
Resource Description and Access (RDA)

An Introduction for Reference Librarians

Liz Miller,
Guest Columnist

*Correspondence concerning this column should be addressed to **Diane Zabel**, Schreyer Business Library, The Pennsylvania State University, 309 Paterno Library, University Park, PA 16802; e-mail: dxz2@psu.edu.*

Liz Miller is Cataloging Librarian, New Mexico State University Library, Las Cruces, New Mexico.

A new cataloging code, Resource Description and Access (RDA) was published in June 2010 and has been undergoing tests at select libraries. RDA is a departure from its predecessor, the Anglo-American Cataloging Rules, second edition (AACR2), in that it was designed for the online environment, is more principles-based, and better accommodates formats other than print. Liz Miller has been following the development of RDA for a few years and has presented on the topic twice at the New Mexico Library Association Conference. I was delighted when she approached me about writing an article on RDA, one geared to the noncataloger. In this column, reference librarians will learn why RDA was developed, what differences they will see, and how RDA contributes to a new world of library information.—*Editor*

A librarian is cataloging a DVD. She consults a cataloging code, the Anglo-American Cataloging Rules, second edition (AACR2), to make decisions about the pieces of information she will include in the catalog record. AACR2 also instructs her on such points as from where on the resource she should take information (for example, should she get the title information for the DVD from the title screen or from the disc label?), when and how to abbreviate words, and how to choose and construct access points.

To assign subject terms, she consults a controlled vocabulary, the Library of Congress Subject Headings. She consults yet another standard, the Library of Congress Classification, to assign a class number to collocate the DVD with other resources on the same topic.

In all of these processes she uses a standard digital format, Machine-Readable Cataloging (MARC), to encode the various pieces of information she has selected to include in the record. Correct MARC coding ensures the record will search and display properly in an electronic catalog. The record then becomes part of her library's Integrated Library System (ILS), Millennium. The ILS software determines how the information in the record will be searched, retrieved, and displayed in the Online Public Access Catalog (OPAC), where it will be seen by users of the catalog, including patrons and reference librarians. You may begin to see why some have compared cataloging to solving a puzzle.

One piece of the puzzle is about to change. A new cataloging code, Resource Description and Access (RDA), has been developed to take the place of AACR2. The development of RDA is big news for catalogers, of course, but it has implications for reference librarians, too. This article is intended to give reference librarians an introduction to RDA. Readers will

learn why RDA was developed, the principles upon which RDA is based, the differences between AACR2 records and RDA records, and why RDA is so important to catalogers yet also controversial.

WHY ARE CATALOGING CODES IMPORTANT?

In the past, each library would create its own catalog cards. This changed in the early 1900s when the Library of Congress began selling card sets (author, title, and subject) to other libraries. Every card set that a library purchased meant one less that had to be created locally, from scratch. This was an early instance of shared cataloging.¹

When MARC was developed in the 1960s, catalogers started creating records in electronic form. MARC made record sharing much easier because the information in the records could be exchanged between computers.² When a cataloger creates an electronic record from scratch and contributes it to a bibliographic utility such as OCLC, a cataloger from any other OCLC member library can download that record instead of creating its own original catalog record.³

One crucial factor that made it possible for libraries to share records with each other was the wide adoption of AACR2. A uniform cataloging code meant that every cataloger using it was creating records in the same way. It meant that a catalog record created in Poughkeepsie could be used by a library in Tacoma.⁴

BRIEF HISTORY OF NINETEENTH AND TWENTIETH CENTURY CATALOGING CODES

To appreciate the importance of RDA, it is helpful to know something about the cataloging codes that preceded it. The first American and British cataloging rules were published in the nineteenth century. These included Sir Anthony Panizzi's ninety-one rules for compilation of the British Museum's printed catalog (1841) and Charles Ammi Cutter's *Rules for a Dictionary Catalog* (1876). An early international code was developed by the American Library Association and the Library Association (Britain) in 1908. Revisions of this work were published in 1941 and 1949. The 1949 revision was a collection of cases, many of them very specialized. Because they were not based on an organizing theory, they were not helpful when catalogers had to deal with new situations, and as a result they were largely ignored outside North America.⁵ In the 1950s, Seymour Lubetzky of the Library of Congress analyzed the 1949 revision and recommended that further editions be based on guiding principles rather than consist of a number of cases.⁶

In 1961, the International Conference on Cataloguing Principles was held in Paris, where a statement of twelve principles, known as the Paris Principles, was agreed upon. The first Anglo-American Cataloging Rules (AACR) were published in 1967, in two substantially different versions, one for the United States and another for the United Kingdom and Commonwealth nations.

