INTRODUCING
RDA
A GUIDE TO THE BASICS

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WHAT IS RDA?

RDA, Resource Description and Access, is the new cataloging standard that replaces the Anglo-American Cataloguing Rules, 2nd edition (AACR2). Though it has strong links to AACR2, RDA is quite different because it is based on a theoretical framework, it is designed for the digital environment, and it has a broader scope than AACR2.

BASED ON A THEORETICAL FRAMEWORK

Like AACR, RDA consists of a set of practical instructions. However, RDA is based on a theoretical framework that defines the shape, structure, and content of the new standard. The key to understanding RDA is its alignment with the two conceptual models, Functional Requirements for Bibliographic Records (FRBR) and Functional Requirements for Authority Data (FRAD). FRAD is an extension of the FRBR model. The models are a way of understanding the bibliographic universe. They identify the tasks that users need to accomplish during the process of resource discovery and demonstrate how different types of bibliographic and authority data support the successful accomplishment of these tasks. FRBR and FRAD provide a theoretical and logically coherent basis on which to build an improved resource-discovery experience for the user.

The opening words of RDA state the overall purpose and scope as providing “a set of guidelines and instructions on formulating data to support resource discovery” (0.0). The phrase “to support resource discovery” conveys a key message about the nature of RDA: this is a standard designed to focus attention on the user and on the tasks that the user carries out in the process of resource discovery. The purpose of recording data is to support the user tasks.

Every instruction in RDA relates back to the user and to the tasks that the user wishes to accomplish. These user tasks have their origin in the FRBR and FRAD models, and are introduced immediately, at the very beginning of RDA (0.0):
RDA takes as its starting point the theoretical framework expressed in the FRBR and FRAD models. This theoretical framework constitutes a new way of thinking about bibliographic and authority data. This change in approach is reflected throughout the standard, in the organization and structure of the instructions and in the content of the instructions.

DESIGNED FOR THE DIGITAL ENVIRONMENT

The changes in the cataloging environment between the 1960s and 2000s have been enormous, not only because of the rapid proliferation of new types of publications, new forms of content, and new carriers for content, but also because the move into a networked online environment has qualitatively changed the way the library and its users go about their work. RDA is a standard designed for the digital environment.

RDA’s purpose is to support the production of robust, or “well-formed,”\(^2\) data that can be managed using both current technologies and newly emerging database structures and technologies of the future. RDA is a “content” standard. RDA answers the question, What data should I record and how should I record it? RDA defines the elements required for description and access and gives instructions on formulating the data that is recorded in each element. Data is parsed or segmented into clearly defined elements. The elements may seem choppy after the paragraph style of the ISBDs,\(^3\) but each element is unambiguously defined and contains one particular kind of data. This way of recording data in a set of elements means that RDA is not tied to a single encoding schema or presentation style. RDA data can be encoded using existing schema, such as MARC 21, Dublin Core, MODS,\(^4\) and can also be mapped to other schema, current or future ones. At first release, RDA data can be encoded, stored, and transmitted using existing technology and databases, as MARC records in traditional library catalogs. However, RDA data is also designed for use in the networked environment of the Web and in new types of database structures. RDA data can be used as the basis for a metadata element set that makes data visible and usable in a Web environment.

RDA can be used for the description of both traditional and nontraditional resources, analog and digital, within and beyond the library. A key feature of RDA is the way it is designed to “provide a consistent, flexible, and extensible framework for both the technical and content description of all types of resources and all types of content.”\(^5\) It provides the principles and instructions to record data about resources that are currently known and resources that have yet to be developed. A major stumbling block for AACR2 was the description of new types of resources. AACR was originally developed as a cataloging code for print books and journals and other paper-based documents. Although rules for other media were grafted into the code, there was never a cohesive

<table>
<thead>
<tr>
<th>Tasks That Use Bibliographic Data</th>
<th>Tasks That Use Authority Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>find</td>
<td>find</td>
</tr>
<tr>
<td>identify</td>
<td>identify</td>
</tr>
<tr>
<td>select</td>
<td>clarify</td>
</tr>
<tr>
<td>obtain</td>
<td>understand</td>
</tr>
</tbody>
</table>

\(^2\)http://www.alastore.ala.org/detail.aspx?ID=2897
and logically consistent approach to the description of content, media, and carrier. This limitation made it difficult to extend AACR2 rules for the description of new types of resources, notably electronic resources. RDA provides an extensible framework for the description of all types of resources.

For the cataloging community, RDA marks a significant change because it is a standard designed to be used as a Web tool. The standard is delivered primarily as a Web document, within the RDA Toolkit. The content of RDA can be accessed in many ways, to suit different learning styles and different requirements. Some catalogers may choose to start by browsing RDA's table of contents because it provides a good sense of the intellectual organization of the standard and the way in which it is aligned with the FRBR and FRAD conceptual models. Others may prefer to start with the entity relationship diagram (ERD) that gives a visual outline of RDA's content. Others may want to start with one of the practical procedure documents, called workflows. Workflows focus on the instructions that relate to one specific procedure. The Toolkit also includes mappings that indicate how to encode RDA elements with different encoding schema. The workflows and mappings are tools that guide the cataloger in the application of the standard. Libraries can also share workflows and mappings, and customize them, incorporating their local policies and procedures and storing them as part of the Toolkit. The Toolkit includes multiple ways to access and use the instructions and includes tools that support the efficient integration of RDA into daily work. The Toolkit aims to support an efficient implementation of RDA.

EXPANDED SCOPE

RDA is not just for libraries. RDA was designed by the library community for its use, but one of the goals was that RDA should also “be capable of adaptation to meet the specific needs of other communities.” One of the features noted above was the flexible and extensible framework that allows for the description of all types of resources, whether traditional library resources, or resources from other cultural heritage communities, such as archives, museums, or digital repositories. The possibility of using RDA in a broader range of contexts is also evident in its definition as a “content” standard, and its adaptability for use in an international context.

