Entries* was "very much in the Panizzi-Cutter mold."<sup>30</sup> It also referred to the *Prussian Instructions*, a set of German cataloging rules in use there and in some Scandinavian countries. The internationalization idea was getting stronger.

“Sixty-nine years after Panizzi’s ninety-one rules, the Anglo-American cataloging alliance had been forged,” as Blake put it.<sup>31</sup> The rules weren’t kept up to date, however, and problems arose. Work on revisions began and internationalization suffered as the Americans went their own way,<sup>32</sup> but axioms were about to return and the “work” was finally going to get serious attention.

### Interlude: S. R. Ranganathan

Before getting to that development, let’s take a step sideways toward the great Indian librarian S. R. Ranganathan (1892–1972). Ranganathan devoted his life to librarianship and wrote on every possible aspect of the field, from philosophizing about theories of classification to giving practical advice on where to place rat traps when closing a library for the night.<sup>33</sup> He is most famous for inventing faceted classification, and he created the faceted Colon Classification, so named because the colon was the first of the punctuation marks he used to make classification numbers like L,45;421:6;253:f.44’N5. His body of work and influence on librarianship is enormous. Ranganathan studied mathematics before turning to librarianship, and he had a mathematician’s love of logic, deduction, and inference. His books are filled with principles, laws, and canons the way math textbooks are filled with theorems and corollaries. Don’t let that discourage you from reading them, because they are profound and delightful. The best one to start with is *The Five Laws of Library Science*, first published in 1931. The laws are:

- Books are for use.
- Every reader his book.
- Every book its reader.
- Save the time of the reader.
- Library is a growing organism.<sup>34</sup>

These were the building blocks of all of his work and they are as valid today as they were in 1931. The laws are important examples of the ideas of axioms and user needs, and FRBR, rich with those ideas, fulfills the laws. Where Ranganathan says “book,” for FRBR we can say any kind of work, expression, manifestation, or item: music is also for use, and movies, and Web sites. A catalog that uses FRBR will make a library’s collection more open to users (“books are for use”) by increasing the numbers of ways in which people can use the catalog. Readers will have more ways to find the entity they need (“every reader his book”), and entities will be exposed to more interested readers (“every book its reader”). A good implementation of the user tasks will save the user’s time. The “growing organism” refers not only to floor space and shelves, but also means libraries must adapt and change as the world does, using new ideas and technologies. FRBR is one of the ways libraries will grow.

Ranganathan combined the Five Laws with Cutter's rules (we saw above how greatly he admired Cutter) in his own books about cataloging. In *Classified Catalogue Code* he said:

- [A] Library Catalogue should be so designed as to:
1. Disclose to every reader his or her document;
  2. Secure for every document its reader;
  3. Save the time of the reader; and for this purpose
  4. Save the time of the staff.<sup>35</sup>

Those first two tasks are mixes of Cutter's "find" and "show" with Ranganathan's second and third laws.

The Five Laws are a solid basis for all library work, but they are not explicit in FRBR. In our discussion of the main stream of ideas flowing through FRBR history, we are up to World War II.

## **Back to Basics with Seymour Lubetzky**

The reemergence of cataloging axioms and the idea of the "work" both involve Seymour Lubetzky (1898–2003), the greatest cataloger of the twentieth century. Elaine Svenonius and Dorothy McGarry compiled his papers in *Seymour Lubetzky: Writings on the Classical Art of Cataloging* (also the source for the biographical information here), and I recommend it to anyone interested in pursuing in depth any of the ideas I discuss briefly.<sup>36</sup> Among Lubetzky's many fine traits, he was a good writer.

Lubetzky was born in what is now Belarus and taught school before moving to Los Angeles in 1927. He earned teaching credentials and a master's degree in German at Berkeley, but with the Depression (and being Jewish) he could not find work. He went back to school to become a librarian, graduating in 1934. He worked at the University of California, Los Angeles (UCLA), then in 1943 moved to the Library of Congress, where he stayed until 1960 when he returned to UCLA as a professor. He taught for nine years, then retired but did not stop working.