The two divergent versions of AACR were quickly seen as problematic from the standpoint of standardization, so AACR2 was published in 1978. Even though it was called AACR2, it was actually a new code, organized differently from AACR. It was called AACR2, however, because some thought that catalogers wouldn't accept a completely new code just eleven years after AACR. This time, the United States and English/Commonwealth versions were essentially the same.⁷

WHY WAS A NEW CATALOGING CODE DEVELOPED?

When AACR2 was published in 1978, most library catalogs consisted of cabinets of drawers filled with cards.⁸ Most works collected by libraries were printed texts.⁹ By the early 1990s most libraries had converted their cards to electronic records.¹⁰ In the years since then, materials have become available in many more formats, including CD-ROMs and DVDs.¹¹ Both monographs and serials have moved increasingly to publication in electronic form.¹² Catalogers have had to deal with these changes as best they could, struggling to apply a cataloging code that has become increasingly out-of-date.¹³

The wider world has seen tremendous changes in technology and communications since 1978. Personal computers have become increasingly powerful and affordable, and the World Wide Web has revolutionized the way people find information and communicate with each other. As web use became common, the expectations of library users changed. Users became accustomed to retrieving large sets of results from simple keyword searches and eventually viewed library catalogs as difficult to use.¹⁴

One reason that cataloging leaders felt the need to develop a new cataloging code is that AACR2 is seen as inadequate for the myriad types of resources that came into being after AACR2 was adopted. Although AACR2 was revised to accommodate the description of other media, it remains a print-oriented standard, and rules for describing other media are a kind of afterthought attached to the rules for describing printed books.¹⁵

AACR2 has chapters for different categories of materials (e.g., sound recordings, cartographic materials, motion pictures, and video recordings). As new technology has made different formats available, some of them falling into more than one of AACR2's categories, a logical flaw has been exposed in the way materials are categorized in AACR2. Some categories are based on content (cartographic materials, graphic materials, three-dimensional artifacts), while others are based on carrier, that is, the physical medium in which data are stored (sound recordings, motion pictures, video recordings, computer files, and microforms).¹⁶

An example of a resource that falls into more than one of AACR2's categories is a map that is issued electronically. Should a cataloger follow AACR2's chapter on cartographic materials or the chapter on electronic resources?¹⁷

Another shortcoming of AACR2 is its strong Anglo-American bias. As more and more libraries around the world

share records with each other, it is increasingly important to have a cataloging code that will be accepted beyond the United States, Canada, the United Kingdom, and Australia.¹⁸

Continuing the effort to make cataloging codes more principles-based and internationally accepted, in 1990 the International Federation of Library Associations and Institutions (IFLA) chartered a committee to study the way that bibliographic records function in relation to the needs of users. After several interim drafts, the committee produced Functional Requirements for Bibliographic Records (FRBR) in 1997.¹⁹

FRBR is usually described as a new conceptual model of the bibliographic universe.²⁰ It is helpful to remember that most of the concepts expressed in FRBR have been implicit in cataloging and authority work for decades, so they are not unfamiliar. However, in FRBR they are more explicitly defined and placed within a principle-based theoretical framework.²¹

FRBR defines four user tasks: *find* resources that meet the user's stated search criteria; *identify* that a resource is the one that the user is looking for and distinguish between different resources with similar traits; *select* a resource that meets the user's needs; and *obtain* access to the resource.²²

Besides being based on the above user tasks, FRBR is based on the entity-relationship model, a concept from the field of database design. This model consists of different entities and the relationships between them.²³ The model is more complex than the relational database model currently used in most library catalogs.

