

FRBR (Functional requirements for bibliographic records) SEMINAR - Florence, 27-28 January 2000

Reflections on the Goals, Concepts and Recommendations of the IFLA Study on Functional Requirements of Bibliographic Records

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Developments Resulting in the Publication of the Functional Requirements for Bibliographic Records

The International Federation of Library Associations and Institutions (IFLA) has long promoted international bibliographic standards through its UBCIM Programme and the programs and activities of IFLA Division of Bibliographic Control and its three standing committees. IFLA's many achievements over the years have resulted in several serious re-examinations of cataloguing theories and practices.

The study we are discussing this morning is part of a proud tradition going back to 1961 and now leads us through the early twenty-first century.⁽¹⁾ As many of you may remember, the first major IFLA initiative in international bibliographic control took place in 1961 at an international conference in Paris during which a set of cataloguing principles were approved--now known as the Paris Principles. In 1969 another important IFLA-sponsored conference was held in Copenhagen, whose purpose was to consider a resolution to establish international standards for the form and content of bibliographic descriptions. The results of this far-reaching resolution have been the *International Standard Bibliographic Description for Monographic Publications*, first published in 1971, and its successor standards for all formats. In 1977 the International Congress on National Bibliographies was held in Paris, which called for standards for the printed national bibliography. The congress participants also recommended that greater efforts at national international levels should be made to ensure compatibility between the bibliographic exchange formats of the library and information communities, and the establishment of ISDS centres. Another event of consequence took place in 1997 when the Standing Committee of the IFLA Section on Cataloguing approved the final report of a study on the functional requirements for bibliographic records. The report contained a series of recommendations that could have far reaching consequences for international bibliographic control standards.

The genesis for the IFLA study evolved from a series of recommendations that grew out of the deliberations of an influential seminar on bibliographic control held in August 1990 in Stockholm, Sweden. A dramatically changed environment led to this IFLA seminar, an environment that operated within new confines of automated systems for creating, processing and accessing machine-readable cataloguing records. This environment has rapidly evolved into one of shared bibliographic databases and online catalogues and characterized by both increased and decreased cataloguing costs in ways hardly imagined two decades before.

The IFLA UBCIM Programme and the IFLA Division of Bibliographic Control sponsored the Stockholm seminar. Differing views of the bibliographic record and the functions it performs emerged from the seminar discussions, thereby putting into potential conflict two strongly voiced interests. One interest was decreasing the high costs associated with bibliographic and authority control. The other interest was maintaining and increasing quality in reaction to growing international interest in shared bibliographic

data with a growing emphasis on emerging technologies impacting the nature of library materials. Regardless of the wide-variety of participants' views, all participants felt that a fundamental reexamination of the bibliographic record was necessary, largely to balance these potentially divergent views and to respond to meeting an increasingly broad range of user needs and expectations.

The seminar participants adopted nine resolutions, one of which led directly to the formation of what became the Functional Requirements for Bibliographic Records (FRBR) study. That resolution called for the commissioning of a study to define the functional requirements for bibliographic records. Following this seminar, the Conference of Directors of National Libraries (CDNL) and the IFLA Division of Bibliographic Control also voiced interest in addressing these same issues. Both believed that such a study should reflect a variety of users needs and requirements, evolving and new forms of materials, and the rapidly changing nature of electronic access. Also of mutual interest was the acknowledgment that the national bibliographic agency should be responsible for ensuring the recording of the national published output in all media.

In response to the seminar's recommendations, in 1991 the Standing Committee of the IFLA Section of Cataloguing commissioned a study to define the functional requirements for bibliographic records. The Study Group was composed of six committee members (Olivia Madison chaired the Study Group and John Byrum was a member), four consultants (at the end of the process) who were responsible for drafting the report, and thirteen commentators. The charge of the working group was two-fold and was defined in a document entitled *Terms of Reference for a Study of the Functional Requirements for Bibliographic Records*.⁽²⁾ The first mandate was as follows:

The purpose of this study is to delineate in clearly defined terms the functions performed by the bibliographic record with respect to various media, various applications, and various user needs. The study is to cover the full range of functions for bibliographic record in its widest sense--i.e., a record that encompasses not only descriptive elements but access points (name, title, subject, etc.), other "organizing elements (classification, etc.), and annotations.

The terms of reference included a second mandate--to recommend a basic level of functionality and basic data requirements for records created by national bibliographic agencies. It was hoped that through international agreements regarding basic data requirements that a core standard would allow national bibliographic agencies to reduce cataloguing costs through increased international sharing of bibliographic data and potential reduction of less important data contained in bibliographic records. Such agreements would also ensure that the records produced by national bibliographic agencies would meet essential user needs.

The study was to be based on the primary functions users perform while using bibliographic records and take into account all types of materials they may have interest in. It was intended to be theoretically based and would use the entity- relationship (E-R) modeling technique while avoiding bias towards any existing cataloguing codes. The results of the study were to be a set of recommended data elements that a national bibliographic record would need to include to perform its primary functions.

Following four years of deliberations, the Study Group consultants drafted a report that was submitted for a six-month world-wide review in 1996. The review elicited forty responses from sixteen countries. Most of the comments involved the draft report's organization, the definition of terms, the methodology, and conclusions relating to the requirements for specific types of materials. Also most reviewers requested more examples to the text in order to clarify various definitions and concepts. The final report was submitted to the Standing Committee of the IFLA Section on Cataloguing at the 63rd General Conference of IFLA in 1997 in Copenhagen. The Standing Committee unanimously approved the report and K.G.

Saur subsequently published the final report in early 1998 as part of its *UBCIM Publications--New Series*, vol. 19. The final report is also available in electronic format on IFLANET (<http://www.ifla.org/VII/s13/sc.htm>)

Since its publication, FRBR has received positive international recognition, with recent endorsement of its recommendations for the core national bibliographic record at the November 1998 International Conference on National Bibliographic Services (ICNBS) Conference in Copenhagen, Denmark. As another measure of interest in the Functional Requirement, there are currently more than 100 references to FRBR in documents available on the Internet.

FRBR was also closely investigated by the European Library Automation Group (ELAG) in a workshop held during the 1998 ELAG Conference at the Koninklijke Bibliotheek in The Hague, Netherlands. The purpose of the workshop was to continue ongoing discussions on bibliographic modeling by using the recent published FRBR report. The workshop participants later presented a paper on the workshop analysis and conclusions at the 64th IFLA General Conference held in Amsterdam and the paper entitled "User Benefits from a New Bibliographic Model: Follow-up of the IFLA Functional Requirements Study" was later published in *International Cataloguing and Bibliographic Control*.⁽³⁾

The analysis resulted in strong support for FRBR's four-level modeling technique comprised of work, expression, manifestation and item, which we will be thoroughly discussing later in this presentation. The workshop participants concluded that the FRBR model is 'easier to maintain, has increased flexibility of representation, may be better searched, and may be more accurately processed according to rule based processes. It is very much in line with the results of the analysis of the digital resources, integration of which the 'tradiitonal' materials is very important these days.'⁽⁴⁾

The workshop participants also concluded that the bibliographic realization of the four-level model and the core national bibliographic record could serve to lower cataloguing costs through shared international cataloguing.

The IFLA Section on Cataloguing has continued to promote the study and its recommendations, and its current Action Plan specifically mentions it as one of its nine goals:

Goal 3: Promote the Functional Requirements for Bibliographic Records (FRBR) study and its recommendations, and take follow-up action to develop new descriptive standards and standards for access points and to develop a new approach to the bibliographic universe.