Though it comes out of the library milieu, RDA was designed with an awareness of other metadata communities and their resource description standards—communities such as archives, museums, and publishers. The boundaries between metadata communities are meaningless to a user who searches a networked, online environment. By making RDA a content standard, it is possible for other metadata communities to consider using or overlapping with RDA. Data can be stored and transmitted using a variety of encoding schema, including schemas in use within other metadata communities. Likewise, by staying away from instructions about the presentation of the data, the door is opened to a potentially wider community of users, using RDA elements in new and different applications. The greater the compatibility of data between metadata communities, the greater the benefits for the user.
RDA was designed for use in an international context. RDA is the product of international cooperation between the four author countries: Australia, Canada, Great Britain, and the United States. However, “use in an international context” means the potential to be used by many countries around the world, not just by the four author countries. RDA purposely sheds the Anglo-American perspective of AACR. Instructions have been adjusted so that they can be applied by communities that use different languages, scripts, numbering systems, calendars, or measurement units. Also, during the development process, the Joint Steering Committee for Development of RDA, the body responsible for the content of the standard, invited comments from international organizations and the national libraries and national cataloging committees of other countries, countries that use AACR2 and also countries that have their own national cataloging codes. This dialogue at the international level has contributed to achieving the goal of making RDA usable in an international context.

RELATIONSHIP TO AACR2
There are significant differences between RDA and AACR2, but important links between the two standards remain. RDA builds on the foundation of AACR. Many RDA instructions are derived from AACR2. There was also a conscious effort to maintain compatibility with the legacy data of AACR2 records. RDA data can be encoded with the same MARC 21 standard used for AACR2 records. In the early years of RDA implementation, RDA records will be stored and searched in databases and catalogs that are still predominantly composed of AACR2 records.

Much of what makes RDA new and different are the parts that gear it to function effectively within the digital environment, but, at the same time, there is a constant awareness that the standard must also function as a bridge between the past and future environments, and that not all libraries will progress at the same pace into new environments.

IMPACT
RDA is a key step in the improvement of resource discovery because it guides the recording of data. The production of well-formed data is a vital piece of the infrastructure to support search engines and data displays. RDA data alone will not improve navigation and display because the data must be used appropriately by well-designed search engines and search interfaces. Nevertheless, the recording of clear, unambiguous data is a required step in the improvement of resource discovery.

RDA is designed to produce data that can be stored, searched, and retrieved in traditional catalogs. RDA data is also designed for use in the Web environment and with newly emerging database technologies. It positions the library community to take advantage of the networked online environment, and to make library data widely visible, discoverable, and usable.
Implementing RDA will have an immediate impact on catalogers, as well as on library system designers and administrators. Increasingly, as the volume of RDA data grows, it will have an impact on those who use bibliographic and authority data in library catalogs and then in applications on the Web. This book aims to describe some of the basic features of the standard to help with implementation planning and preparation.

NOTES


2. Well-formed data: “well-formed, i.e., instructions are provided on how to record the values of elements, controlled vocabularies are used where appropriate, and the overall structure is governed by a formal model.” Joint Steering Committee for Development of RDA, “RDA Scope and Structure” (JSC/RDA/Scope/Rev/4; July 1, 2009), www.rda-jsc.org/docs/5rda-scoperev4.pdf.

3. International Standard Bibliographic Description: a standard developed under the auspices of the International Federation of Library Associations and Institutions (IFLA) to promote consistency when sharing bibliographic data. See www.ifla.org/en/about-the-isbd-review-group/.

4. For more information about MARC 21, see the MARC Standards website of the Library of Congress, Network Development and MARC Standards Office: www.loc.gov/marc/. For more information about Dublin Core, see the website of the Dublin Core Metadata Initiative: http://dublincore.org. For more information about MODS, the Metadata Object Description Schema, see the MODS website of the Library of Congress Network Development and MARC Standards Office: www.loc.gov/standards/mods/.


7. Ibid.
RDA is an application of the FRBR and FRAD conceptual models. RDA itself is not a conceptual model, but rather a set of practical instructions based on the FRBR and FRAD models. These models have shaped the structure of RDA and influenced the language used in the instructions. Some background knowledge of these models helps to explain the nature of RDA and how it differs from AACR2.

Browsing through the table of contents of RDA, it is immediately apparent that the structure and language of RDA are different from AACR2:

- Section 1—Recording attributes of manifestation and item
- Section 2—Recording attributes of work and expression
- Section 3—Recording attributes of person, family, and corporate body
- Section 4—Recording attributes of concept, object, event, and place
- Section 5—Recording primary relationships
- Section 6—Recording relationships to persons, families, and corporate bodies associated with a resource
- Section 7—Recording the subject of a work
- Section 8—Recording relationships between works, expressions, manifestations, and items
- Section 9—Recording relationships between persons, families, and corporate bodies
- Section 10—Recording relationships between concepts, objects, events, and places

Where does this vocabulary come from? Where do the concepts and categories come from? They come from the FRBR and FRAD conceptual models. The following section gives a brief overview of the models and an introduction to the models’ concepts and vocabulary.
OVERVIEW OF FRBR AND FRAD

Origins of FRBR and FRAD

The FRBR conceptual model has its origin in the report of a group appointed by IFLA, the International Federation of Library Associations and Institutions. In the early 1990s, the IFLA Cataloguing Section appointed a study group to examine the functional requirements of bibliographic records. This group had representation from many different countries. They carried out an extensive study over several years that also included a period for worldwide review. In 1997, the final report was approved by IFLA’s Standing Committee on Cataloguing and published the subsequent year with the title *Functional Requirements for Bibliographic Records: Final Report.*

The final report contains the description of the entity relationship model that the study group developed to analyze bibliographic records and make their recommendations (FRBR 2.1).

The study has two primary objectives. The first is to provide a clearly defined, structured framework for relating the data that are recorded in bibliographic records to the needs of the users of those records. The second objective is to recommend a basic level of functionality for records created by national bibliographic agencies.

