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BIBLIOGRAPHIC RECORDS IN THE COMPUTER AGE

by

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Try entering the search “Lord of the rings” into the following websites: Google, Amazon, British Library Public Catalogue and the Library of Congress Catalogue. The results returned are very varied, but the way in which they are presented is not. For example, Google returns 2.8 million hits in no obvious order. Behind the scenes, Google applies complex criteria to ensure that those most closely matching the search criteria are presented first, while excluding those who wish to advertise the presence of their website, irrespective of its relevance (but still manages to arrive at eBay first!) [1]. The British Library Public Catalogue returns a less extravagant 98 hits, sorted by descending date of publication. The Library of Congress Online Catalog offers patrons a choice of sorting by title, date of publication, or author. Amazon defaults to sorting by volume of sales, but customers may also choose to sort by price or by title or date of publication.

The user, confronted with a large results set, has reached a decision point, sometimes referred to as the, “fork in the road”. What is the next step on the path towards resource discovery? Refining the search criteria is most effective when a known item is being sought and when the user is able to anticipate the vocabulary that will signpost the destination. Browsing all the results is an option, but this is a long road and is only feasible with a limited results set. Browsing wastes a lot of time and may be confusing, as the undifferentiated results set contains records for different media, different editions and translations of the text alongside critical works. How much easier if the user could enter into a dialogue with the catalogue and be guided through the wealth of the collection to the required nugget. Yahoo, for example, as well as offering a list of 2.4 million hits, also sorts results by medium: e.g. the novel; the movie. How are libraries responding to this challenge?

The “Functional Requirements for Bibliographic Records” is a data model commissioned by IFLA, “to define the functional requirements of bibliographic records in relation to the variety of user needs and the variety of media.”[2] FRBR is a recognition that OPACs and WebPACs are not the whole solution. Resource discovery must also be addressed through the underlying structure of bibliographic data. The study recognises that increasing demands are being placed on the catalogue. Whereas at one time it was sufficient that the catalogue enabled the user to determine whether the library held a particular book, it is now expected to lead the user to resources held in other institutions, irrespective of medium, and to deliver ILL or full text services as well. The study identified four fundamental user tasks that must be supported by the catalogue:

- To **Find** materials corresponding to stated search criteria (e.g. by an author, on a topic, etc.).
- To **Identify** an item as being that sought or to distinguish between two items with the same title.

- To **Select** an item appropriate to the user's needs (e.g. a specific edition, a version in a specific language, or format).
- To **Obtain** the item (by purchase, request for loan, or access to an on-line resource).

The study employed entity-relationship modelling to define the entities that were of interest to users of bibliographic databases and then charted the relationships of each entity to other entities. Entities were viewed as falling into three groups. The first group comprised objects of intellectual or artistic content and was sub-divided into levels labelled work, expression, manifestation and item (see panel). The second group of entities were those responsible for the intellectual or artistic content, sub-divided into persons and corporate bodies. The third group contained the entities forming the subject of intellectual or artistic content (including entities in the first two groups), and sub-divided into concepts, objects, events and places.

The potential of FRBR can be illustrated by imagining how a "FRBRised" database would present the outcome of the search for the **work**, "Lord of the Rings". By searching for the "work", the user is able to eliminate such clutter, as related works, e.g. W.H Auden's, *Good and evil in The lord of the rings*, and false drops, e.g. "Lord Peter rings the changes". The user would instead be presented with high level records, for the different **works** called "Lord of the Rings". For example, the results from the British Library Public Catalogue include the following work level records:

The Lord of the Rings / J.R.R. Tolkein [Book]
The Lord of the Rings. Part 1. The fellowship of the ring / J.R.R. Tolkein [Book]
The Lord of the Rings. Part 2. The two towers / J.R.R. Tolkein [Book]
The Lord of the Rings. Part 3. The Return of the King / J.R.R. Tolkein [Book]
The Lord of the Rings / John Clare [Music]
The Lord of the Rings [Cards]
The Lord of the Rings. Theme / Stephen Oliver [Music]

The number of results to be examined is thus significantly reduced. Instead of 98 postings the user gets only 7. These work level records can be assessed at a glance and act as signposts enabling the searcher to choose the most promising direction to pursue the search. If the user is interested in the "Lord of the Rings the Musical", the other postings can be ignored and the record for the musical work selected. However if the user is interested in different translations of the work, these may be viewed at the expression level.