3.1 Continue to follow-up with groups such as ELAG, the Joint Steering Committee for Revision of AACR, and such groups as the rule committees in Germany, Russia, etc.

3.2 Continue representation on the IFLA Working Group on Functional Requirements and Numbering for Authority Records (FRANAR), that expands FRBR to authority records.

3.3 Promote the Danish model to teach FRBR in library schools in other countries

3.4 Work with the Section on Bibliography to develop a statement for library directors and managers explaining FRBR.

Specific initiatives related to some of these action items will be covered next as we take up areas for further study.

Areas for Further Study

When FRBR was circulated for world-wide review, as is the practice with all major documents produced under the sponsorship of the Section on Cataloguing, many commentaries were submitted from experts in a large number of countries, as was mentioned.. Although these submissions were very helpful to the Study Group in assessing FRBR and produced a number of improvements, it became clear that in some cases at least that not everyone understood FRBR's scope and purpose. As a result, the Study Group considerably sharpened its explanation of what FRBR sought to achieve but also added a section called "areas for further study." This section was intended to make clear what FRBR itself did not address while introducing concepts and topics that well might be undertaken subsequently by others. "It is hoped ... that the model itself will serve as a useful starting point for a number of follow-up studies of interest to those involved with designing cataloguing codes and systems to support the creation, management, and use of bibliographic data."[\(5\)](#)

In listing other potential targets for future investigation, FRBR mentions first the possibility of using the entity-relationship (E-R) modeling approach to determine the data elements appropriate to authority records. We are pleased to report that IFLA has in fact decided to mount a study in the area of authority control, and this will be described in greater detail shortly. In addition, FRBR mentions "seriality" as another topic for more detailed examination - especially in relation to dynamic electronic resources such as aggregator databases. This would be very timely because much attention in the revision of AACR2 and of the ISBD(S), both currently in progress, there is a strong focus on the problems of describing such digital materials.

The authors of FRBR also point to the possibility of applying FRBR's methodology to national cataloguing codes, and we will discuss where this is happening later in the presentation. However, we can speculate here that the *Regole italiane di catalogazione per autori* (RICA) would appear to be a likely candidate for such a study since this code has been in place since 1979, well before the advent of the electronic publications which seem to require more and more study from the bibliographic standpoint as they evolve into more and more mutable publications. Authorship of remote access electronic resources, for example, is among the most challenging of today's cataloguing problems, as Isa de Pinedo pointed out in a recent paper on "Cataloguing Rules in Italy and Impact on the Exchange on Records"[\(6\)](#).

Perhaps the Permanent Commission for revision of RICA would find the FRBR methodology of value in addressing this and other concerns related to the problems of authorship. As FRBR points out: "Those responsible for the development of national cataloguing codes might find it useful to adapt the model to reflect the 'business rules' or operative principles that apply within their particular cultural context and bibliographic tradition."[\(7\)](#)

The re-use of cataloguing records becomes quite complex at the international level. Again referring to Isa de Pinedo's paper cited above, we are told that in Italy "a percentage above 60-70% of editing makes the re-use of records produced elsewhere no more cost-effective than the original cataloguing of the same." Studies in other areas, for example in Germany, confirm the expense of copy cataloguing across different bibliographic traditions. Yet, the fact that OCLC and RLG both compile large international databases and have subscribers throughout the world makes it even more imperative today that efforts be made to address the problems which cause re-use to fall below the potential for cost savings. On this topic FRBR states: "At the international level, the model's mapping of individual attributes and relationships to the specific ways in which bibliographic data are used could serve as a useful framework for re-assessing data recording conventions and standards, with a view to rationalizing the level of effort that is expended in 'normalizing' bibliographic data."[\(8\)](#)

Another possible area for investigation is that of the MARC formats used to communicate bibliographic data, especially if cataloguing codes begin to move away from the "class of material" approach now so prevalent. On this subject, FRBR states: "Further study could be done on the practical implications of restructuring MARC record formats to reflect more directly the hierarchical and reciprocal relationships outlined in the model. An examination of that kind might offer a new approach to the so-called 'multiple versions' issue." The problem of how to deal with publications which appear in a variety of formats has been long controversial, at least in the AACR cataloguing community. It is still not completely resolved to everyone's satisfaction despite considerable efforts to address the issue. Perhaps FRBR's intellectual rigor and focus on object relationships could bring the problem into clearer perspective and thus pave the way finally for consensus on a solution. As Tom Delsey has pointed out, developing such a model for the MARC record as a whole would require extending the analysis beyond data elements that are derived from cataloguing codes: "The classification of record types and bibliographic levels that are embedded in the record label, the structuring and interrelationships of the fixed-length data fields, and the structure of linking entry fields are part and parcel of a logic that is internal to MARC."[\(9\)](#)

In his article "Multiple Versions Revisited", Edgar Jones writes: "The entity-relationship model in ...[FRBR] provides a useful mechanism for re-examining the multiple-versions problem in serials cataloging."[\(10\)](#)

This article looks at the "long suffering" multiple versions problem from the perspective of the E-R model, especially as relates to electronic documents, and comes to conclusions that might startle some: To resolve the multiple versions questions, Mr. Jones calls for "the introduction of classes or records that represent not physical items, but rather the shared bibliographic characteristics of certain sets of physical items (expressions, works) and on the abandonment of principles at the very heart of contemporary serials cataloging (successive entry and bibliographic descriptions based on the earliest issue consulted)."[\(11\)](#)

Delsey also suggests that "the next logical step, after analyzing the cataloguing rules and the MARC format structures, would be to take models and use them to look at options for improved database design".[\(12\)](#) The purpose would be to assess the extent to which the newer technologies could be exploited to improve the way we manage data from its creation through its retrieval in a networked online environment. This potential application is also mentioned in FRBR.

FRBR points to other international applications which might benefit from E-R modeling and from recommendations resulting from the study, specifically the basic level national bibliographic record; some of these will be described when we look at "Current Developments: FRBR's Impact on Standards for Bibliographic Records" at the conclusion of this presentation.

Summary of the FRBR Model and Methodology

We believe that the decision of the framers of the FRBR study consultants' to use the entity-relationship model led to the strength of the resulting study's outcomes and its overall positive international reception. Furthermore, we believe that by coupling the E-R model with the concept of how any user might use a bibliographic record, the study's model and methodology may easily extend into a variety of analytical frameworks. Such frameworks could test and validate new bibliographic theories as well as support the re-examinations of structures used to store, display and communicate bibliographic data. As with any E-R model, the entities are the foundation for analyzing corresponding relationships.

This part of our presentation summarizes the model and methodology of the FRBR study. First, we will discuss the identified bibliographic entities, in particular those entities that relate to the recommended principles for the basic national bibliographic record. After that discussion, we will review the

recommended principles for the basic national bibliographic record and the E-R methodology used within the study. Before one may fully understand these principles, one should first go to the study for its definitions for a specific entity category, a category that the study refers to as Group 1 (entities of work, expression, manifestation and item). Therefore, when exploring FRBR's three entity groups, we will concentrate the majority of our remarks in this section on the study's first entity category.

The study included three entity categories, with the second and third groups existing through their relationships to Group 1 entities.

- Group 1 entities include a work, expression, manifestation and item. They form the foundation of the model and its methodology.
- Group 2 entities include a person (an individual) and corporate body (an organization or group of individuals and/or organization). These entities represent those responsible for the intellectual or artistic custodianship of Group 1 entities, and the physical production and/or dissemination of the Group 1 manifestations. They can also serve as subjects.
- Group 3 entities include a concept (an abstract notion or idea), object (a material thing), event (an action or occurrence), or place (a location). These entities usually serve as the subjects of works. These entities may relate to just one work or a multitude of works, and each work may include several Group 3 entities.