The development of a framework or model was one of two objectives, but it is the model that has continued to be discussed and applied. The international cataloging community quickly recognized the validity of the model. The model became the common, shared language for discussions of cataloging and cataloging revision, and the basis for new research and applications. IFLA decided to appoint new groups to extend the FRBR model to include authority data (Functional Requirements for Authority Data, FRAD), and subject authority data (Functional Requirements for Subject Authority Data, FRSAD). The Working Group on Functional Requirements and Numbering of Authority Records (FRANAR) developed the FRAD model, and their final report was published in 2009. FRAD is in the process of being developed, with a first draft issued in 2008, and a second draft in 2009. IFLA also decided to establish the FRBR Review Group to review and maintain the FRBR family of conceptual models and to encourage their application.

Focus on the User

The FRBR and FRAD models are entity relationship models. They were developed using a similar approach and methodology. Users and their needs are the starting point for both models. The first step is to identify “key objects that are of interest to users of information in a particular domain” (FRBR 2.3 and FRAD 3.1). The models map out the relationship between the data that is recorded—in either bibliographic or authority records—and the needs of those who use that data.

The needs of the user are defined in terms of user tasks. The FRBR user tasks are “generic tasks that are performed by users when searching and making use of national
bibliographies and library catalogues” (FRBR 2.2). FRBR does not make a distinction between the end user and the library or information worker who assists the end user. The FRAD user tasks also address the needs of users, but in this case, two classes of users are identified: the end user and those who assist the end user by creating and maintaining authority data. The end user is listed as the second category (FRAD 6):

- authority data creators who create and maintain authority files;
- users who use authority information either through direct access to authority files or indirectly through the controlled access points (authorized forms, variant forms of names/references, etc.) in catalogues, national bibliographies, other similar databases, etc.

The FRBR and FRAD models look at data within the context of large catalogs or databases. The user tasks are tasks associated with navigating through large amounts of data in order to discover and obtain the required resource. There are four user tasks associated with the use of bibliographic data, and four tasks for authority data. Since the tasks address the use of two different types of data, the tasks are not identical, but they do overlap.

The four user tasks associated with bibliographic data, as defined by the FRBR Study Group (FRBR 6.1), are

- **Find** to *find* entities that correspond to the user’s stated search criteria (i.e., to locate either a single entity or a set of entities in a file or database as the result of a search using an attribute or relationship of the entity);
- **Identify** to *identify* an entity (i.e., to confirm that the entity described corresponds to the entity sought, or to distinguish between two or more entities with similar characteristics);
- **Select** to *select* an entity that is appropriate to the user’s needs (i.e., to choose an entity that meets the user’s requirements with respect to content, physical format, etc., or to reject an entity as being inappropriate to the user’s needs);
- **Obtain** to acquire or *obtain* access to the entity described (i.e., to acquire an entity through purchase, loan, etc., or to access an entity electronically through an online connection to a remote computer).

These are recognizable tasks that users perform. For example, if a user needs to read Defoe's *Robinson Crusoe*, he starts a search in an online catalog with a search term, such as the name of the author or the title. He starts by trying to find something that matches his search term. If he has input the title, *Robinson Crusoe*, he looks at the results to identify what matches his query. If it’s only one result, is it what he wanted? Other resources
may have the same title, but he does not want adaptations, or parodies, or criticisms; he wants the original text by Defoe. If there are many results, then he identifies the ones that correspond to what he wants. Once he has identified one or several manifestations that contain the original text of *Robinson Crusoe*, he needs to select the one that fits his needs. Supposing that he is a student completing a term paper at a time when the library building is closed, he may only be interested in electronic books. Once he has selected what he wants, the last step is actually using the sought resource, either by obtaining it on a shelf or, in the case of electronic resources, connecting to it and accessing it online.

The four user tasks associated with authority data, as defined by the FRANAR Working Group (FRAD 6), are as follows:

- **Find**: Find an entity or set of entities corresponding to stated criteria (i.e., to find either a single entity or a set of entities using an attribute or combination of attributes or a relationship of the entity as the search criteria); or to explore the universe of bibliographic entities using those attributes and relationships.

- **Identify**: Identify an entity (i.e., to confirm that the entity represented corresponds to the entity sought, to distinguish between two or more entities with similar characteristics) or to validate the form of name to be used as a controlled access point.

- **Contextualize**: Place a person, corporate body, work, etc. in context; clarify the relationship between two or more persons, corporate bodies, works, etc.; or clarify the relationship between a person, corporate body, etc. and a name by which that person, corporate body, etc. is known (e.g., name used in religion versus secular name).

- **Justify**: Document the authority data creator’s reason for choosing the name or form of name on which a controlled access point is based.

The user tasks “find” and “identify” are common to both models, and their definitions are similar, except in FRAD they are tasks involving authority data. Again, the tasks are frequently performed and recognizable. For example, the user starts by looking for an author, using the author’s name. The user may simply want to retrieve everything associated with the author’s name, or may use that as a starting point to navigate to other related resources, to other persons related to the author, etc. If there were three or four different authors with the name Daniel Defoe, the user would need to identify which one is the Daniel Defoe he needs. From a cataloger’s perspective, to identify is to validate the form of the name. To contextualize and justify are not universal user tasks; they are tasks carried out by those who create authority data for the benefit of the end user. To contextualize is to clarify relationships, for example, the relationship between...
earlier and later names of a corporate body: the National Library of Canada and the National Archives of Canada merged in 2003 to form Library and Archives Canada. To justify is to record the reasons that justify choosing to use the name Daniel Defoe or Library and Archives Canada in controlled access points.