Lubetzky worked mightily to simplify cataloging rules and build on first principles. Since the 1908 rules, cataloging had been getting difficult. Things were a quagmire of complicated, sometimes contradictory, often confusing rules made up to patch over problems as they appeared. The Library of Congress had an enormous backlog of books, and it seemed unlikely they could ever catch up—and they were the ones making the catalog cards other libraries used! In 1941, Andrew Osborn wrote a paper about this called "The Crisis in Cataloging." He described different approaches to cataloging, and attacked what he called the "legalistic" method used by the draft revision of the ALA rules then underway. "According to it, there must be rules and definitions to govern every point that arises; there must be an authority to settle questions at issue. So the

reviser sits in judgment on the cataloger, and the head cataloger is the supreme court for his particular library . . . Debate, discussion, and decision eat up a surprising amount of time. Hence the demand in some quarters for a cataloging code that will define or rule on all debatable points.”<sup>37</sup>

The Library of Congress had Lubetzky investigate. His work was key to the 1949 *Rules for Descriptive Cataloging in the Library of Congress Adopted by the American Library Association*. That same year *A.L.A. Cataloging Rules for Author and Title Entries* came out. The two were meant to be used together to cover different parts of a cataloger’s job. The Library of Congress rules were simple and straightforward; the ALA’s were complicated and legalistic. Lubetzky tackled them next. “He moved his residence from his office at the Library of Congress to the stacks, where he spent whole days, from morning to evening, studying the history of cataloging. He wanted to begin at the beginning, to understand the thinking of the visionaries of the golden age of cataloging, Panizzi, Jewett, and Cutter.”<sup>38</sup> The result was 1953’s *Cataloging Rules and Principles*.

“Is this rule necessary?” Chapter 1 famously asks. The first line harks back to Panizzi and admires “the broad knowledge, keen thinking, and fruitful imagination which the founders of the rules have brought to the profession of cataloging.” But what about the newer complicated rules? “One is impelled to ask: Are all these rules necessary? Are all the complexities inevitable? Is there an underlying design which gives our code unity and purpose?”<sup>39</sup> He carefully analyzed cataloging rules such as one about names of married women—that they’re women, or married, isn’t the cause of the rule; it’s that their names changed. There were already rules about how to handle name changes, so there was no need to create a special case.

Later Lubetzky says a “complete reconstruction” of the rules is necessary, one built on “deliberately adopted objectives” and “well considered principles.”

The objectives implicit in our rules for entry are two. The first objective is to enable the user of the catalog to determine readily whether or not the library has the book he wants. The catalog is constantly searched by many readers and members of the staff, and the quicker this information can be found the better the catalog. The second objective is to reveal to the user of the catalog, under one form of the author’s name, what works the library has by a given author and what editions or translations of a given work.<sup>40</sup>

This is an axiomatic approach, drawing on Cutter’s rules, with some “save the time of the reader.” Notice how Cutter’s “to enable a person to find a book of which either the author, the title, or the subject is known” has become “to determine whether or not the library has the book he wants,” with no restrictions on attribute details, and how closely this matches FRBR’s “to find entities that correspond to the user’s stated search criteria.”<sup>41</sup> The second objective seems like the basic “find by author” Cutter rule, but notice how Lubetzky says “work” and “editions or translations of a given work.” We will come back to this.

Lubetzky’s work was key to the wording of the Paris Principles, the common name for the *Statement of Principles* passed at the International

Conference on Cataloguing Principles in that city in 1961. A total of 53 countries and 12 international organizations were there. They were ready to build common principles on which national cataloging codes could be based. Increasing internationalization meant that more countries wanted to share cataloging records, if the other systems were similar enough to permit it. German librarians, who had a strong cataloging tradition, had found problems with their rules, and the wartime destruction of their libraries meant they could start fresh.<sup>42</sup> The result was the Paris Principles, just 12 points on five pages.