As mentioned above, Group 1 entities consist of four entities, entities of critical importance to understanding the bibliographic universe. Group 1 entities received the majority of deliberations within the working group, commentary during the world-wide review, and discussions and analysis following the study's publication. These entities range from an abstract concept through the physical object that one may physically hold. Within the FRBR Study Group meetings, deliberations centered on whether or not four entities were needed--was this level of abstract detail necessary in defining the functions of the bibliographic record. In other words, should there be three entities or four in defining these functions? What level of bibliographic precision would be necessary? As the Study Group analyzed and seriously discussed potential entity definitions, particularly through the use of examples, it concluded that four levels would be necessary to portray accurately through the growing complexities of the bibliographic universe. Below are brief descriptions of the final Group 1 entities with examples that demonstrate the level of bibliographic clarity that was decided would be necessary for this model.

A. Work

The work is the distinct intellectual or artistic creation. This is an abstract entity with no material object. The work is recognized through individual realizations or expressions of the work, but the work itself exists only in the commonality of content between and among the various expressions of the work. The work enables us to give a name and draw relationships to the abstract intellectual or artistic creation. When we speak of Jane Austin's *Sense and Sensibility* as a work, we are not referring to a specific edition or text; rather it is the intellectual creation.

A question often asked is when does a work become a new work? The study recognizes the difficulties inherent in this question and gives guidance but states that "bibliographic conventions established by various cultures or national groups may differ in terms of the criteria they use for determining the boundaries between one work and another."[\(13\)](#)

Examples such as corrected text, updates, abridgements, enlargements, translations, additional parts or accompaniment to a musical composition, dubbed or subtitled versions of a film might all be considered different expressions of the same work.

Examples:

- W1 Henry Gray's *Anatomy of the human body*
 - E1 text and illustrations for the first edition
 - E2 text and illustrations for the second edition
 - E3 text and illustrations for the third edition

- W2 *La Dolce Vita* [Motion picture]
 - E1 the original Italian language version
 - E2 the original with dubbed French dialogue
 - E3 the original with English subtitles

However, when a work is modified in such a way that there is a significant degree of independent intellectual or artistic work, a new work should be considered. These new works are often the result of rewriting, serious reexaminations of theories or historical events, parodies, adaptations for children, abstracts, summaries, or adaptations of a work from one literary art form to another (e.g., dramatizations or adaptations from one medium of the graphic arts to another).

Examples:

- W1 William Shakespeare's play, *King Lear*
- W2 Jane Smiley's novel, *A Thousand Acres* (plot based on *King Lear*)
- W1 William Shakespeare's play, *Hamlet*
- W2 Franco Zeffirelli's motion picture, *Hamlet* (1990)
- W3 Kenneth Branagh's motion picture, *Hamlet* (1996)

The work as an entity provides the ability to name and draw relationships to the abstract intellectual or artistic creation that covers all individual expressions of the work. The work also allows the creation of indirect relationships between expressions of the same work where direct relationships may not be appropriate. In addition, the work provides for an efficient way of grouping related expressions.

B. The Expression

The expression represents the intellectual or artistic realization of a work. It encompasses the specific words, sentences, paragraphs, etc. that result from the realization or expression of a work and provides distinction in intellectual content between one realization and another of the same work. However,

differences in typeface or paper layout do not constitute a new expression. We would like to emphasize here that the concept of copyright protects the expression.

As indirectly mentioned above, when discussing the work, the form of expression (e.g., from alpha-numeric notation to spoken word) defines different expressions. Also, a translation from one language to another constitutes a new expression. The study states that any change in intellectual or artistic content constitutes a change in expression. For example, an Italian translation of the original English text of James Joyce's *Ulysses* represents two expressions of the same work. As mentioned above in an example for a work, two different film adaptations of Shakespeare's *Hamlet* constitute two different expressions of one work. Each corresponding bibliographic record would refer to the work but not to the other film adaptation. Variant expressions, due to one version being revised from an earlier version, while not explicitly stated, will indirectly be described with the recording of the version or edition (e.g., 2nd edition).

Defining the expression allows us to:

- Reflect the distinctions in intellectual or artistic content between one realization and another
- Describe the intellectual or artistic attributes of a particular realization of a work and use those differences to record differences in content
- Draw relationships between related realizations (e.g., a translation from one language to another or a specific score used for a musical performance)
- Make common links between the same expression published in two different manifestations.

C. Manifestation

The manifestation represents the physical embodiment of an expression of a work or, in other words, the expression that is issued or published. The manifestation represents a wide-range of all the physical objects (or items) that bear the same characteristics in respect to both intellectual content and physical form and permits the cataloguer to describe the shared characteristics. In some cases there might be only one physical exemplar of the manifestation, as in the case of a manuscript or an original tape recording, or in terms of preservation, a preservation copy. In other cases there could be 2,000,000 physical exemplars or items of a print edition by a publisher or producer--all these physical items together would represent the manifestation.

The differences between one manifestation and another are based upon both intellectual content and physical form and might include:

- Change in physical form (e.g., size of font or page layout)
- Change in the physical medium such as microform or paper
- Change in container, such as cassette to compact disc
- Change in publisher, producer and distributor

Example within a library's catalogue:

W Wolfgang Amadeus Mozart's *Symphony No. 40 in G minor*

E Recorded by the Chamber Orchestra of Europe under the direction
of Sir Georg Solti in Frankfurt, Germany in June 1984

M1 Audio cassette released in 1985 by London Records

M2 Compact disc released in 1985 by London Records

The central purpose of the manifestation is to enable the cataloguer to name and describe the set of items that result from a single expression and to describe the shared characteristics of the resulting copies. This description includes the physical characteristics and the characteristics of how to identify and acquire a copy of the manifestation.

D. Item

The item is a single exemplar of a manifestation. In most instances the item is a single physical object but also could represent the electronic article one has retrieved through the Internet. This is the physical object one holds or actually views in an electronic or virtual library. The item normally shares the same physical and intellectual characteristics as the manifestation. However, there could be occurrences when an item is comprised of more than one part, such as a three-volume monographic set or a microform copy issued on two reels. Moreover, items may not share all characteristics, a specific item might have lost pages, margin notes from a previous owner, or an autograph (e.g., two copies of the same book and only one being autographed by the author). It should be noted that the data requirements at the item level are pertinent only to the actual "owner" of the item, for example, an individual library.

Defining the item as an entity allows the cataloguer to draw relationships between individual copies of a manifestation. For example, a library system may have two copies of the same manifestation--one in the central library and another in a branch library.

In conclusion, the FRBR Study Group defined the relationships among these four entities in the following sequence:

- A Work is realized through an Expression
- An Expression is embodied in a Manifestation
- A Manifestation is exemplified by an Item

E. Functional Principles Related to Group 1 Entities

In terms of the entities discussed above, the Study Group next analyzed the Group 1 entities in terms of the user tasks that the group had identified as required for any user's navigation of the bibliographic university--namely to find, identify, select and obtain. As a result, the following user functions, as they related to Group 1 entities, were identified as important to the Basic Level National Bibliographic Record. Please note that the functions related to the item are not included in this list, because normally national bibliographic records do not reflect data pertaining to the item. For an individual library, the function related to obtaining an item was seen as critically important but was not pertinent to the basic recommendations.