The FRBR and FRAD conceptual models are based on a detailed analysis of bibliographic and authority data. They set forth a framework for understanding the bibliographic universe. The models shift the cataloging world’s perspective because they look at bibliographic data from the user’s perspective. The focus is not on the cataloger creating a single record, but on the user seeking that record within the context of a large catalog or database. Both activities continue to coexist, but the defining perspective has changed. The data that is analyzed is data of interest to the user because it enables the user to accomplish one of the basic user tasks. The models promote a view of the bibliographic universe where the focus is on what is important to the user. Cataloging principles and cataloging codes have always aimed to serve the needs of the user, sometimes explicitly stating this goal, sometimes implying it. For example, Charles A. Cutter, in 1876, did explicitly state, in his *Rules for a Printed Dictionary Catalog*, that the objective of the catalog was to help the user: “to enable a person to find a book . . . to show what the library has . . . and to assist in the choice of a book.” S. R. Ranganathan, with his five laws of library science first published in 1931, also underlined the basic principle that we organize information for the benefit of the user: “books are for use; every person his or her book; every book its reader; save the time of the reader; a library is a growing organism.” The FRBR and FRAD models continue in this tradition of focusing on the user, but they go further by providing a detailed analysis of the way in which each attribute and relationship that is recorded in a bibliographic or authority record is relevant and important to the user.

**FRBR Entities, Attributes, and Relationships**

**FRBR Entities**

There are three components in an entity relationship model: entities, attributes or characteristics of the entities, and relationships between the entities.

The FRBR entities are the objects of interest to users of bibliographic data: the products of intellectual or artistic creation; the persons or corporate bodies responsible for playing some role with respect to those products; and the subjects of those products of intellectual and artistic creation.

The FRBR model identifies three groups of entities:

- **Group 1 entities:** products of intellectual or artistic endeavour
- **entities:** work, expression, manifestation, item

Group 2 entities: those responsible for the intellectual or artistic content, the physical production and dissemination, or the custodianship of the entities in the first group

entities: persons, corporate bodies

Group 3 entities: subjects

entities: concept, object, event, place

+ all the entities in groups 1 and 2

The group 2 and 3 entities are fairly self-explanatory. The group 1 entities present a challenge because they are both straightforward and puzzling. The terms *work*, *manifestation*, and *item* are familiar terms. The FRBR model uses these terms and precisely defines the scope and meaning of each term. The model also defines the entity *expression*, adding an important layer between work and manifestation.

The group 1 entities do not exist as separate, tangible objects. The four entities are aspects that correspond to a user’s interests in the products of intellectual and artistic creation (FRBR 3.1.1). The definition of each entity is inextricably intertwined with the definition of the other group 1 entities:

work: a distinct intellectual or artistic creation

expression: the intellectual or artistic realization of a work in the form of alpha-numeric, musical, or choreographic notation, sound, image, object, movement, etc., or any combination of such forms

manifestation: the physical embodiment of an expression of a work

item: a single exemplar of a manifestation

The definitions of the group 1 entities demonstrate the primary relationships that exist between these four entities. Figure 3.1 (from section 3.1.1 of the FRBR report) illustrates these relationships. The diagram looks like a simple hierarchy, but the arrows are important because they indicate that there is a network of relationships. Some relationships are one to many, some are many to many. One work can be realized through one or more expressions. But an expression realizes only one work. An expression can be embodied in many different manifestations, and a manifestation can be the embodiment of one or more expressions. A manifestation is usually exemplified by many items, though it can also be exemplified by a single item. An item can only be the exemplar of one manifestation.

One can use a real example, such as Daniel Defoe’s *Robinson Crusoe*, to illustrate the relationships between the group 1 entities, as shown in figure 3.2. The group 1 entities do not exist separately: the copy of *Robinson Crusoe* that I am reading is an item, a single physical copy that belongs to McGill University and carries the barcode number 31025693698. At the same time, it is also the exemplar of a particular manifestation,
i.e., the Oxford University Press manifestation published in 2007. That manifestation embodies a particular expression, the original English-language text, and that alphabetic expression was the first realization of Defoe’s work. The book in my hand has all four aspects: item, manifestation, expression, and work.

The group 2 entities are the entities that are responsible for the creation of a work, realization of an expression, production or dissemination of a manifestation, or ownership of an item. The FRBR model identifies two group 2 entities: persons and corporate bodies. The FRAD model, which will be discussed in more detail below, takes...
as its starting point the set of bibliographic entities defined in the FRBR model. The FRAD model makes one modification: it expands the group 2 entities to include family as well. Descriptions of the FRBR model now often assume the FRAD definition of group 2 entities: person, family, and corporate body. The group 3 entities are the subjects of the group 1 entities. This group includes four entities that are specific to this group: concept, object, event, and place. It also includes all the group 1 and group 2 entities because these too can be the subjects of works. An event, such as the Battle of Hastings, can be the subject of a work. A work, such as Defoe's *Robinson Crusoe*, can also be the subject of another work.

### FRBR Attributes

Each entity has a set of characteristics or attributes. The entity is a key object of interest to the user. It is an abstract organizing category around which to cluster certain types of data. The attributes of an entity are the data that are used to find, identify, select, and obtain a resource. Attributes can be “inherent” or “externally imputed.” Inherent attributes are attributes that can be discovered by directly examining the entity itself, such as extent, the title found on the title page of a printed book, type of content, date of publication, etc. Externally imputed attributes are attributes that come from outside the entity, such as an assigned identifier. Externally imputed attributes often require using a reference source—for example, consulting a thematic index to find the thematic index number assigned to a musical composition (FRBR 4.1). Examples of attributes for group 1 entities are shown in figure 3.3. Some attributes have widespread applicability, such as

<table>
<thead>
<tr>
<th>Attributes of an item</th>
<th>item identifier (e.g., barcode number)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>provenance of the item</td>
</tr>
<tr>
<td></td>
<td>marks/inscriptions</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td>Attributes of a manifestation</td>
<td>publisher/distributor</td>
</tr>
<tr>
<td></td>
<td>date of publication/distribution</td>
</tr>
<tr>
<td></td>
<td>form of carrier</td>
</tr>
<tr>
<td></td>
<td>extent of the carrier</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td>Attributes of an expression</td>
<td>form of expression</td>
</tr>
<tr>
<td></td>
<td>language of expression</td>
</tr>
<tr>
<td></td>
<td>type of score (musical notation)</td>
</tr>
<tr>
<td></td>
<td>scale (cartographic image/object)</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td>Attributes of a work</td>
<td>form of work</td>
</tr>
<tr>
<td></td>
<td>medium of performance (musical work)</td>
</tr>
<tr>
<td></td>
<td>coordinates (cartographic work)</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
</tr>
</tbody>
</table>

**FIGURE 3.3**

Examples of attributes for group 1 entities
Other attributes only apply to certain types of resources, such as scale and projection for cartographic resources.