Principle #2, “Functions of the Catalogue,” says:

The catalogue should be an efficient instrument for ascertaining

2.1 whether the library contains a particular book specified by

- (a) its author and title, or
- (b) if the author is not named in the book, its title alone, or
- (c) if author and title are inappropriate or insufficient for identification, a suitable substitute for the title; and

2.2 (a) which works by a particular author and

- (b) which editions of a particular work are in the library<sup>43</sup>

These axioms are clearly descended from Cutter’s Objects, and Lubetzky said the first objective was “substantially identical” to Cutter’s.<sup>44</sup> You’ll notice also the use of the word “work.” This fixed the “failure” Lubetzky saw in how Cutter’s Objects confused the book and the “work.”

As with Cutter’s *Rules*, the axioms can be used to generate a large set of detailed rules. The rest of the Paris Principles sketch out some of those rules but stop well short of a full code. Also as before, the axioms don’t lead inevitably to one set of cataloging rules. They were built up over the next few years into *Anglo-American Cataloguing Rules (AACR)* and also form the basis of other national codes.

FRBR’s user tasks descend from Cutter through the Paris Principles, but they expand and broaden Principle #2 to give users more scope and power. With some rewording, 2.1 (a) becomes “ascertain whether the library contains a particular manifestation when the name(s) of the person(s) and/or corporate body(ies) responsible for the work(s) embodied in the manifestation, and the title of the manifestation and/or expression and/or work, is (are) known.”

The creation of the Paris Principles was a major event in cataloging history. All four of the ideas are here: an axiomatic approach, user needs, the “work,” and standardization and internationalization. The Paris Principles are an important part of FRBR’s history, and, as we will see, FRBR has shaped the wording of the revision of the principles. Next, however, we go back to look at the “work.”

## The “Work”

You know what a FRBR work is; we’ve seen that the idea of the “work” was part of Panizzi’s thinking but not Cutter’s; and we saw that through Lubetzky

it was fundamental to the Paris Principles.<sup>45</sup> Lubetzky was influenced by a 1936 paper by Julia Pettee, “The Development of Authorship Entry and the Formulation of Authorship Rules as Found in the Anglo-American Code.”<sup>46</sup> She surveyed cataloging history—going back to Thomas Hyde at the Bodleian Library in 1674, as well as Panizzi and Cutter—and exposed an adumbrated idea:

The attribution of authorship is a first principle of American catalogers. But why this tireless search? A second principle, even more fundamental, which necessitates the search, emerges. The book in hand is considered not as a single item but as a representative of a literary unit. It is the province of the catalog to assemble these literary units, issued in various forms, under a single caption. Pope’s translation of Homer’s *Odyssey* does not stand by itself. It is a version of the original Greek.<sup>47</sup>

The axiom idea is there. But “literary units”—what are they? They’re not exactly “works” (as de Rijk shows<sup>48</sup>), but they’re close. Lubetzky began the full development of the idea of the “work.” I quoted him talking about Panizzi and the idea, and I quoted him talking about objectives of the catalog.<sup>49</sup> Here is a bit more about that:

The need for the second objective [to show all works by a given author, and bring together all editions and translations] arises from the fact that the works of an author may be issued under different names as a result of a change, translation, transliteration, or even misprint of the author’s name, and the editions of a work may be issued under different titles for similar reasons, and could, therefore, be separated in the catalog.<sup>50</sup>

This is almost pure FRBR talk about works, expressions, and manifestations. Lubetzky kept advocating this way of thinking up to and during the creation of the Paris Principles, and although it was not without argument, they refer to “works.” This terminology is standard now, has been the subject of much research, and is a key part of the FRBR model. In fact, the four-level hierarchy of work, expression, manifestation, and item is probably the most well-known thing about it.