- Find all manifestations embodying:
 - the various expressions of a given work
 - the works for which a given person or corporate body is responsible
 - works on a given subject
 - works in a given series
- Find a particular manifestation:

- when the name(s) of the person(s) and/or corporate body(ies) responsible for the work(s) embodied in the manifestation is (are) known
- when the title of the manifestation is known
- when the manifestation identifier is known
- Identify a work
- Identify an expression of a work
- Select a work
- Select an expression
- Select a manifestation
- Obtain a manifestation

F. FRBR E-R Methodology

As mentioned earlier, with any E-R model, the identification of the appropriate entities and user functions represented the initial two steps of the FRBR methodology. Following these two steps, the Study Group identified the attributes associated with each entity (across all formats and both descriptive and organizing in function) and the appropriate relationships among the entities. Following the identification process of the attributes for each entity and the appropriate relationships among the entities, the Study Group then assigned a relative weighted value for each attribute and relationship based on the user functions to find, identify, select or obtain a particular entity or group of entities. This was a lengthy and thorough process and involved bringing in experts in specific formats to assist with the identification and evaluating processes. As a result of this analysis, each attribute and relationship that was evaluated as highly important or moderately important became a required element of the national bibliographic record. We would like to mention that at a national or institutional level, these values could change dramatically due to the mission and/or objectives of any given collection of resources. Furthermore, decisions regarding the importance of a given attribute, such as title for a work, expression and manifestation, varied as to the find, identify and select functions, and these variances are recorded in the final report's tables found in Chapter 6 (User Tasks).

Authority Control

IFLA has long been interested in promoting the internationalization of authority work. Tom Delsey summarized early efforts in his paper "Authority Control in an International Context" which he published in 1989. He noted that IFLA's interest in this area goes back to the Paris Principles. Other steps were taken in 1963 with the publication of **Names of Persons**, a work which has been kept up to date by the IFLA Section on Cataloguing and in 1980 with publication of **Form and Structure of Corporate Headings**.[\(14\)](#)

As Barbara Tillett has pointed out: "All of these publications recognized the national traditions of language, culture, and social structures and tried to respect those in cataloging conventions."[\(15\)](#)

Tillett also reminds us that IFLA established a Working Group on an International Authority System in 1978 which resulted in a proposal for a system to achieve authority control and exchange of authority data on an international scale. "The group proposed a network of interrelated national databases of authority records with a central facility to control the system; for example, to manage links between related authority records from various national centers and to redirect packages of authority data to the appropriate national center."[\(16\)](#)

The Working Group also envisioned an International Standard Authority Data Number (ISADN), a standard number for an authority entry to be present in all variant records to serve as the identifier. IFLA

soon discovered, however, that it would be too costly and complex to implement such a system with the resources and technology then available.

Nevertheless, the need and desire for international standardization in the area of authority records and authority control have persisted. In the mid-1990s IFLA convened yet another Working Group to explore possibilities. This Group was charged to make recommendations regarding Minimal Level Authority Records and ISADN, and it completed its work in 1998. Its final report is available on the IFLANET at <http://www.ifla.org/VI/3/p1996-2/mlar.htm>.⁽¹⁷⁾

The main task of this Working Group was focused on identifying the basic elements of the authority record, on defining each element, and on formulating suggestions to the IFLA Permanent Committee for UNIMARC as to which elements should be recommended for addition to the UNIMARC/Authorities format. The group emphasized the importance of "allowing the preservation of national or rule-based differences in authorized forms for headings to be used in national bibliographies and library catalogues that best meet the language and cultural needs of the particular institution's users".

The Working Group believed that use of record identification numbers which could be included within each agency's authority file could serve to link related forms of headings across authority files. Therefore, the authority files of national agencies should be accessible across the internet through Z39.50 protocols. "Within this context, retrieval would be greatly enhanced by the use of some numbering mechanism to link the associated authority records created by the various agencies, either the local system record numbers or an International Standard Authority Data Number (ISADN) for the entity, as was suggested by IFLA in the 1970's." On this point, Isa de Pinedo stated in the paper previously cited: "This tool [unique identifying number, part of a local, national or international numbering system] should be accepted and available all over the world, being through it that the same entity will be searched, displayed and re-used in the form which best suits the rule-based needs of a library and the habits of its users."⁽¹⁸⁾

The Working Group's final report also commented on the possibilities of cooperating with producers of similar records from the archival and publishing communities as well as with association and other organizations which maintain databases of members and copyright holders for royalty purposes.

Up to this point IFLA work in the area of authority control had progressed without the benefit of the entity-relationship object-oriented analysis technique featured in Functional Requirements for Bibliographic Records. However, in FRBR, the authors clearly state that

the model developed for the study does not cover the extended range of attributes and relationships that are normally reflected in authority records. The model defines the entities that are the focus of authority records...and depicts the relationships between those entities and the entities described in the bibliographic record per se. The model also defines attributes of those entities to the extent that such attributes are typically reflected in the bibliographic record. But it does not analyse the additional data that are normally recorded in an authority record, nor does it analyse the relationships between and among those entities that are generally reflected in the syndetic apparatus of the catalogue....Nevertheless, the Study Group recognizes the need to extend the model at some future date to cover authority data.⁽¹⁹⁾

Because the report of the Working Group on Minimal Level Authority Records and ISADN has not been considered fully satisfactory, especially given its lack of attention to the need for international standard numbering, calls for further work in this area have continued. During a seminar on "The function of bibliographic control in the global information infrastructure" (June 1998), the participants agreed: "A revision of UNIMARC/Authorities should be undertaken [as well as] the development of consistent and

persistent vehicles for the international exchange of authority data and a reconsideration of a numbering system such as the ISADN". The 1998 International Conference on National Bibliographic Services also recommended that "the national bibliographic agency should...develop and promote standards, guidelines, and methods for authority control to facilitate the international exchange of authority data."

In April 1999 the IFLA Division of Bibliographic Control, therefore, set up the Working Group on Functional Requirements and Numbering for Authority Records (FRANAR) with Françoise Bourdon of the Bibliothèque nationale de France as chair. This Group has agreed to focus on three priority tasks:

- to define functional requirements of authority records, continuing the work which produced FRBR;
- to study the feasibility of ISADN; to define possible use and users, to determine for what types of authority records an ISADN is necessary, to examine the possible structure of the number and the type of management that would be necessary;
- to serve as the IFLA liaison to other groups such as INDECS, ICA/CDS, ISO TC46, CERL etc.

The FRANAR Working Group has broad international representation with members including experts from Croatia, England, Finland, Germany, and Russia.

This Working Group held its first meeting in conjunction with the 1999 IFLA Conference. At that meeting, assignments were made to be accomplished for a second meeting in spring or summer of 2000. These tasks include: adopting the entity relationship model for functional requirements; providing information on various numbering systems; and, elaborating the value of how such numbering would be helpful. The chair is also preparing an annotated bibliography on relevant studies and reports for the Group's use; in addition, she will synthesize the work submitted by Working Group members. In addition, Tom Delsey one of the key architects of the FRBR study, will serve as a resource person to FRANAR Study Group.

In September 1999, the British Library, the Library Association, and the Book Industry Communication convened a seminar on "Cataloguing Standards and Metadata for E-Commerce: Converging Goals and Emerging Opportunities for Cross-sector Cooperation". (For an outline of the agenda and access to the slides prepared by the presenters, see:<http://www.bl.uk/information/news/seminar.html>) (20)

Both Delsey and Bourdon attended this meeting. One outcome of the seminar was formation of a Joint Interim Committee has been established by the INDECS affiliate members to advise the FRANAR project. And, at its full membership meeting in November, the Consortium of European Research Libraries (CERL) also agreed to comment on FRANAR proposals. Although this project is still in the formative stages and may take some time to complete, the profession should take close heed of its purpose and progress, given the importance of topic to bibliographic control and also its use of the E-R modeling technique.