In the entity-relationship model, an entity can be thought of as a "thing." There are different types of entities. Each entity is defined and has attributes that are also defined. In addition, each type of relationship between entities is defined and has defined attributes. This level of detail allows bibliographic data to be parsed out in very small pieces. The fact that each attribute is precisely defined means that users are able to identify and select resources with much more precision.²⁴

As an example, take a copy of the 1851 Harper edition of *Moby Dick* that was once owned by Abraham Lincoln. In FRBR terms, the particular edition of *Moby Dick* is a type of entity called "manifestation," and the copy once owned by Abraham Lincoln is a type of entity called "item." "Item" is defined as "a single exemplar of a manifestation." Attributes of an item include "item identifier" (in most cases this would be a barcode number) and "provenance of the item," which is defined as "previous ownership or custodianship of the item." In the case of this book we would record that it was owned by Abraham Lincoln. Another attribute is "marks and inscriptions." If Abraham Lincoln wrote any notes in the margin, this would be recorded as an attribute of the item, too. "Abraham Lincoln" is also a kind of FRBR entity: a person. Included in the attributes of "person" are name of person and dates of person (usually birth and death dates). Among the relationships between "item" and "person" are "owned by." In the case of our copy of *Moby Dick*, we would record the relationship "owned by" between this item and the person "Abraham Lincoln."²⁵

In a world of bibliographic information organized according to the FRBR principles, a researcher looking into

Abraham Lincoln's impressions of Herman Melville's works could search a database for books by Melville that were once owned by Abraham Lincoln and had notes in the margins. The careful recording of books' attributes (marks and inscriptions) and their relationships (owned by) to other FRBR entities (the person "Abraham Lincoln") makes it possible to pinpoint works by Melville once owned by Abraham Lincoln with notations in the margins.

In a world without FRBR, this work would be very painstaking. A researcher would have to hope that the libraries that hold books once owned by Abraham Lincoln have recorded that information somewhere in the bibliographic record (probably in a note) and have also noted the presence of margin notes.

FRBR presents an opportunity to better collocate closely-related resources. For example, the book *Harry Potter and the Philosopher's Stone* was published in England by Bloomsbury in 1997. The same book was published in the United States by Scholastic as *Harry Potter and the Sorcerer's Stone*. It has been translated into many languages and has been published in different editions. FRBR would bring all these different versions together by creating an overarching entity called "work."²⁶ The "work" *Harry Potter and the Philosopher's Stone* serves as an umbrella for the numerous translations, editions, and so on. This is helpful to users who would want to know that the English and United States versions are the same work, who seek to differentiate between editions, and want to discern between other Harry Potter books.

Library catalog data became searchable in more sophisticated ways when catalogs were automated and made available online. Yet as far as library data has come, it is still not very compatible with the World Wide Web, the information environment with which most library users are familiar.²⁷

The problem with library data are that it is not as robust as other data to which users have become accustomed. An example of very robust data are the information that powers Google Maps, a service that allows a user to zoom in to almost any location on earth, find pictures of that location, switch to a view that simulates the experience of driving down a street, and much more. The data behind Google Maps is parsed out and linked, making it possible for computers to manipulate the data behind the scenes.²⁸

By contrast, most catalog records consist of text strings, not data that can be manipulated by computers in the manner of Google Maps. In addition, as useful as MARC has been to libraries, it is unlike any record format used by other data communities. As a result library data doesn't work well with other data. This puts library data at a disadvantage when it comes to being discovered on the web.²⁹

In 2001, Tim Berners-Lee, director of the World Wide Web Consortium (W3C),³⁰ articulated a vision of the future World Wide Web called the Semantic Web. The Semantic Web would consist of data that is structured and linked in such a way that a computer can understand the meaning of the data, which would permit a computer to manipulate and synthesize the data in much more rich and complex ways

than are possible on the World Wide Web of today. The Semantic Web would rely on the development of a linked data structure that defines “things” and the relationships between things. The Semantic Web is currently being developed.³¹

DEVELOPMENT OF RDA

The Joint Steering Committee for Revision of AACR2 began meeting in 2004 to draft a major revision to AACR2, to be known as the Anglo-American Cataloging Rules, third edition (AACR3). Based on comments from a constituency review of an early draft, the committee decided that a completely different approach was needed. The work being drafted was renamed Resource Description and Access (RDA), and the committee was renamed the Joint Steering Committee for Development of RDA. The committee incorporated the FRBR principles into RDA. It also chose a scenario that assumes that RDA will be using the entity-relationship database adopted by FRBR.³² This database structure requires that information is parsed and defined in more detail and anticipates that RDA will work well with the Semantic Web.³³

Draft chapters of RDA were released between 2005 and 2007, and in 2008 a full draft was released. The text was revised based on public comments and a final draft was delivered to the publishers in June 2009. RDA was published in June 2010.³⁴

WHAT WILL RDA MEAN TO USERS AND REFERENCE LIBRARIANS?