<i>The Lord of the Rings</i> / J.R.R. Tolkein.	[English]
<i>Pán prstenů</i> / J.R.R. Tolkein, trans. Stanislava Pošustová .	[Czech]
<i>Ringenes herre.</i> / J.R.R. Tolkein, trans. Ida Nyrop Ludvigsen.	[Danish]
<i>Le seigneur des anneaux</i> / J.R.R. Tolkein, trans. Francis Ledoux.	[French]
<i>Władca pierścieni.</i> / J.R.R. Tolkein, trans. Maria Skibniewska.	[Polish]
<i>Sagan om ringen.</i> J.R.R. Tolkein, trans. Åke Ohlmarks.	[Swedish]

There are two manifestations of the Czech translation. A user drilling down to this level, can choose between one a samizdat edition, published during the 1980s, and an edition published, after the velvet revolution, between 1990 and 1992. However if the user only wants a Czech version and doesn't mind which edition, the request could be

placed from the expression level record. There is also the option to go down to the item level, if one's requirements are very specific, for example an autographed copy or a copy with annotations by the author.

The power of the model is very evident when applied to non-book material which exists in *multiple expressions*, such as performances of classical music and transcriptions of texts and music scores into accessible formats such as Braille, Moon, spoken word recordings and large print and *multiple manifestations*, such as different digital formats, but what will FRBR mean for cataloguing and the costs of cataloguing?

The creation of a structure of linked entity records undoubtedly has important implications for organising and resourcing cataloguing. The extent of this impact is still being evaluated. The final report on FRBR itself makes it clear that the item in hand remains the authority for the content of the catalogue record nevertheless, there is concern that the FRBR model's emphasis on relationships between entities is in conflict with the "pre-coordinated" approach of AACR and MARC. The Anglo American Cataloguing Rules are founded on the principle of cataloguing the item in hand because this has been found to be an efficient way to work. The MARC exchange model is also founded on the principle of distributing records that describe the information resource without any explicit distinction between work, expression or manifestation.

These concerns are being addressed through research and trialling. The Library of Congress has also carried out a 'functional analysis' on MARC 21 now available as 'Displays for multiple versions from MARC 21 and FRBR'. [4.] A recent study of records in WorldCat reports that only a very small proportion of works can be characterised as complex. Nevertheless this small percentage of works accounts for a much more substantial proportion of holdings. The authors conclude that the vast majority of works will only ever exist in a single manifestation and therefore the application of FRBR to those will be no more resource intensive than current methods [5]. The FRBR model may well prove to be a more efficient method of working for these complex works because, rather than each catalogue record being created as a whole, it would be possible to catalogue new editions by linking a new manifestation to pre-existing records for the work or expression. This is a return to the principles of the guard book, in which new editions and related works were inserted under the first edition or parent work. What was a complex method of working in a print environment, is well suited to the electronic environment.

The IFLA Cataloguing Committee is reviewing the impact FRBR will have on the *International Standard Bibliographic Descriptions*. The Joint Steering Committee for Anglo American Cataloguing Rules is considering the implications of FRBR for the next major revision of AACR. The Machine Readable Bibliographic Information (MARBI) committee is reviewing the potential implications of FRBR for the exchange of MARC records [6]. One system developer is already advertising their Integrated Library System as an implementation of FRBR [7].

The Functional Requirements for Bibliographic Records set out to update the cataloguing model for the computer age. Ironically however by advocating a departure from the straight-jacket of the 5x3 card FRBR marks a return to an earlier

tradition of cataloguing, in which the catalogue rather than the record is seen as the end product. The combination of the FRBR structure with modern computer system offers enormous potential for improving the efficiency of resource discovery, but the benefits this confers are being weighed with the costs of implementation, in particular of retrospective implementation. Much research is underway, but this remains an area in which more research and application studies would be welcome.

Work: an abstract entity not represented by a material object. [e.g. Homer's Iliad] Revisions, updates, abridgments or enlargements, additions of parts or accompaniment to a musical composition, translations, musical transcriptions, and dubbed and sub-titled films are deemed to be expressions of the same work. It only becomes a new work when there is a significant degree of independent intellectual or artistic effort – as with for example paraphrases, adaptations for children, musical variations on a theme, dramatizations, abstracts and summaries.

Expression: the realisation of a work in alpha-numeric, musical or choreographic notation, sound, image, object, movement or any combination of these. Changes in form (e.g. from alpha-numeric to spoken word) result in a new expression as do translations from one language to another.

Manifestation: the physical embodiment of an expression. Manifestation represents all the physical objects that bear the same characteristics of content and physical form. A manifestation may be a single object (an author's manuscript, an original oil painting) or a number of copies of the object. New manifestations are created when there is a change in physical form (changes in content result in a new expression). This includes changes in typeface, font size, page layout, physical medium (e.g. paper to microfilm), and container (change from cassette to cartridge for a tape) as well as changes in publisher.

Item: a single exemplar of a manifestation. It is a concrete entity, which can be a single physical object (e.g. a copy of a one-volume monograph) or may comprise multiple physical objects (e.g. a monograph issued as two separately bound volumes). Defining item as an entity enables the identification of individual copies of a manifestation and description of characteristics unique to a particular copy and that relate to transactions such as circulation, etc.

Further reading

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- Home page of the IFLA Working Group on FRBR <http://www.ifla.org/VII/s13/wgfrbr/wgfrbr.htm>

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