Group 2 and 3 entities also have their particular attributes. In the FRBR model, the attributes of person are names, dates, title (i.e., title as a term of address). The group 3 entities each have the attribute term, such as “economics” for concept or “ships” for object.

**FRBR Relationships**

An essential part of the FRBR model is the identification and mapping of relationships between the entities. Relationships play a very important role in assisting the user to complete the tasks of finding, identifying, selecting, and obtaining and are the key to navigating through the bibliographic universe. They carry information about the nature of the links that exist between entities, enable collocation, and provide pathways to improve resource discovery. By focusing attention on bibliographic relationships and relating each relationship to the user tasks, the FRBR model emphasizes the role that bibliographic relationships play when a user navigates a large catalog or database.

The FRBR model looks at the relationships between the groups of entities. For example, there are the familiar relationships between group 1 and 2 entities:

<table>
<thead>
<tr>
<th>Group 1 entity</th>
<th>Relationship</th>
<th>Group 2 entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>work</td>
<td>created by</td>
<td>person</td>
</tr>
<tr>
<td>expression</td>
<td>translated by</td>
<td>person</td>
</tr>
<tr>
<td>manifestation</td>
<td>published by</td>
<td>corporate body</td>
</tr>
<tr>
<td>item</td>
<td>owned by</td>
<td>family</td>
</tr>
</tbody>
</table>

Likewise, there are subject relationships. Subject relationships can relate any group 1, 2, or 3 entity to a work.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Relationship</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>event (group 3)</td>
<td>subject of</td>
<td>work</td>
</tr>
<tr>
<td>person (group 2)</td>
<td>subject of</td>
<td>work</td>
</tr>
<tr>
<td>work A (group 1)</td>
<td>subject of</td>
<td>work B</td>
</tr>
</tbody>
</table>

The FRBR model also focuses attention on the relationships between the group 1 entities. The primary (or logical relationships at a high level of generalization) are the relationships between one work and its expressions, manifestations, and items. The primary relationships between group 1 entities were already evident in the definition of the group 1 entities: an item is the exemplar of a manifestation, which is the embodiment of an expression, which is the realization of a work.\(^8\)
A work is often realized in only one expression. But works that have formed an important part of our cultural and intellectual history are usually realized in many expressions. A work, such as *Robinson Crusoe*, has many expressions. Some expressions are translations of the original English text into other languages, such as French and German translations. Some expressions may be realizations into a different form of expression—for example, a spoken word version instead of one in alpha-numeric notation. Each expression may be published in several manifestations, and each manifestation usually has a number of identical exemplars of the manifestation.

Even if a work has only one expression, it is still important to identify both the work and expression entities. Expression is an important entity because it adds a degree of precision in the delineation of similarities and differences between the content of resources. Manifestations of the same expression embody identical content, though the manifestations are different: for example, identical content but different dates of publication, different extent, etc. Manifestations of different expressions are still related to each other because they are related to the same work, but they embody slightly different content because they embody different realizations of the work. For example, revised editions have slightly different content. They are realizations of the same work, but the expressions are not identical. Translations are realizations of the same content, but every word is different.

Work and expression are entities that pertain to content. By having four group 1 entities, the FRBR model provides a way to be more precise about the similarities and differences in content and the degree of relationship that exists between resources that embody the same work. For example, *Robinson Crusoe* can be expressed in alpha-numeric notation or in spoken word. These are two expressions of the same work because the content is the same, even though it is realized using different forms of expression. However, a screenplay or a film adaptation would be a related work, different from the original work, but with a relationship to the original. The screenplay would have a relationship of transformation. The film would have a relationship of adaptation.

This added degree of precision is important for the fulfillment of user tasks, especially the tasks of identifying and selecting the appropriate resource. The work and expression entities enable the collocation of content that is the same, and the identification of content that realizes the same work but may be a slightly different realization. A user can be led to identical content in different manifestations, and can also be shown the same content available in different realizations or expressions.

FRBR also maps out the relationships between group 1 entities of different works. There are several types of whole-part relationships because the whole-part relationship can happen at the work, expression, manifestation, or item level. There are also a large number of relationships between different works, relationships such as imitation, adaptation, transformation, supplement, successor, etc.
These bibliographic relationships are not new. However, the level of information recorded about bibliographic relationships and about the exact nature of those relationships has varied over time and in different cataloging contexts. The FRBR model focuses attention on the importance of recording the existence of a relationship, and also on the importance of identifying the exact nature of the relationship. Clarifying bibliographic relationships is key to the completion of user tasks, especially in the current context of large catalogs and databases.

FRAD Entities, Attributes, and Relationships

FRAD Entities

The FRAD model extends the FRBR model. FRAD includes all the FRBR entities and has additional entities specific to authority control. The entities defined in the FRBR model—the group 1, 2, and 3 entities—are collectively called the “bibliographic entities.” The entities specific to FRAD are name, identifier, controlled access point, rules, and agency. The user of a catalog may be less directly aware of the entities associated with authority control, yet these entities are important because they support collocation and navigation.

FRAD also expands on the FRBR model by adding family to the group 2 entities and introducing more granularity. A simplified version (based on figure 1 in FRAD section 3.3) is shown in figure 3.4. Bibliographic entities are known by names or are assigned identifiers. Names and identifiers are the basis for controlled access points. The formulation of controlled access points is governed by rules that are applied by agencies. Agencies create or modify controlled access points.

The FRAD model makes one important change from the FRBR model. The name of a person and the title of a work are no longer considered attributes. Instead, the entity name is identified. FRAD 3.4 defines name as follows:
A character or group of words and/or characters by which an entity is known in the real world.

Includes names by which persons, families, and corporate bodies are known.
Includes titles by which works, expressions, manifestations, and items are known.
Includes names and terms by which concepts, objects, events, and places are known.
Includes real names, pseudonyms, religious names, initials, and separate letters, numerals, or symbols.