Here’s one last quote from Lubetzky, which ties together the idea of the “work” with cataloging history and the importance of user needs:

The book, it should be noted, comes into being as a dichotomic product—as a *material* object or medium used to convey the *intellectual* work of an author. Because the material *book* embodies and represents the intellectual work, the two have come to be confused, and the terms are synonymously used not only by the layman but also by the cataloger himself. Thus catalogers refer to *the author and title of a book* instead of, more accurately, to *the author of the work and the title of the book embodying it*, and the inquirer searching the catalog for a *particular book* is more often than not after *the work* embodied in it, although he is very likely unaware of the distinction between the two . . . The question that must then be faced

at the outset—and that has been faced since Panizzi, though beclouded by the failure to distinguish clearly and consistently between the *book* and the *work*—is whether the objective of the catalog should be merely to tell an inquirer whether or not the library has the *particular book* he is looking for, or whether it should go beyond that and tell him also what other editions and translations—or other representations—of the *work* the library has so as to help him more effectively determine whether the library has what he needs and to select what might best serve his purposes.<sup>51</sup>

FRBR uses its four-level hierarchy to move from an abstract work to an item one can hold in one's hand, but other people have other arrangements, such as work, version, adaptation; work, text, edition, printing, book; work, document, text; work, derivations, item;<sup>52</sup> or work, edition, subedition, version, document.<sup>53</sup> They can all more or less be mapped to each other. There are ranges of thought about the *expression* entity—when something is a new expression of an existing work and when it is sufficiently different to be a new work—and what it means for a work to contain other works.

The four entities have been the subject of much debate and thought. FRBR has an axiomatic approach, but we've seen how a small set of axioms can generate complex systems. FRBR's axioms are not simple so there is even more to consider about their implications. A work is more complicated than a circle, and the concept of an expression is harder to grasp than that of a straight line. The entire bibliographic universe is grander even than three-dimensional geometry.

## More and More of More and More

The Paris Principles brought us up to 1961, almost half a century ago now. It was a culmination (*a* culmination, not *the* culmination) of most of the major ideas we've followed: an axiomatic approach, user needs, and standardization and internationalization. The "work" was still in its early stages.

There are two ways I could continue now. I went into some detail about Cutter and Lubetzky, and I could do the same for contemporary cataloging. I won't, because it would take the rest of the book and you'll find the other chapters far more interesting. I'll summarize where we are now, some problems we face, and how FRBR was made to help fix them.

Cataloging as it stands today has been built up in earnest since 1967—the dawn of the Third Age, as Michael Gorman puts it.<sup>54</sup> That year *Anglo-American Cataloguing Rules* was released; it was an international (American, Australian, British, Canadian) standardization of descriptive cataloging rules, with a philosophy based on the Paris Principles. (As in 1908, the British and Americans didn't agree on everything, so there were two editions.) By 1968 the Machine Readable Cataloging (MARC) format had passed its trials and electronic sharing of cataloging records was here to stay. In 1971 the International Federation of Library Institutions and Associations (IFLA) published the International

Standard Bibliographic Description (ISBD) specification, which got folded into the major 1978 AACR revision (on which the British and Americans did agree).

Catalogers use these and many other standards in their daily work. There are classification schemes and subject heading systems. There are thick manuals on how to catalog serials. There are thick manuals on library software that implements the standards. There are thick manuals on *everything*. Special fields like medical or legal librarianship have their own rules. Every standard has books explaining how to use it. Everything is under regular maintenance and revision.

It's hard to keep up with all that, but the real problem is that all those rules cannot keep up with what is happening around us. Cutter saw the invention of the telephone, the phonograph, and the moving picture in his lifetime. There must have been libraries where users came in wanting to borrow wax cylinders holding recorded sound, but the library wasn't ready for the new 1880s technology. Today things are vastly more complicated:

- Cataloging costs money and takes time. Sharing cataloging records will save both, if everyone can agree on how to catalog things the same way.
- Electronic resources (on computers) are hard to catalog and manage, and not always easy to make available.
- Everything comes in many formats, and they're hard to catalog, manage, and make available, too.
- There's more of everything.
- Technology is changing how libraries work, what they have in their collections, and what users need and expect.

This probably describes the situation in your library today, but it's not new. In fact, almost two decades ago, these problems were the subject of a two-day conference, the Seminar on Bibliographic Records, held in Stockholm in 1990.<sup>55</sup> One of the resolutions passed at the end was: "That a study be commissioned to define the functional requirements for bibliographic records in relation to the variety of user needs and the variety of media."<sup>56</sup> Functional requirements for bibliographic records!