Many benefits of RDA will not be seen until other standards and systems are developed. Changes to the current record formatting standard (MARC) or the development of a completely new formatting standard may be required to fully bring out the various RDA entities and relationships. New ILSs will need to be developed to display the relationships between different FRBR entities in RDA records. Finally, the Semantic Web needs to be developed to exploit the interoperability of RDA with systems outside of libraries.

Some changes in bibliographic records will be immediately visible to a reference librarian when she looks at RDA records in her library’s online catalog. One immediate change will be in the title area of the record. The General Material Designation (GMD) will no longer be present in records for nonprint resources. For example, in an AACR2 record for a DVD, the title would read “The king of Kong [video recording] : a fistful of quarters.” In RDA, “[video recording]” will be replaced by three data fields that describe the content, media, and carrier of the resource. This change was a response to the logical error in AACR2 that confused a resource’s content with its carrier. The title in an RDA record for the same DVD would read “The king of Kong : a fistful of quarters.” The additional data field for content would read “two-dimensional moving image”; the field for media would read: “video”; and the field for carrier would read: “video-disc.” These fields may or may not display in the Online

Public Access Catalog (OPAC), depending on the library’s ILS and how the ILS is configured.

Another change with RDA will be the use of fewer abbreviations. AACR2 dictated the abbreviation of certain words to save both card space and electronic storage space, which was expensive in the early days of electronic catalog records. In the current information environment, such economies are not needed. An underlying principle of RDA is “take what you see,” meaning that catalogers will do more direct transcription of information from the resource and less abbreviating. For example, if the edition statement on a resource reads “Third edition,” an AACR2 record would read “3rd ed.,” but the RDA record would provide a transcription of exactly what is on the resource: “Third edition.”

Latin abbreviations are eliminated in RDA in favor of phrases in the language of the catalog record. In an AACR2 record, if the place of publication and the name of the publisher are unknown, the cataloger records “[s.l. : s.n.]” in the publication area. S.l. is an abbreviation for *sine loco*, a Latin term meaning “without a place”; s.n. is an abbreviation for *sine nomine*, “without a name.” In an RDA record in English, this information would be recorded as “[place of publication not identified]” and “[publisher not identified].” The square brackets are used in both AACR2 and RDA to indicate information that is supplied by the cataloger and not found on the resource being cataloged.

AACR2 uses the “rule of three” when recording and providing access points for multiple authors of a resource. This means that if there are up to three authors, all three are recorded in the statement of responsibility, and an access point is created for each author. For works with more than three authors, only the first author is recorded in the statement of responsibility, and an access point is created for that author only. RDA does away with the rule of three, recording and providing an access point for every author of a resource. For example, the book *50 Great Myths of Popular Psychology* has four authors. The statement of responsibility in an AACR2 record would read “Scott O. Lilienfeld . . . [et al.]” (“et al.” is an abbreviation for *et alia*, a Latin phrase meaning “and others”). Only Mr. Lilienfeld would be traced as an author. In contrast, the statement of responsibility in the RDA record would read “Scott O. Lilienfeld, Steven Jay Lynn, John Ruscio, Barry L. Beyerstein,” and an access point would be created for each author.

Reference librarians who work with collections of resources about the Bible will see differences in access points for parts of the Bible. In AACR2, the headings for the Old and New Testaments are “Bible. O.T.” and “Bible. N.T.” In RDA records, following the preference for unabbreviated words, those headings will be “Bible. Old Testament” and “Bible. New Testament.” RDA also dispenses with the interpolation of “O.T.” or “N.T.” between “Bible” and the name of a book of the Bible. For example, the access point for the book of Esther in an AACR2 record would be “Bible. O.T. Esther.” The access point in an RDA record would be “Bible. Esther.”