[The list continues for more than two pages.]

If name is a separate entity, then the name and the person have a relationship, or the name and the work have a relationship. At first glance, it may appear a needless complication. Actually, it simplifies the conceptual model because it accommodates more complex relationships and different concepts of bibliographic identity. A person is “an individual or a persona established or adopted by an individual or group” (FRAD 3.4). One individual may have many personas; several people may together adopt a single persona. Different cataloging traditions treat personas and the pseudonyms used by personas in different ways. With name as a separate entity, the FRAD model builds in more flexibility to identify and define a broader range of relationships between names and entities, and also makes the model applicable in a wider range of circumstances.

**FRAD Attributes**

For the bibliographic entities, the FRBR and FRAD models identify the same entities but define different sets of attributes because different attributes are reflected in bibliographic data versus authority data. Though the two models overlap, they are different because they each focus on different portions of the bibliographic universe.

In the FRBR model, the attributes that are defined include only those that usually are part of bibliographic data. For example, for the entity *person*, the FRBR attributes are as follows (FRBR 4.6):

- name of *person*
- dates of *person*
- title of *person*
- other designation associated with the *person*

The FRAD model, reflecting data required for authority control, has a long list of possible attributes for the entity *person*, attributes that can be found in authority data. Thus, in FRAD, the attributes listed for person are as follows (FRAD 4.1):

- dates associated with the person
- place of death*
- title of person
- country*
- gender*
- place of residence*
- place of birth*
- affiliation*

The attributes with asterisks are those that are not in the FRBR model. These additional attributes are important for identifying the person, clarifying who the person is, and distinguishing the person from other persons.

The lists of attributes for group 1 entities are also different in the two models. There are more attributes listed in FRBR than in FRAD. Notes in FRAD confirm and explain the divergence. For example, here is the note that appears at the end of the FRAD list of attributes of a work (FRAD 4.4):

Note: The attributes of a work listed above include only those that are normally reflected in controlled access points or in other data elements recorded in authority records. They do not include other attributes of a work that may be reflected in bibliographic records, as identified in Functional Requirements for Bibliographic Records.

**FRAD Relationships**

The FRAD model also puts a strong emphasis on the role of relationships between entities. One of the basic relationships is that between a name or identifier and one of the bibliographic entities:

<table>
<thead>
<tr>
<th>Bibliographic entity</th>
<th>Relationship</th>
<th>FRAD entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>has appellation</td>
<td>name</td>
</tr>
<tr>
<td>work</td>
<td>has appellation</td>
<td>name</td>
</tr>
<tr>
<td>corporate body</td>
<td>is assigned</td>
<td>identifier</td>
</tr>
<tr>
<td>manifestation</td>
<td>is assigned</td>
<td>identifier</td>
</tr>
</tbody>
</table>

In the FRAD model, the relationships are organized into four categories. The first category covers relationships between the group 1 and 2 bibliographic entities, as well as the general relationships between the FRAD entities: bibliographic entities, names, identifiers, controlled access points, rules, and agencies.

The other three categories are the relationships expressed in the authority reference structure. This is a simplified summary of the categories:

1. relationships between entities: relationships between persons, families, corporate bodies, and relationships among works
   - the see also reference structure\(^1\)

2. relationships between the names of an entity
   - the see reference structure
3. relationships between controlled access points
   - two or more access points for the same entity; for example, parallel language, alternate scripts, different rules, etc.

The relationships that FRAD identifies are familiar relationships, relationships that are easily recognized as the basis for authority control work. For example, some of the relationships between a person and other entities include

<table>
<thead>
<tr>
<th>Entity</th>
<th>Relationship</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>pseudonymous</td>
<td>person (persona)</td>
</tr>
<tr>
<td>person</td>
<td>membership</td>
<td>corporate body</td>
</tr>
<tr>
<td>person</td>
<td>official</td>
<td>person (identity in an official capacity, e.g., president or prime minister)</td>
</tr>
</tbody>
</table>

As was the case with attributes, there is also an overlap between FRBR and FRAD relationships. For example, FRBR and FRAD both map out the relationships between different works—relationships such as imitation, adaptation, transformation, supplement, and successor. FRBR's aim is to identify the nature of bibliographic relationships. FRAD looks at how these relationships are expressed in authority data. Thus, for the adaptation relationship, FRBR identifies it as a type of relationship that can exist between two works, between a work and an expression, and between expressions. FRAD identifies how the relationship is expressed in the see also reference structure, in information notes that may be part of an authority record, and in the controlled access point in the bibliographic record.

**Why Are FRBR and FRAD Important?**

FRBR and FRAD give us a way to understand and talk about the bibliographic universe. They are based on the analysis of actual bibliographic and authority data. The models give a cohesive and logically sound representation of the nature of bibliographic and authority data. The entities, attributes, and relationships are a useful way of organizing our understanding of the bibliographic universe.

It is still the same bibliographic universe that existed before FRBR and FRAD. Taking a MARC record from the 1980s, well before the development of the FRBR model, we can easily examine it through a FRBR perspective and identify FRBR entities, attributes, and relationships, as shown in figure 3.5. Bibliographic data has not changed. The FRBR family of conceptual models introduces a systematic and coherent framework for understanding the nature of this data. The framework also provides a common vocabulary and conceptual language that is recognized internationally.
FRBR and FRAD identify the key components of bibliographic and authority data and assess the value of each component in accomplishing user tasks. The models promote a change in perspective because the data is analyzed in terms of its utility for those who will use the data. The models also take the perspective of navigating through large catalogs and databases. The focus is not a single record but the sum of bibliographic and authority data in large catalogs and databases.