Relationships

Essential to the FRBR study's outcomes was the identification of critically important relationships as they operate among Group 1 entities, work, expression, manifestation and item as well as the linkages between Group 1 entities and those found in Group 2 and Group 3. In this section we will discuss the general importance of relationships within the bibliographic universe and for FRBR and then review the relationships within and among the three entity groups.

Relationships are used to provide links between one entity and another and thereby assist users to navigate in the bibliographic universe--whether nationally or internationally--or within a local catalogue, a bibliography or a shared database. These links generally provide the ability for a user to formulate a search query using one or more attributes of the entity (access points) or they serve to explain a relationship with another entity but not necessarily provide a link. In other words, relationships (ideally) allow a user to identify through a particular search all the works of a particular author, all the books published within a specific monographic series, all the conference proceedings of a particular society, all the materials (regardless of format) covering a certain subject, etc.

The Study Group examined a wide-variety of potential relationships within the functions to find, identify, select and obtain for possible inclusion in the national bibliographic record. This is an essential part of the study as relationships were "examined in the context of the entities defined for the model, i.e., they are analyzed specifically as relationships that operate between one work and another, between one expression and another, between a manifestation and a item, etc."[\(21\)](#)

In addition, other relationships are essential to document in the national bibliographic record--for example, the relationship of the creator to the work or the publisher to the manifestation

A. Group 1 Entity Relationships

For the cataloguer, the standard key to creating relationships among works, expressions, and manifestations, is when publishers or authors use terms such as "translation of..." "based on..." "continues..." etc. These relationships are described often within series statements or notes, and organizing elements provide access to the descriptive elements.

Alternatively, there are times when the relationship cannot be precisely described and a general note must suffice (e.g., based on the early poetry of Edgar Allan Poe) and no link to a work or expression is provided. This is in contrast to when a precise relationship between an expression and work (based on "The Raven" by Edgar Allan Poe) is identified and recorded.

Example of the continuous relationship among all Group 1 entities:

```
W   Giacomo Puccini's Tosca
E1  Opera recorded in 1953 at La Scala, Milan, Italy
M1  Audio tape format released in 1984 by EMI
      I1  Audio cassette held in Music Library
      I2  Audio cassette held in Music Library
M2  Compact disc format released in 1984 by EMI
      I1  Compact disc held in Music Library
E2  Opera taped during the March 20 and 27, 1985 performances
      at the Metropolitan Opera, New York City, New York
M1  Videocassette format released in 1985 by Bel Canto Home Video
      I1  Videocassette held in Music Library
```

To end this particular section, we would like to quote directly from the final report:

It should be noted that although the relationships between work, expression, manifestation, and item are depicted in the entity-relationship diagram in a segmented way, they operate as a continuous chain. That is to say that the relationship from work to expression carries through to the relationship from expression to manifestation and those two relationships subsequently carry through to the relationship from manifestation to item. Thus when a relationship is made between an expression and a manifestation that embodies the expression, the manifestation is at the same time logically linked to the work that is realized through the expression, given that the expression has been linked to the work it realizes.[\(22\)](#)

There also exist many other important relationships among Group 1 entities, relationships that provide clarity and precision within the bibliographic universe through specific types of linking relationships. These relationships identify the major types that operate between instances of the same entity type or different entity types. They involve relationships among the same or different entities, including work-to-work, expression-to-expression, expression-to-work, manifestation-to-expression, manifestation-to-manifestation, etc. The final report includes a thorough analysis of the various potential relationships and how they might operate in context of the four primary entities.

We have listed below seven relationship examples that the Study Group recommended being included in the notes area, as appropriate, in the basic level national bibliographic record.

- Whole/part relationships. For example, a book published within a series, a chapter within a monograph, a short story in an anthology, or an individual issue of a serial. These relationships can involve dependent parts that are component parts of a work or a part can be independent of the whole work.
- Translations (normally an expression-to-expression relationship)
- Arrangements (normally an expression-to-expression relationship)
- Revisions (normally an expression-to-expression relationship)
- Supplements, which may include supplements, indexes, teacher's guides, etc. These are often treated as referential works in that they may be so closely connected to the other work that it would not exist by itself.
- Complements, which may include librettos, choreography, cadenzas, etc. These also are often treated as referential works.
- Preceding/succeeding, which refers to a linear progression from one work to another, often serial in nature.

B. Group 1 Entity Relationships with Group 2 Entities

The Group 2 entities are primarily linked to the first group (work, expression, manifestation, and item) by four relationship types, although they can serve as the subject of a Group 1 entity. The logical connections are the "created by" relationship (a link to work), the "realized" relationship (a link to expression), the "produced by" relationship (a link to manifestation), and the "owned by" relationship (a link to item).

- The "created by" relationship ensures that all works (as an abstract entity) by a person or corporate body are linked to that person or corporate body.
- The "realized by" relationship, similar in function to the "created by" relationship, ensures that each specific person or corporate body responsible for the expression

(the specifics of the realization or execution) are identified and linked to that person or corporate body.

- The "produced by" relationship may link a manifestation to the person or corporate body responsible for publishing, distributing, fabricating or manufacturing the manifestation. This connection identifies this person or corporate body and could provide the linking of all manifestations produced by the individual person or corporate body.
- The "owned by" relationship may link an item to a person or corporate body that is the owner or custodian of the item. This relationship identifies the ownership of item and provides for the capability of inventorying a collection of items.

C. Subject Relationships

All entities found in the three groups may be linked through a subject relationship back to Group 1 entities. However, Group 3 entities (most notably concept, object, and event) often provide linkage only within subject relationships to ensure that all works relevant to a given subject may be linked to that subject. Subject heading authority control was not part of this study but we believe it would benefit from the E-R modeling technique.

The Basic Level National Bibliographic Record (BLNBR)

The FRBR Study Group applied the E-R methodology primarily to relate bibliographic data to the needs of users for the purpose of producing a list of data elements to be included in the bibliographic records which national bibliographic agencies and libraries create and distribute. This list, which is the practical result of the theoretical study that makes up the first six chapters of the FRBR publication, is the topic of Chapter 7: "Basic Requirements for National Bibliographic Records." [\(23\)](#)

The data elements recommended for the BLNBR are those needed to assist the user to find the works for which a given person or corporate body is responsible, to find all manifestations embodying the expression of a given work, to find works on a given subject and to find works in a given series. The data elements include also bibliographic fields necessary to identify a particular expression or manifestation of a work as well as to select a work, expression or manifestation and to obtain a manifestation. Together these needs represent the basic level of functionality that the bibliographic record must achieve.

The Study Group next evaluated all possible data elements they could conceive in order to select those elements which would provide this basic level of functionality. The essential elements were listed in two groups: descriptive data elements - including any that might be applicable only to a particular type of material - and organizing elements. We suspect that there is wide, but not universal, consensus regarding the list of descriptive elements, that is, the ones recommended are indeed necessary for meeting the wide variety of user-needs .