### **FRBR Is Born and Grows Up**

The resolution was honored. In 1991, a group was formed by IFLA, which has a division for international cataloging issues, to do the study. Olivia M. A. Madison was chair and wrote the full history of FRBR's creation in "The Origins of the IFLA Study on Functional Requirements for Bibliographic Records."<sup>57</sup>

The group worked for six years, with some members and consultants coming and going. Terms of reference were set at the start and followed closely.



They soon decided on using an entity-relationship model, and then had to figure out what the entities were and how they would all relate. In dealing with user needs, they had to decide whether or not to start with fresh research. To save time, they decided to rely on their own knowledge and that of reviewers and experts in different fields.

The needs of researchers, students, librarians, library staff, publishers, vendors, retailers, systems designers, and users of information services, etc., in and outside traditional library environments, were considered and evaluated within the context of tasks such as finding information, verifying citations, determining display and information retrieval functions, purchasing, selling, managing acquisitions information, cataloging, indexing and abstracting, managing inventories, circulation, interlibrary loan, preservation, reference, etc.<sup>58</sup>

The work was presented at IFLA conferences in 1993 and 1994, and the group used the comments to help with their work. A draft of the final report was sent out and made available on the Web in 1996, resulting in 40 comments (7 negative) from 16 countries. More revisions were made. Madison said, "I believe that the worldwide review process and resulting feedback were clearly reflected in the proposed final report, and played a large part in the ease of approval that followed."<sup>59</sup>

The report was approved in 1997 and published in 1998. The Study Group became a Working Group, then finally a Review Group as FRBR became part of the international library establishment. Subgroups were established to look into particular issues and their work may result in a revision of FRBR.

FRBR, which builds on so much previous work, is now a basis for other work. Foremost are two other IFLA projects, Functional Requirements for Authority Data (FRAD) and Functional Requirements for Subject Authority Records (FRSAR), which will work intimately with FRBR and support its implementation. Another is IFLA's *Guidelines for Online Public Access Catalogue (OPAC) Displays*,<sup>60</sup> which says the four FRBR user tasks are also the four functions of an OPAC. One of its guidelines is that catalogs should show a "FRBRized" view of search results, and it includes an example of how that might look.

We've been looking at FRBR as a set of axioms that can underlie a cataloging code without defining exactly how it should work. This is explicitly stated. "The model developed for this study represents, as far as possible, a 'generalized' view of the bibliographic universe; it is intended to be independent of any particular cataloging code or implementation of the concepts it represents."<sup>61</sup> Barbara Tillett's chapter explains one example of this: how AACR is being rebuilt with a FRBR foundation.

FRBR builds on the Paris Principles, and in turn it is feeding back and helping to improve their revision. As of mid-2007, *Statement of International Cataloguing Principles* (an IFLA project) is still in draft and receiving international scrutiny. It says it is meant to "adapt the Paris Principles to objectives that are applicable to online library catalogues and beyond. The first of these objectives is to serve the convenience of the users of the catalogue."<sup>62</sup> "The new principles

build on the great cataloging traditions of the world:” Cutter, Ranganathan, and Lubetzky. FRBR’s entities are the basis of cataloging records, it says, and catalogs exist so that users can perform five basic tasks: find, identify, select, obtain, and navigate (i.e., the unofficial fifth FRBR task, relate).

We have followed four ideas—the use of axioms, the importance of user needs, the “work,” and standardization and internationalization—through some of the history of cataloging, and have seen how they have appeared with growing force since Panizzi in the 1840s. Cutter’s *Rules* gave a basic set of Objects and Means that have guided cataloging ever since, including the Paris Principles. Ranganathan’s Five Laws of Library Science give a basis for all library work, including cataloging. English-speaking countries have collaborated on cataloging for over a century, and with IFLA’s support there is a worldwide movement for universal bibliographic control. Underpinning all of this is the idea of the “work.”