Since the models clarify the underlying structure of bibliographic and authority data, they can play a significant role in the process of developing and revising cataloging standards. They act as a basic road map. They can be used as the reference point against which to measure and test that cataloging instructions are comprehensive and consistent and to evaluate if the instructions produce effective metadata that corresponds to user needs.
The FRBR model also presents a clear way to conceptually separate content and carrier. FRBR’s separation into four group 1 entities—work, expression, manifestation, and item—allows for a more precise definition of the boundaries between content and carrier. Work and expression are about content; manifestation and item are about carriers. Content is not assumed to be a single entity, work, but is differentiated into two entities, work and expression. This differentiation allows for a clearer definition of the relationship between content that is similar but not identical. In some cases, the same work in a different expression may satisfy the user’s need, but in other cases, a user may need a particular expression. For example, a user with a visual impairment may only be able to access the content of Robinson Crusoe through a spoken word expression. The identification of two content entities, work and expression, allows for a more precise collocation and display of search results. This conceptual separation is important because the degree of similarity in content is important to users and enables users to find, identify, and select the resource that is most appropriate to their needs.

EVIDENCE OF FRBR AND FRAD IN RDA

When we look at RDA with an awareness of the FRBR and FRAD models, it is easy to see evidence of RDA’s alignment with the models and to understand the rationale for RDA’s content and the organization of that content. This section will look at a few fundamental aspects that demonstrate the alignment.

**Entity Relationship Diagrams**

The easiest way to visualize the connection between RDA and the FRBR and FRAD models is to look at the entity relationship diagrams (ERDs) that form part of the RDA Toolkit (figure 3.6). The diagrams are like a road map for RDA. The diagrams start from the FRBR and FRAD entities, and display the attributes and relationships associated with each entity.

The diagrams give visual confirmation of RDA’s alignment with the conceptual models. The diagrams are firstly diagrams of RDA content. Looking at the diagram of the core...
attributes of the work entity (figure 3.7), we can see that the diagram gives an outline of RDA, mapping all the elements that are core attributes at the work level. The diagram does not intend to match the sequence and numbering of the instructions as seen when we browse the table of contents. But it does cover all the relevant attributes—in this case, all the core attributes of work. The terms in the diagram are the terms used in RDA, and the attributes are all the attributes covered by RDA instructions. For each attribute, the diagram also includes a reference to the documents describing the FRBR and FRAD models, demonstrating and confirming the alignment between RDA and the models. There are cases where RDA includes additional attributes, such as Signatory to a Treaty, Etc., which were not explicitly listed as attributes in the original FRBR and FRAD models. In other diagrams, one can see that RDA breaks down an attribute into more detail than in the conceptual models, as in Numbering of Serials (figure 3.8). Numbering of serials is an FRBR attribute. RDA has an element for numbering of serials. RDA’s element is further broken down into subelements. This diagram shows four of the eight possible subelements.

RDA is a set of practical instructions based on FRBR and FRAD. In places, RDA includes more details than the models. The entity relationship diagrams give a visual overview of RDA and also confirm the alignment between RDA and the FRBR and FRAD models.
When browsing RDA's table of contents with some knowledge of FRBR and FRAD, one can recognize the vocabulary and concepts that originate from the models:

- Section 1 — Recording attributes of manifestation and item
- Section 2 — Recording attributes of work and expression
- Section 3 — Recording attributes of person, family, and corporate body
- Section 4 — Recording attributes of concept, object, event, and place
- Section 5 — Recording primary relationships
- Section 6 — Recording relationships to persons, families, and corporate bodies associated with a resource
- Section 7 — Recording the subject of a work
- Section 8 — Recording relationships between works, expressions, manifestations, and items
- Section 9 — Recording relationships between persons, families, and corporate bodies
- Section 10 — Recording relationships between concepts, objects, events, and places
RDA instructions are organized into sections, and the sections are separated according to the FRBR bibliographic entities. The first four sections of RDA focus on recording the attributes of bibliographic entities, and sections 5 through 10 focus on recording relationships between entities.

The sections that map to the group 3 entities, subjects, are mostly placeholders, and are included in the structure of RDA in order to have a complete mapping between the FRBR family of models and RDA. The placeholders are areas that may be developed in the future.

**User Tasks**

If we look at the structure within the sections of RDA, we find more evidence of its alignment with FRBR and FRAD. The chapter structure within each section is aligned with the FRBR and FRAD user tasks. Each section begins with a chapter of general guidelines. The remaining chapters are organized according to the user tasks. Each chapter includes instructions that support one of the user tasks.

For example, the chapters in section 1 are organized according to the FRBR tasks identify, select, and obtain:

**Section 1—Recording attributes of manifestation and item**

- Chapter 1—General guidelines
- Chapter 2—Identifying manifestations and items  FRBR task = Identify
- Chapter 3—Describing carriers  FRBR task = Select
- Chapter 4—Providing acquisition and access information  FRBR task = Obtain

The chapters in section 9 include instructions for recording data to support authority control. The chapters are separated according to the group 2 entities. Since the section focuses on data to support authority control, all the chapters are associated with the same user task, find.

**Section 9—Recording relationships between persons, families, and corporate bodies**

- Chapter 29—General guidelines
- Chapter 30—Related persons  FRAD task = Find
- Chapter 31—Related families  FRAD task = Find
- Chapter 32—Related corporate bodies  FRAD task = Find

The chapter of general guidelines is the starting point in every section. The general guidelines always include a part called “Functional Objectives and Principles.” The functional objectives relate the instructions of the section back to the user tasks,
reinforcing the link between the data that is recorded and the role of the data in completing a user task.

For example, functional objectives and principles for section 1 are

1.2  Functional Objectives and Principles
The data describing a manifestation or item should enable the user to:

a) find manifestations and items that correspond to the user's stated search criteria
b) identify the resource described (i.e., confirm that the resource described corresponds to the resource sought, or distinguish between two or more resources with the same or similar characteristics)
c) select a resource that is appropriate to the user's requirements with respect to the physical characteristics of the carrier and the formatting and encoding of information stored on the carrier
d) obtain a resource (i.e., acquire a resource through purchase, loan, etc., or access a resource electronically through an online connection to a remote computer).

The functional objectives and principles for section 9 are

29.2  Functional Objectives and Principles
The data recorded to reflect relationships between persons, families, and corporate bodies should enable the user to:

a) find persons, families, or corporate bodies that are related to the person, family, or corporate body represented by the data retrieved in response to the user's search
b) understand the relationship between two or more persons, families, or corporate bodies.