Reference librarians who work with collections of music

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and works about music will see differences between AACR2 and RDA records as well. The words “arranged,” “accompanied,” and “unaccompanied” will no longer be abbreviated in titles. Another change is treatment of librettos under RDA. Whereas librettos are entered under the composer’s name in AACR2 records, in RDA records librettos are entered under the name of the librettist. For example, an AACR2 record would enter the libretto under the name of the composer: “Adams, John. Doctor Atomic. Libretto.” An RDA record for the same work would enter the libretto under the name of the author of the libretto: “Sellars, Peter. Doctor Atomic,” with an added entry “Adams, John. Doctor Atomic. Libretto.”³⁵

CONTROVERSY OVER RDA

Although almost all official communications from the American Library Association and the Library of Congress have been very positive about RDA, many in the cataloging community have expressed doubts about various aspects of RDA. One serious concern is the validity of RDA’s stated focus on users. The developers of the FRBR principles, upon which RDA is partly based, outline four basic user tasks. However, no studies of users were involved in defining those tasks.³⁶

Another concern is the high cost of implementing RDA. RDA Toolkit is offered as an annual subscription with a base price for two or more users of \$380. A single user subscription is offered at \$195 annually, and a print edition is available for \$150. Currently most catalogers access AACR2 through a print version that costs \$95 or as part of Cataloger’s Desktop, an online resource that includes dozens of cataloging standards and tools, with multi-user subscriptions starting at \$525 to \$685 annually.³⁷ Unlike AACR2, RDA Toolkit is not included in a subscription to Cataloger’s Desktop but must be subscribed to separately. Another cost of implementation is training catalogers, most of whom are paraprofessionals, to apply the new standard. Having staff travel to remote locations for training is expensive, and even online training is costly when several catalogers must register.

Yet another major concern is that RDA was designed to operate in an information environment that doesn’t yet exist. The Semantic Web is still in development, and some have questioned whether it will accomplish all that is hoped.³⁸ A related concern is that no ILS yet exists that will exploit all the capabilities of RDA.³⁹

An alternative to RDA, the Cooperative Cataloging Rules, was launched in 2009. It is based in the cataloging community and is intended to allow current cataloging rules to be maintained and updated by catalogers who choose not to adopt RDA.⁴⁰

ADVANTAGES OF RDA

RDA was designed with users in mind. Because it incorporates the FRBR principles, RDA collocates different versions and editions of the same work. Users will better see the differences

between similar resources, thus will navigate through library resources more easily. RDA eliminates confusing practices such as listing only the first author of works with more than three authors and the use of Latin abbreviations. Another advantage is RDA’s potential for enabling library information to be “understood” by computers, which will allow a much richer discovery experience for users.⁴¹

RDA is a strong code because it is based on principles and has continuity with the past, especially with AACR2. The principles of AACR2 were not abandoned but built upon in the development of RDA. RDA was designed to create records that will coexist with AACR2 records in library catalogs.⁴²

RDA has addressed concerns with AACR2 such as its emphasis on print materials and practices that are based in a card environment. It is flexible and will accommodate metadata from nonlibrary groups that create metadata, such as the archives and museum communities. Finally, it looks forward to a future in which library data will escape from the confines of the catalog and emerge onto the web.⁴³

TIMELINE

RDA was published as RDA Toolkit in June 2010.⁴⁴ From October to December 2010, the United States national libraries and other selected libraries created test records using RDA. Since January 2011, the U.S. RDA Test Coordination Committee has been analyzing the results of the test and preparing a report to the upper management of the three national libraries. The report is expected to be shared with the U.S. library community sometime after March 31, 2011.⁴⁵

WHO WILL ADOPT

There has been much discussion on cataloging e-mail lists about the implementation of RDA. The three U.S. national libraries are waiting for the report to make a decision about implementing RDA.⁴⁶ However, some catalogers think that because the Library of Congress has invested so much in the development of RDA it will almost certainly be adopted at the national libraries.⁴⁷ If that happens, most large libraries will probably follow suit.⁴⁸

At least one library announced that it would implement RDA at the beginning of the test period (October 1, 2010) and would only cease implementation if the national libraries pull back from RDA after the test report is published.⁴⁹

On the other hand, school libraries, special libraries, and small public libraries may find themselves “have-nots” when it comes to RDA.⁵⁰ The cost of RDA Toolkit and the expense of training may exclude libraries with small budgets from adopting RDA.⁵¹

CONCLUSION

RDA will probably be adopted by large libraries. However, many libraries will continue to use AACR2 for the foreseeable

future. Widespread implementation is likely to be gradual and take several years. Where RDA is adopted, catalog records will look different in small but noticeable ways.