Descriptive Elements

The following are the descriptive fields that are judged to be appropriate to the BLNBR:

Title and statement of responsibility area

title proper (including number/name of part)

parallel titles(s)

statement(s) of responsibility identifying the individual(s) and/or group(s)

with principal responsibility for the content

Edition area

edition statement

additional edition statement

Material (or type of publication) specific area

numbering (serials)

mathematical data statement - coordinates (cartographic work)

mathematical data statement - scale (cartographic image/object)

musical presentation statement - type of score (musical notation)

Publication, distribution, etc. area

place of publication, distribution, etc.

name of publisher, distributor, etc.

date of publication, distribution, etc.

Physical description area

specific material designation

extent

dimension

Series area

title proper series

parallel titles(s) of series

first statement of responsibility relating to the series

Note area

note on the form of expression

note on language

note on distinguishing characteristic of expression

frequency statement (serials)

note on medium of performance of the expression
(musical notation or recorded sound)

note on edition and bibliographic history - successor

note on edition and bibliographic history - supplement

note on edition and bibliographic history - complement

note on edition and bibliographic history - revision

note on edition and bibliographic history - translation

note on edition and bibliographic history - parent work

note on edition and bibliographic history - arrangement (music)

note on physical description - medium

note on physical description - foliation (hand-printed books)

note on physical description - collation (hand-printed books)

note on physical description - reduction ratio (microforms)

note on system requirements (electronic resources)

note relating to binding and availability - source for
acquisition/access

note on use/access restrictions

note on mode of access - mode of access (remote access electronic
resources)

note on mode of access - access address (remote access electronic
resources)

Standard number (or alternatives) and terms of availability area

standard number (or alternative)

Organizing Elements

As mentioned already, FRBR's scope went beyond the traditional focus on bibliographic description to include in its purview a consideration of access points or "organizing elements." Those considered essential to the BLNBR comprise:

Name headings

name heading(s) for person(s) and/or corporate body(ies) with principal responsibility for the work(s)

name heading(s) for person(s) and/or corporate body(ies) with principal responsibility for the expression(s)

Title headings

title heading(s) for the work(s)

addition to uniform title - language

addition to uniform title - other distinguishing characteristic

addition to uniform title - medium of performance (music)

addition to uniform title - numeric designation (music)

addition to uniform title - key (music)

addition to uniform title - statement of arrangement (music)

Series headings

heading for the series

Subject headings / classification numbers

subject heading(s) and/or classification number(s) for the principal subject(s) of the work(s)

General Principles for Application

If a mandatory data element, for example a series statement, is not present in the item being catalogued, then, of course, the BLNBR's requirements pertinent to that data element would not apply. Also for several of the data elements given in the lists, national bibliographic agencies are authorized to interpret them and decide whether or not to include them. For example, parallel titles may be included to the extent that particular national agencies consider them important to their users. This may mean that one bibliographic agency would require the first parallel title and any subsequent in the language(s) of the agency, for example. Another might want to have cataloguers transcribe all of them. Similar qualifications are given for: (1) extent of carrier; (2) dimensions of carrier; (3) parallel titles of and statements of responsibility for series; and, (4) several notes.

There is also a general relaxation of requirements regarding technical notes, any of which may be omitted if the information is not readily available, as is sometimes the case with hand-held electronic resources, for example.

As for organizing elements, all are mandatory when applicable except: (1) that language is not required to be added to uniform titles except to distinguish multiple expressions of the same work, and (2) that

medium of performance, numeric designation, and key are required only for musical works with non-distinctive titles.

FRBR recognizes that in some cases national bibliographies contain categories of material which are treated as "listed" only and not given normal bibliographic entries. In these cases the BLNBR is not required. FRBR also accepts that for other categories such as rare books, national agencies may want to go beyond BLNBR. As a result the Basic Level National Bibliographic Record should be viewed as applying to most but not all publications, and while a national agency may enhance the basic level to any degree it wishes it should not omit any designated element except for those materials that selected for listing only.

Current Developments: Use of FRBR Within Cataloguing Education

Some of the earliest supporters of and contributors to the FRBR study were faculty who teach cataloguing in library and information science schools. Of the five study consultants, one was a professor of cataloguing at the University of California, Los Angeles (Ms. Elaine Svenonius). One of the five Study Group members teaches cataloguing at the University of Toronto (Ms. Nancy Williamson). And, among the thirteen consultants, two were professors of cataloguing--one at Oslo College (Ms. Inger Cathrine Spangen) and the other at the University of Barcelona (Ms. Assumpciò Estivill). Before the study was sent out for world-wide review, a preliminary discussion session was held at the 1995 IFLA conference held in Havana, Cuba, and Ms. Inger Cathrine Spangen and Ms. Assumpciò Estivill discussed and supported the preliminary aspects of the study. As part of the worldwide review of the proposed study draft, several professors in library schools (representing six different countries) critiqued the study.

Obviously the study is widely available to professors and graduate students within professional library school programs--either through purchase or electronically through the IFLA Web site. We believe that they have found the study's methodology to be of interest to teaching programs because of its theoretical methodology and its neutrality to specific cataloguing codes. Since its publication, it has become increasingly common for the study to be discussed early in a cataloguing course while analyzing principles that might underlay cataloguing rules or to serve as a case study in the application of E-R modeling techniques.

In the current 2000-2001 Action Plan of the IFLA Section on Cataloguing, there is a specific action item related to FRBR and library school cataloguing curricula, and in particular a reference to the "Danish model." Given IFLA's interest in this model, we will include in this presentation a brief discussion of that model. To start with we will again quote from the section's action plan.

Goal 3: Promote the Functional Requirements for Bibliographic Records (FRBR) study and its recommendations, and take follow-up action to develop new descriptive standards and standards for access points and to develop a new approach to the bibliographic universe.

And the specific action item: *Promote the Danish model to teach FRBR in library schools in other countries.*

The action plan refers to the use of FRBR as the theoretical foundation currently being used in Denmark for teaching cataloguing and system analysis, design and evaluation. Ms. Kirsten Strunck, Department of Information Studies, Royal School of Library and Information Science in Copenhagen, gave a paper at

the 1999 IFLA Conference in Bangkok, Thailand entitled "About the use of 'Functional Requirements for Bibliographic Records' in teaching cataloguing."(24)

In her paper she discussed a model for using the FRBR in library science curricula. For your further information, the paper itself is available on the IFLANET (<http://www.ifla.org/IV/ifla64/084-126e.htm>).

What then is this Danish model and why has it elicited such interest and support by the IFLA Section on Cataloguing?

First of all, we would like to provide some background to the Danish reasons for their intense interest in FRBR. In her paper, Ms. Strunck stated that the reason why this theoretical approach resonates well within the Danish cataloguing community is that there is a "long tradition for focusing on the why of cataloguing rather than how to catalogue when teaching this discipline."(25)She went on to state that prior to the publication of FRBR, Cutter's objectives for the catalogue and the Paris Principals' catalogue functions were used to provide the theoretical foundations for cataloguing. Of particular concern in using Cutter was the lack of recognition of the differences between work and manifestation. While the Paris Principles do recognize these differences, they were seen as too narrow in scope.

Even before FRBR was approved and published, Danish cataloguing professors began to use the 1997 draft version (the version used for the 1997 world-wide review) for special cataloguing courses. Following the formal publication of the final report, FRBR began to be used in standard cataloguing courses. But, why is the FRBR so successful in the Danish cataloguing curriculum? Ms. Strunck explained this success in her paper through the following observations:

- FRBR focuses on the bibliographic record and not the catalogue. This is particularly important now that the catalogue and collection are changing through technological advances in the definition of access.
- FRBR's basic functionality broadly deals with all types of bibliographic data, including:
 - Descriptive data
 - Headings for author and title data
 - Subject data
 - Local data
- FRBR is user-oriented and supports the generic user tasks, including:
 - To find
 - To identify
 - To select
 - To acquire or obtain
- The distinctions among the work, expression, the manifestation and the item are consistent and explicit
- The methodology and terminology are up-to-date and correspond to terminology used in other system applications.