To ensure that the data created using RDA meet those functional objectives, the data should reflect all significant bibliographic relationships between persons, families, and corporate bodies represented by preferred access points and/or identifiers.

RDA uses the word understand; FRAD uses the word contextualize; the two represent the same user task.

Content of RDA Instructions
RDA adds many elements that were absent in AACR2. These are attributes and relationships that were identified in the FRBR and FRAD models and were judged to
have a significant role in the successful completion of user tasks. Thus, the RDA chapter "Identifying Persons" gives instructions for recording data about all the attributes identified in the FRAD model:

9. Identifying Persons
9.0 Purpose and Scope
9.1 General Guidelines on Identifying Persons
9.2 Name of the Person
9.3 Date Associated with the Person
9.4 Title of the Person
9.5 Fuller Form of Name
9.6 Other Designation Associated with the Person
9.7 Gender
9.8 Place of Birth
9.9 Place of Death
9.10 Country Associated with the Person
9.11 Place of Residence
9.12 Address of the Person
9.13 Affiliation
9.14 Language of the Person
9.15 Field of Activity of the Person
9.16 Profession or Occupation
9.17 Biographical Information
9.18 Identifier for the Person
9.19 Constructing Access Points to Represent Persons

The vocabulary that is used in RDA instructions reflects the concepts and terminology of the FRBR and FRAD models. For example, instead of instructions about “physical description,” RDA instructions address the description of carriers. When we record an ISBN or ISSN, we are recording an identifier for the manifestation. Instead of “uniform titles,” RDA distinguishes between an authorized access point representing a work and an authorized access point representing an expression. The term heading is absent from RDA. RDA uses the term access point.

Several instructions in RDA are basically the same as the AACR2 instruction. The intent and the end result are similar, but the wording has changed to reflect the vocabulary and concepts of the FRBR and FRAD models. In the following instruction, there is both a change in vocabulary and a change to align with the FRBR and FRAD models.
AACR2

25.8A

Use the collective title Works for an item that consists of, or purports to be, the complete works of a person, including those that are complete at the time of publication.

RDA

6.2.2.10.1

Record the conventional collective title Works as the preferred title for a compilation of works that consists of, or purports to be, the complete works of a person, family, or corporate body, including those that are complete at the time of publication.

The instruction has expanded from “complete works of a person” to complete works of all three of the group 2 entities: person, family, corporate body. The FRBR and FRAD conceptual models point out all the logical possibilities. Any group 2 entity may be responsible for intellectual or artistic content. Thus, this instruction should apply to the complete works of any group 2 entity. This instruction may rarely be applied in the case of a family or corporate body, but, to maintain logical consistency, it has been adjusted to encompass all three of the group 2 entities.

The FRBR and FRAD models underline the importance of relationships between bibliographic entities. The models not only identify the existence of many relationships, but also identify the types of relationships and demonstrate the importance of these relationships for the completion of user tasks. RDA puts a strong emphasis on the recording of relationships, with six sections of instructions for relationships. RDA significantly expands the use of relationship designators so that the precise type of relationships can be explicitly recorded. AACR2 had a short, optional rule at 21.0D. Instead, RDA includes full instructions on the use of relationship designators and three detailed appendices of terms:

Appendix I  Relationship Designators: Relationships Between a Resource and Persons, Families, and Corporate Bodies Associated with the Resource

Appendix J  Relationship Designators: Relationships Between Works, Expressions, Manifestations, and Items

Appendix K  Relationship Designators: Relationships Between Persons, Families, and Corporate Bodies

The concepts and vocabulary of the FRBR and FRAD models played an important role in shaping RDA. One can use RDA without background knowledge of the models, but some knowledge of the concepts and vocabulary makes it easier to see the rationale for RDA's content and its shape and structure.
NOTES


8. The relationships between the group 1 entities are sometimes called “inherent” because the nature of the relationship is essentially the definition of the entity.

9. Entity definitions from FRAD 3.4:
   Controlled access point = A name, term, code, etc., under which a bibliographic or authority record or reference will be found. Includes access points designated as authorized (or preferred) forms of names . . . as well as variant forms of names . . .
   Rules = A set of instructions relating to the formulation and/or recording of controlled access points . . .
   Agency = An organization responsible for creating or modifying a controlled access point . . . Includes libraries, national bibliographic agencies, bibliographic utilities, consortia, museums, archives, rights management organizations, etc.

10. The note in FRAD gives a brief outline of two different approaches to pseudonyms. FRANAR, Functional Requirements for Authority Data, p. 25.

11. These relationships may also be expressed in the preferred form of a name or explanatory notes.

12. RDA defines certain attributes and relationships as “core elements.” Elements are designated as core because they are essential to support the most basic user tasks. See RDA 0.6.1; also chapter 6 of this volume.

13. Sections 4, 7, and 10 are placeholders. Section 4 includes a small amount of content to cover the identification of place: chapter 16, “Identifying Places.”
14. The FRBR family of models refers to the FRBR model and the extensions of the model to cover authority data, FRAD, and subject authority data, FRSAD.

15. There is a fourth placeholder appendix: “Relationship Designators: Relationships between Concepts, Objects, Events, and Places.”
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Author Chris Oliver, Cataloguing and Authorities Coordinator at the McGill University Library and chair of the Canadian Committee on Cataloguing, offers practical advice on how to make the transition from the Anglo-American Cataloguing Rules (AACR) to Resource Description and Access (RDA). This indispensable Special Report helps catalogers by

- Concisely explaining RDA and its expected benefits for users and catalogers, presented through topics and questions
- Placing RDA in context by examining its connection with its predecessor, AACR2, as well as looking at RDA’s relationship to internationally accepted principles, standards, and models
- Detailing how RDA positions us to take advantage of newly emerging database structures, how RDA data enables improved resource discovery, and how we can get metadata out of library silos and make it more accessible

No cataloger or library administrator will want to be without this straightforward guide to the changes ahead.