All four of the ideas are showing strongly now, and one of the outcomes is FRBR. It will be interesting to watch how FRBR and the ideas continue on from here, and to see—and help shape—what comes next.

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## Notes

1. For more about “principles” see Elisabeth de Rijk Spanhoff, “Principle Issues: Catalog Paradigms, Old and New,” *Cataloging & Classification Quarterly* 35, no. 1/2 (2002): 37–59.

2. For a general survey of the history of cataloging, see Norris (1939), Strout (1956), or encyclopedia entries by Carpenter (1994), Hanson and Daily (2003), or Taylor (1993). For a popular history of libraries, see Battles (2003) or Petroski (1999).

3. Elisabeth De Rijk, “Thomas Hyde, Julia Pettee and the Development of Cataloging Principles: With a Translation of Hyde’s 1674 Preface to the Reader.” *Cataloging & Classification Quarterly* 14, no. 2 (1991): 49.

4. Edward Miller, *Prince of Librarians: The Life and Times of Antonio Panizzi* (London: Andre Deutsch, 1967).

5. Dorothy May Norris, *A History of Cataloguing and Cataloguing Methods, 1100–1850: With an Introductory Survey of Ancient Times* (London: Grafton, 1939).

6. For insight into Panizzi’s work, see the writings of Seymour Lubetzky (of whom more later) collected in Svenonius and McGarry (2001).

7. Michael Gorman, “Let Us Now Praise...” *American Libraries* (April 1980): 201.

8. Norris, p. 203.

9. Many were against an Italian taking over the position, and one accusation made was that “Panizzi had been seen in the streets of London selling white mice” (Norris, p. 206).

10. Antonio Panizzi, “Rules for the Compilation of the Catalogue,” in British Museum, *The Catalogue of Printed Books in the British Museum* (London, 1841), 1: v–ix. The whole complicated story of how 73 rules became 91 is told in Michael Carpenter’s “The Original 73 Rules of the British Museum: A Preliminary Analysis” *Cataloging & Classification Quarterly* 35, no. 1/2 (2002): 23–36.

11. Norris, p. 207.

12. The trustees of the British Museum were headed by the Archbishop of Canterbury, the Lord Chancellor, and the Speaker of the House of Commons. Librarians today who find themselves in a project running late and over budget can be happy that at least they do not have to give progress reports to an archbishop and a royal commission.

13. Nancy Brault, *The Great Debate on Panizzi’s Rules in 1847–1849: The Issues Discussed* (Los Angeles: The School of Library Service & The University Library, University of California, 1972), pp. 8–9.

14. During the second investigation Panizzi wrote a long letter to the Earl of Ellesmere, the chair of the commission, explaining the difficulties of building a good catalog. It is still worth reading, and Panizzi (1848) is easy to find in Michael Carpenter and Elaine Svenonius, eds. *Foundations of Cataloging: A Sourcebook* (Littleton, CO: Libraries Unlimited, 1985), pp. 18–47.

15. Seymour Lubetzky and Elaine Svenonius. “The Vicissitudes of Ideology and Technology in Anglo-American Cataloging since Panizzi and a Prospective Reformation of the Catalog for the Next Century,” in *Seymour Lubetzky: Writings on the Classical Art of Cataloging*, eds. Elaine Svenonius and Dorothy McGarry (Englewood, CO: Libraries Unlimited, 2001), pp. 421–429.

16. Seymour Lubetzky, “The Fundamentals of Bibliographic Cataloging and AACR2,” in Svenonius and McGarry, p. 370.

17. Gladstone was a great reader and also enjoyed sorting and arranging his books. He refers to Panizzi in his essay "On Books and the Housing of Them" (n.d.), available: <http://www.gutenberg.org/dirs/etext02/obhot10.txt>.

18. Francis L. Miksa, ed., *Charles Ammi Cutter: Library Systematizer* (Littleton, CO: Libraries Unlimited, 1977).

19. Charles A. Cutter, *Rules for a Dictionary Catalog*, 4th ed. (Washington, D.C.: Government Printing Office, 1904), p. 3.