Without simply rereading Ms. Strunck's paper, we would like to summarize how FRBR is used in the Royal School of Library and Information Science in Denmark within the basic teaching of cataloguing and in the master programme's courses on system analysis and design.

In basic cataloguing, examples of different cataloguing codes are used to analyze how bibliographic data of various types of materials are represented and used. FRBR's user tasks are introduced and discussed in terms of information retrieval process. Following this, the basic level of functionality is introduced as it is

related to user tasks and the entities of work, expression, manifestation and item, as well as other specific entities.

In general, Ms. Strunck reported that students have varying success in understanding the FRBR entities. The entities of person, corporate body, concept, object, event and place are easier to comprehend than those of work, expression, manifestation, and item. However, as mentioned earlier when generally discussing Group 1 entities, when specific examples of different entities related to the same work are discussed, the rationale for the need for these four entities often becomes apparent. The course content next leads to the discussion of work and how one determines the differences between works and when one work has changed enough that a new work is created.

Ultimately, the curriculum leads to the implications of the FRBR requirements including, we suspect, lively discussions on such topics:

- The collocating and relating function
- Types of authorship and authority control
- Levels of description
- Individualizing data
- Publishing related data
- System requirements data for electronic manifestations

Within the master's programme at the Royal School of Library and Information Science, FRBR is used as a "concrete example of E/R analysis technique on bibliographic data and to strengthen the knowledge of bibliographic data and its function."[\(26\)](#)

Moreover, FRBR has been used as the basis for major and minor papers. In terms of system evaluation, the faculty have used FRBR as the basis to propose methodologies and criteria for system-oriented and user-oriented evaluations at several levels, including the system level, the level of cataloguing rules and formats, and the record level itself.

Ms. Strunck concludes her paper by stating that FRBR "is our frame of reference when discussing cataloguing phenomena. We use these requirements as the ideal or standard against which we measure possible solutions to cataloguing problems. We are satisfied with our experiences using 'Functional Requirements for Bibliographic Records' and intend to go on as we have started."[\(27\)](#) In the Danish model, FRBR is thoroughly integrated in the curriculum for basic instruction for cataloguers through research oriented system analysis and design. FRBR's strength is that, as a model, it can be used to analyze and test for strengths and weaknesses any cataloguing code and ultimately system designs-- indeed valuable components of any cataloguing curriculum.

Current Developments: FRBR's Impact on Standards for Bibliographic Records

When the IFLA Section on Cataloguing's Standing Committee approved FRBR in 1998, it also decided that the ISBD Review Group should initiate a full-scale review of IFLA's "family of ISBDs" to ensure conformity between the provisions of the ISBDs and those of FRBR - in particular, to achieve consistency with FRBR's data requirements for the basic level national bibliographic record (BLNBR).

In all ISBDs, national bibliographic agencies are requested to "prepare the definitive description containing all the mandatory elements set out in the relevant ISBD insofar as the information is applicable to the publication being described."[\(28\)](#)

To facilitate implementation of this principle, the ISBDs designate as "optional" those data elements which are not mandatory when applicable. (In the case of particular ISBDs, see the Outline (0.3) to ascertain which data elements are optional.) Therefore, the main task in reconciling the requirements of the existing ISBDs with the FRBR recommendations for the BLNBR will entail a review of the ISBD data elements which are now indicated as mandatory to make optional any which are optional in the BLNBR. (In no case is a data element mandatory in BLNBR but optional in the ISBDs.)

The ISBD Review Group has now concluded its review of the International Standard Bibliographic Description for Monographic Publications (ISBD(M)), last revised in 1987. The changes which the Review Group currently is considering to propose in the next iteration of this standard are listed below. Soon these proposals will be posted to IFLANET and that event will be followed by a three-month comment period. Assuming a favorable outcome of the world-wide review, ISBD(M) will be revised, republished by K. G. Saur, and made freely available on IFLANET. Listed below are the changes under consideration at this time.

ISBD(M):

International Standard Bibliographic Description for Monographic Publications

Revised edition. 1987

CURRENT ISBD(M):	CHANGE TO:
1.3 Parallel title	1.3 Parallel titles(s) (optional)
1.4 Other title information	1.4 Other title information (optional)
1.5. Statements of responsibility	1.5 Statements of responsibility
First statement	First statement
Subsequent statement	Subsequent statement (optional)
2.3 Statements of responsibility relating to the edition	2.3 Statements of responsibility relating to the edition (optional)
2.5 Statements of responsibility following an additional edition statement	2.5 Statements of responsibility following an additional edition statement (optional)
5.2 Illustration statement	5.2 Illustration statement (optional)
5.3 Dimensions	5.3 Dimensions (optional)
6.2 Parallel title of series or sub-series	6.2 Parallel title(s) of series or sub-series (optional)
6.4 Statements of responsibility relating to the series or sub-series	6.4 Statements of responsibility relating to the series or sub-series (optional)
8.3 Terms of availability and/or price (optional)	8.3 Terms of availability and/or price (optional)

In the Specification of Elements section of ISBD(M):

Note area

7.1.2 Notes on the nature, scope, literary form, purpose or language of the publication

7.2 Notes on the edition area and the bibliographic history of the publication

Note area

7.1.2 Notes on the nature, scope, literary form, purpose or language of the publication

7.2 Notes on the edition area and the bibliographic history of the publication

A similar study has recently been concluded regarding the impact of FRBR on the International Standard Bibliographic Description for Serials (ISBD(S)) and the International Standard Bibliographic Description for Cartographic Material (ISBD(CM)), both of which are now in process of revision. Modification of the other members of the ISBD "family" will follow, one by one.

The Functional Requirements for Bibliographic Records and the BLNBR were topics of discussions at the 1998 International Conference on National Bibliographic Services, where among the resolutions adopted it was agreed to recommend: "National bibliographic agencies should adopt the components of the Basic Level Record recommended in the final report of the IFLA Study Group on the Functional Requirements for Bibliographic Records." [\(29\)](#)

It is one thing to propose such a sweeping mandate and another to realize it!

So, IFLA's Section on Bibliography's Standing Committee included in its recently updated Action Plan for 2000-2001 a provision to encourage national libraries and agencies to study BLNBR and implement this resolution. The Standing Committee will seek, in cooperation with the Sections on Cataloguing and on National Libraries, to prepare a briefing paper to explain the components BLNBR for distribution to the membership of Council of Directors of National Libraries (CDNL) with the recommendation that each national bibliographic agency adopt it.

The Library of Congress (LC) introduced a new level of cataloguing last year, one which we call "core level". The "core level" record is somewhat less full than had been previously applied. Most significantly, when creating a core-level record, the cataloguer is given more discretion to reduce the number of notes as well as the number of access points. How many are given beyond those considered essential for retrievability will depend on the cataloguer's assessment of the research value of the item being catalogued. This core-level is the default, with fuller level reserved for reference works and important scholarly works. When FRBR was published, staff at LC made a comparative study of the data elements specified for its core-level record and the data elements called for by BLNBR. We found that in general the core-level is more generous than BLNBR, but we also found that we needed to upgrade LC's core-level specifications to emphasize provision of more uniform title entries.