RDA was developed in response to changes in cataloging, librarianship, and the wider world. While RDA anticipates a new world of library data in which library information is linked and defined in ways that allow machines to “understand” that information, the adoption of a new cataloging code is only one small step toward that goal. The Semantic Web, better ILSs, and perhaps a replacement for MARC must be developed before library data will work the way the creators of RDA envision.

References

- Karen Coyle and Diane Hillman, “Resource Description and Access (RDA): Cataloging Rules for the 20th Century,” *D-Lib Magazine* (Jan./Feb. 2007), www.dlib.org/dlib/january07/coyle/01coyle.html (accessed Oct. 25, 2010).
- Joint Steering Committee for Development of RDA, “RDA: Resource Description and Access,” www.rda-jsc.org/docs/rdappjuly2005.pdf (accessed Oct. 20, 2010).
- ODLIS: Online Dictionary for Library and Information Science, s.v. “cooperative cataloging,” <http://lu.com/odlis/search.cfm> (accessed Oct. 31, 2010).
- Barbara B. Tillett, “Catalog It Once for All: A History of Cooperative Cataloging in the United States Prior to 1967,” in *Cooperative Cataloging: Past, Present, and Future*, ed. Barry B. Baker (New York: Haworth, 1993): 27–29.
- Michael Gorman, “Technical Services: Past, Present, Future” (presentation, Association of Library and Information Science Education annual conference, Boston, Mass., Jan. 15, 2010).
- Joint Steering Committee for Development of RDA, “A Brief History of AACR,” www.rda-jsc.org/history.html (accessed Oct. 5, 2010).
- Gorman, “Technical Services: Past, Present, Future.”
- Arlene G. Taylor, *Wynar's Introduction to Cataloging and Classification*, rev. 9th ed. (Westport, Conn.: Libraries Unlimited, 2004): 9.
- Peter R. Lewis, preface to *Anglo-American Cataloging Rules, Second Edition* (Chicago: ALA, 1978).
- Michael Gorman, *The Enduring Library* (Chicago: ALA, 2003): 8.
- Rick Block, “RDA: Cataloging Code for the 21st Century?” (presentation, Columbia University, New York, N.Y., Dec. 9, 2009).
- Robert Boissy, “Robert Boissy of Springer on the Future of Ebooks and Libraries,” *Library Journal* (Aug. 12, 2010), www.libraryjournal.com/lj/articlereview/886298-457/robert_boissy_of_springer_on.html.csp (accessed Sept. 15, 2010).
- Coyle and Hillman, “Resource Description and Access (RDA).”
- Ibid.*
- Chris Oliver, *Introducing RDA: A Guide to the Basics* (Chicago: ALA, 2010): 2–3.
- Ibid.*, 42–43.
- Ibid.*, 43.
- Ibid.*, 95.
- International Federation of Library Associations and Institutions, *Functional Requirements for Bibliographic Records*, final report of the IFLA Study Group on the Functional Requirements for Bibliographic Records (The Hague, Netherlands: IFLA, 1997).
- Joint Steering Committee for Development of RDA, “RDA: Resource Description and Access.”
- Pat Riva, “Introducing Functional Requirements for Bibliographic Records and Related IFLA Developments,” *ASIS&T Bulletin* (Aug./Sept. 2007), www.asis.org/Bulletin/Aug-07/riva.html (accessed Nov. 27, 2010).
- Barbara Tillett, *What is FRBR?: A Conceptual Model for the Bibliographic Universe* (Washington, D.C.: Library of Congress Cataloging Distribution Service, rev. 2007): 5.
- Peter Pin-Shan Chen, “The Entity-Relationship Model: Toward a Unified View of Data,” *ACM Transactions on Database Systems* 1, no. 1 (Mar. 1976): 9–36.
- Oliver, *Introducing RDA*, 22.
- International Federation of Library Associations and Institutions, *Functional Requirements for Bibliographic Records*.
- Ibid.*