20. A digitized version is available online at <http://www.hti.umich.edu/cgi/b/bib/bibperm?q1=AEY6826>.

21. An interest shared with Dewey, who was born Melville Dewey but preferred Melvil Dui.

22. Cutter, p. 12.

23. Ibid.

24. Ibid., p. 20.

25. IFLA Study Group on the Functional Requirements for Bibliographic Records, *Functional Requirements for Bibliographic Records: Final Report* (Munich: K. G. Saur, 1998), p. 97. Also available at <http://www.ifla.org/VII/s13/frbr/frbr.pdf>.

26. Seymour Lubetzky, "Principles of Cataloging. Final Report. Phase I: Descriptive Cataloging," in Svenonius and McGarry, p. 273.

27. S. R. Ranganathan, *Heading and Canons: Comparative Study of Five Catalogue Codes* (Madras: S. Viswanathan, 1955), p. 15.

28. For the full story on all this, see Virgil L. P. Blake, "Forging the Anglo-American Cataloging Alliance: Descriptive Cataloging 1830–1908," *Cataloging & Classification Quarterly* 35, no. 1/2 (2002): 3–22.

29. Michael Gorman, "Seymour Lubetzky, Man of Principles," in *The Future of Cataloging: Insights from the Lubetzky Symposium; April 18, 1988, University of California, Los Angeles*, eds. Tschera Harkness Connell and Robert L. Maxwell (Chicago: American Library Association, 2000), p. 13.

30. Blake, "Forging," p. 19.

31. Ibid.

32. "The British committee members were otherwise occupied after September of 1939," as Gorman, "Seymour Lubetzky," p. 14, put it.

33. S. R. Ranganathan, *Library Administration* (Madras: The Madras Library Association, 1935), p. 601.

34. S. R. Ranganathan, *The Five Laws of Library Science*, 2nd ed., with amendments (Bombay, India: Asia Publishing House, 1963), p. 9.

35. S. R. Ranganathan, *Classified Catalogue Code; With Additional Rules for Dictionary Catalogue Code*, 5th ed. (Bangalore, India: Sarada Ranganathan Endowment for Library Science, 1989), p. 77.

36. See also the papers given in honor of Lubetzky's 100th birthday, collected in Connell and Maxwell.

37. Andrew D. Osborn, "The Crisis in Cataloging" (originally written in 1941), In Carpenter and Svenonius, pp. 93–94.

38. Svenonius and McGarry, pp. 75–76.

39. Seymour Lubetzky, "Cataloging Rules and Principles," in Svenonius and McGarry, p. 83.

40. Ibid., p. 113.

41. *FRBR Report*, p. 82

42. Carpenter and Svenonius, *Foundations*, p. 176.

43. International Conference on Cataloguing Principles. "Statement of Principles," in Carpenter and Svenonius, p. 179.
44. Lubetzky, "Principles of Cataloging," p. 273.
45. For a complete look at the "work," see Richard Smiraglia's short and very readable *The Nature of "A Work": Implications for the Organization of Knowledge* (Lanham, MD: Scarecrow Press, 2001).
46. Julia Pettee, "The Development of Authorship Entry and the Formulation of Authorship Rules as Found in the Anglo-American Code," in Carpenter and Svenonius, pp. 75–89. If you read it, follow it with De Rijk, "Thomas Hyde, Julia Pettee" for analysis and background.
47. Pettee, p. 75.
48. De Rijk, "Thomas Hyde, Julia Pettee," pp. 31–62.
49. See Patrick Wilson, "The Second Objective," in *The Conceptual Foundations of Descriptive Cataloging*, ed. Elaine Svenonius (San Diego: Academic Press, 1989), pp. 5–16, named after this Lubetzky snippet, for an important pre-FRBR discussion of the "work."
50. Lubetzky, "Cataloging Rules and Principles," pp. 113–114.
51. Lubetzky, "Principles of Cataloging," pp. 270–271.
52. Smiraglia, *The Nature of "A Work."*
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