Other national libraries have also been aware of BLNBR and have found that their cataloguing standards meet or exceed BLNBR, but the campaign planned by the Section on Bibliography, mentioned above to alert the CDNL membership to BLNBR, should ensure that this important result of the FRBR project will come to the attention of the target audience and thereby further foster standardization of records that might be exchanged or otherwise shared internationally.

Staff at the Deutsche Bibliothek inform us that the cataloguing records they produce also meet or exceed the BLNBR specifications. It is significant that other states are also already considering the BLNBR. >From the Report of the Advisory Group on the Future of the Australian National Bibliography comes this recommendation: "As far as is possible for a cooperatively developed resource, the information provided about each item should conform to the data requirements for a basic level national bibliographic record", as set out in FRBR, except that, " to facilitate access to publishers' addresses and other contact

information for non-mainstream publications, libraries and/or the ISBN Agency include this contact information in the bibliographic record at the time of cataloguing."[\(30\)](#)

It would be interesting to determine the extent to which the BLNBR has been considered by the authors of the *Regole italiane di catalogazione per autori* (RICA) and the extent which the particular specifications of the descriptive and organizing elements is consider satisfactory for the needs of bibliographic records for Italian publications.

It seems logical that the authors of national cataloguing rules should take heed of FRBR and also implement its recommendations, just as they implemented the ISBDs many years ago. Some of the major cataloguing codes, such as AACR2 and RAK are currently undergoing revision, so we have contacted individuals associated with this work to ask whether they will take account of the FRBR recommendations - in particular, the provisions for the BLNBR.

In AACR2 there are currently defined three levels of cataloguing, one for short records, one for normal (standard), and one for fullest records (sometimes prepared for rare books, for example). In the course of the current revision project, the authors of AACR2 will consider BLNBR's specifications as a replacement for the current provisions given for the middle (or normal or standard) level. Replying from Germany, members of the Konferenz für Regelwerksfragen inform us that "FRBR recommendations are certainly [being] taken into account within the [RAK] revision process. Particularly the provision of FRBR 7.3 [i.e. BLNBR] are considered and followed."

However, it appears that for at least one national cataloguing code BLNBR may not be found satisfactory and might be viewed as much too minimal, as is explained in M. N. Smirnova and A. V. Shershova's paper "Russian Rules of Bibliographic Description and Functional Requirements for Bibliographic Records".[\(31\)](#)

Here the authors state: "We do not consider the minimum data requirements concerning the descriptive element of the B[ibliographic] R[ecord] the best recommendation for our B[asic] B[ibliographic] R[ecord] BBR is the base for constituting a wide range of bibliographic production.... [I]t must have detailed strct[ure]ed descriptive elements." Specific objections relate to the optionality FRBR allows for omitting parallel and other titles and its requirement that statements of responsibility identify "individual(s) and/or group(s) with principal responsibility for the content." These authors, on the other hand, believe that in this area "eliminating or shortening of any data should be forbidden...." Their position is that to facilitate "copy cataloguing" or "reuse", those producing bibliographic records should absorb the "larger costs and efforts" necessary to provide fuller records than the BLNBR so that those in order institutions can use these records with minimal modification. This fuller level of cataloguing is that appropriate for the national bibliography, "where the full list of descriptive elements should be used as well as the multi-part, multilevel, hierarchical and complex structures of [B]ibliographic [R]ecord functions". According to the authors, other institutions may catalogue with lesser detail. Whether the Russian rules now undergoing revision will actually implement these recommendations remains to be seen.[\(32\)](#)

Another aspect of FRBR of potential interest to makers of national cataloguing codes is the E-R modeling technique used in reaching their recommendations and which FRANAR intends to apply. Tom Delsey who contributed extensively to development of FRBR's entity-relationship object-oriented analysis was later asked to apply this methodology to AACR.[\(33\)](#)

As a result of this study, Mr. Delsey is recommending restructuring the rules in Part I (description) to replace the current "class of material" approach (with a chapter for books, another for maps, etc.) with an area-by-area approach (with a chapter on rules for title and statement of responsibility, followed by a

chapter on edition, etc.). Mr. Delsey also has applied the E-R approach to the AACR rules for choice and form of access points and concluded that there is need for a more consistent approach to fully satisfy user requirements. In both areas - description and access - he points out that digital materials introduce a host of problems and conditions not currently provided for by AACR2. Certainly the concept of "work" will be re-visited, and the authors of RAK who are interested in greater harmonization of their rules with AACR have said that they will be following this reconsideration in particular.

Beyond traditional bibliographic standards, there is potential for application of a modeling approach to the emerging metadata schemes. A number of the major schemes - Dublin Core, Digital Object Identifier, and INDECS - have shown interest in developing a conceptual model to serve as a common framework for metadata schema. In a recent interview, Delsey points out that indeed those who are pursuing this interest have taken the FRBR model to use as a starting point "for the development of a high-level model that will reflect the broader range of data required to support resource discovery and transactions ranging across the spectrum of information resource management." (34)

This view is underscored by Norman Paskin, in his article "DOI: An Overview of Current Status and Outlook." He observes:

...we can move on to discuss "what the DOI identifies" in more detail. Content topology -- the analysis of intellectual property entities in terms of all the attributes which are necessary for unique specification - has been carried out in theoretical terms, in particular by the library community in the context of cataloguing requirements, and, practically, in the world of music publishing and trading, from which the DOI has benefitted by including music organisations in its membership. The majority of the initial DOI community (traditional publishing organisations) came to this concept relatively recently. At the time the DOI was being conceived (1995-97), there was recognition that the growth of digital publishing of text was creating the need to recognise a change from single to multiple manifestations of a common underlying abstract work (a commonplace in the music publishing world [CIS]). This is a distinction seen in logical analyses such as IFLA's "Functional Requirements of Bibliographic Records" [IFLA], but also as an operational distinction. For example, a journal publisher has a production line that is editing articles for publication, and the publisher will use a number to identify the entity being processed. In a print-only world, that process resulted in a single published entity (a printed manifestation). In a print-plus-digital world, the production line will bifurcate at the end and produce two (or more) entities (e.g., a printed article and an HTML file). Those two entities are related (they are "the same article"). The identifier that is on the production line item and carries forward into both the published entities (telling that they have something in common) is an identifier of the work. This recognition, which drew on existing practical analysis and implementation in the music world, led to proposals for identifiers of underlying abstract works such as PII (Publisher Item identifier) by the STI group, and the possible extension of the proposed music ISWC (International Standard Work Code) to text items within ISO TC 46 SC9, and is now an essential tool in, for example, discussions of persistent reference-linking [Reflink]. Subsequently, these initiatives have converged with DOI considerations of identifiers and their associated metadata.(35)

It is indeed true that the ISO/TC 46/SC 9 Working Group 2 which is developing the International Standard Musical Work Code (ISWC) also has turned to FRBR's entity analysis approach in pursuing its task, citing in particular interest in the sections relating to the concepts of "work", "expression", and "manifestation" (36). And, with regard to Reflink and related initiatives, in their article "Reference Linking for Journal Articles" (*D-Lib Magazine* (July/August 1999) v. 5, no. 7/8, Priscilla Caplan and William Arms credit FRBR with providing a framework by which to launch study in this area because FRBR "provides a vocabulary for distinguishing between related aspects of an intellectual entity".(37)

Thus it is clear that both the results of FRBR's investigation, the specification of the Basic Level National Bibliographic Record, and the E-R methodology used to reach these results have influenced a wide range of efforts to advance bibliographic standardization. Most of this work is now in progress, so it's likely that FRBR's benefits will continue to be felt by the profession for some time to come.

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