- Karen Coyle, *Understanding the Semantic Web: Bibliographic Data and Metadata* (Chicago: ALA Techsource, 2010): 10–11.
- Ibid.*, 8–9.
- Karen Coyle, *RDA Vocabularies for a Twenty-First-Century Data Environment* (Chicago: ALA Techsource, 2010): 8.
- W3C, “Who’s Who at the World Wide Web Consortium,” www.w3.org/People/all#timbl (accessed Nov. 1, 2010).
- Tim Berners-Lee, James Hendler, and Ora Lassila, “The Semantic Web: A New Form of Web Content That Is Meaningful to Computers Will Unleash a Revolution of New Possibilities,” *Scientific American* 284, no. 5 (May 2001): 34–43.
- Joint Steering Committee for Development of RDA, “A New Organization for RDA,” www.rda-jsc.org/rda-new-org.html (accessed Oct. 2, 2010).
- Stefan Gradmann, “rdfs:frbr—Towards an Implementation Model for Library Catalogs using Semantic Web Technology,” in *Functional Requirements for Bibliographic Records (FRBR): Hype or Cure-All?* ed. Patrick Le Boeuf (Binghamton, N.Y.: Haworth, 2005): 64–69.
- Joint Steering Committee for Development of RDA, “RDA: Resource Description and Access.”
- Adam Schiff, “Changes from AACR2 to RDA: A Comparison of Examples,” (presentation, British Columbia Library Association conference, Penticton, B.C., Canada, Apr. 27, 2010).
- Gretchen L. Hoffman, “Meeting Users’ Needs in Cataloging: What is the Right Thing to Do?” *Cataloging & Classification Quarterly* 47 (2009): 631–41.
- RDA Toolkit: Resource Description and Access, “RDA Toolkit Pricing,” www.rdatoolkit.org/pricing (accessed Sept. 4, 2010).
- Catherine C. Marshall and Frank M. Shipman, “Which Semantic Web?” (paper presented at Association for Computing Machinery 14th Conference on Hypertext and Hypermedia, Nottingham, England, Aug. 2003).
- Susan Berdinka, “Some Thoughts about FRBR—It is a Beautiful Thing,” *Thoughts on Technical Librarianship* (Oct. 30, 2010), <http://susanrb.wordpress.com/2010/10/30/some-thoughts-about-frbr%E2%80%94it-is-a-beautiful-thing> (accessed Nov. 27, 2010).
- Cooperative Cataloging Rules Blog, “Official Announcement,” <http://coopcatwiki.blogspot.com/2009/10/official-announcement.html> (accessed Oct. 31, 2010).
- Oliver, *Introducing RDA: A Guide to the Basics*, 97–103.
- Ibid.*, 97–98.
- Ibid.*, 95–99.
- Joint Steering Committee for Development of RDA, “RDA: Resource Description and Access Published,” www.rda-jsc.org/rdapublish.html (accessed Oct. 15, 2010).
- Testing Resource Description and Access (RDA), “Tentative Timeline for U.S. National Libraries RDA Test,” www.loc.gov/bibliographic-future/rda/timeline.html (accessed Nov. 1, 2010).
- Testing Resource Description and Access (RDA), “About the U.S. National Libraries Test Plan for RDA,” www.loc.gov/bibliographic-future/rda/about.html (accessed Nov. 1, 2010).
- Kathleen Lamantia, “Re: Testing institutions post-RDA test,” online posting, Sept. 9, 2010, RDA-L, RDA-L@infoserv.nlc-bnc.ca; Christopher Cronin, “Re: Testing institutions post-RDA test,” online posting, Sept. 9, 2010, RDA-L, RDA-L@infoserv.nlc-bnc.ca

ACCIDENTAL TECHNOLOGIST

- (accessed Nov. 1, 2010).
48. Laurence S. Creider, "Re: RDA a 'done deal' at ALA," online posting, May 19, 2010, AUTOCAT, autocat@listserv.syr.edu.
 49. Charles Pennell, "Re: RDA discussion kick off," online posting, Sept. 14, 2010, ALCTS e-forum, alcts-eforum@ala.org.
 50. Scott Piepenburg, "Re: RDA a 'done deal' at ALA," online posting, May 19, 2010, AUTOCAT, autocat@listserv.syr.edu.
 51. Jerri Swinehart, "Re: RDA pricing," online posting, Jan. 25, 2010, AUTOCAT, autocat@listserv.syr.edu; Lisa Reynolds, "Re: RDA pricing," online posting, Jan. 21, 2010, AUTOCAT, autocat@listserv.syr.edu.