FRBR and the Bibliographic Universe, or, How to Read FRBR as a Model

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Overview

- Why am I here?
- Models and conceptual models
- ER models
- FRBR
- Conceptual models in cataloging
- What FRBR does for us
- A few caveats
Defining “Model”

- Many definitions exist, similar to these:
  - an artifact or description that stands for or represents something else
  - a description or set of axioms that predicts the features or attributes of something else
  - a simplified description or explanation of a complex entity or process

Types of Models

- Models are of different types and are used in a wide variety of environments, for example:
  - scale models (architecture)
  - representational models (engineering)
  - mathematical models (scientific research)
  - conceptual models (cataloging)
Functions of Models

- Models serve a wide variety of functions, for example, models may:
  - predict behavior, events or other phenomena;
  - test theories;
  - demonstrate a potential finished project;
  - improve products, processes or technologies.

Conceptual Models

- Conceptual models are sometimes defined as a type of theoretical model
- A theoretical model often “assumes away many complications while highlighting limited aspects of the object” (Mäki)
Model as Simplified Description

- This definition of model - “a simplified description or explanation of a complex entity or process” - fits conceptual models like FRBR best.

Love & Work

- Conceptual models can model things, or processes, or abstractions.
- All of these are difficult to model, but abstractions most of all.
- Although we share understandings of abstractions such as “love” and “goodness”, how do we know they are really there?
- The only thing we can see and touch to verify their existence are things that are observable, like kissing (for love), or returning someone’s lost money (for goodness).
Modeling Abstraction in FRBR

One reason that FRBR may be difficult for some people to understand is that it is a model of abstractions such as “work” and “expression”.

Work Verifications

With an abstraction such as “work”, all we have to verify its existence are:

- items and what they say about themselves (e.g., “translation of Amy Tan’s The Joy Luck Club into Swahili”) or others say about them, and
- user behaviors (e.g., users who ask for a copy of Tale of Genji, and do not want a particular manifestation or expression).
An entity-relationship (ER) model is a specific type of conceptual model. An ER model specifies the structure of a conceptual model. Peter P. Chen introduced this method of modeling in 1976.

ER models identify (at least) three things:
- entities (“things”, either physical or abstract)
- attributes (properties of entities)
- relationships (interactions among entities).

Diagrams in FRBR illustrate ER modeling structure.
Purpose of ER Models

- ER models were created to improve the design of database management systems.
- ER models model the real world to make database operations successful and useful.

More on ER Models

- Because ER models created for specific purposes:
  - they highlight specific, limited aspects of what they are modeling, and
  - those aspects may change from one purpose to another.
- E.g., in FRBR “publisher” is an attribute of a manifestation; in another ER model, “publisher” might be an entity, which has attributes such as “name”, “address”, etc.
Evaluating Conceptual Models

- Conceptual models such as FRBR should not be viewed as being true or false, but as being good or bad (or somewhere in between) at fulfilling their purpose.
- One could also say that such-and-such a model is a successful or not-so-successful explanation.

True or False? Good or Bad?

- A conceptual model might be “true” to the extent that it explains accurately, but it may fail in its purpose (and so be a bad model).
- In theory, a model with many inaccuracies could be better than one with few, because it is more successful at fulfilling its purpose.
- Quite different conceptual models of the same phenomenon could all be good (or bad).
Good & Bad ER Example

- In FRBR, “publisher” is an attribute, however…
- An acquisitions system *might* need publisher to be an entity, for example:
  - publisher {entity} sells {relationship} item {entity}
- In this case, FRBR would have to be modified to make it possible to track acquisitions.
- Neither version of FRBR would be wrong, or false; they would just be different.

FRBR as a Model

- FRBR is a conceptual model and an entity relationship model.
- It is a simplified explanation of a complex entity (documents).
- It is a model that describes and relates abstractions (works, authors, subjects).
- These abstractions are often the object of a user search in the catalog.
“… commonly shared understanding”

From *FRBR*, 1998, p. 2:

“The aim of the study was to produce a framework that would provide a clear, precisely stated, and *commonly shared understanding* of what it is that the bibliographic record aims to provide information about…” [emphasis added]

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**FRBR & the Real World**

- FRBR is not, and does not intend to be a complete account of the real world – It “does not carry the analysis to the level that would be required of a fully developed data model.” *(FRBR, p. 4)*

- It presents a way of interpreting, or explaining the world to help us build better catalogs.

- FRBR is only one possible explanation of the bibliographic universe; there are others.
Other Cataloging Models

- Several different models of the bibliographic universe have been used throughout the history of cataloging.
- Looking at the Group 1 entities (work, expression, manifestation, and item), one can observe an increasing complexity in the cataloging community’s view of the object of its work.

One Entity Model

- The earliest catalogs were inventories of items in library collections.
- In ER language, they recognized a single entity, “copy” (FRBR’s “item”).
As library catalogs moved from being inventories to retrieval systems, a more complex model appeared.

This model recognized “editions” (close to FRBR’s “manifestation”) as well as “copies”.

A catalog that does not use uniform titles would exemplify this model.

Pettee (1936) proposed recognizing, in addition to copy and edition, an additional entity, “literary unit”, as a function of the catalog.

This view was promoted by Lubetzky, who called the third entity “work” and was instrumental in incorporating it into the Paris Principles (1961).

This model is supported by AACR2.
Enter Expressions

- Wilson (1968), following Verona (1959), introduced the notion of “text”.
- Texts are a collection of “certain words into a certain order”. (1968, p. 6)
- Wilson’s text is similar to FRBR’s expression, though narrower in scope (his bibliographic universe did not include many nonbook materials)

FRBR, Back to the Future

- So, Group 1 entities aren’t really new, because they have been recognized for a long time by the cataloging community.
- What is new about FRBR is:
  - the way in which the entities are described (using an ER modeling technique);
  - linking each part of the model (entity, attribute, relationship) to catalog objectives;
  - the recognition of 4 different entities simultaneously.
Understanding FRBR

- It may be easier to look at Group 1 entities as sets of items rather than abstract ideas.
- Sets allow us to turn abstractions like work and expression into physically identifiable units.
What FRBR Does For Us

- Promotes shared understandings to improve shared cataloging;
- Helps us focus on what each part of a bibliographic record is there for; it relates entities, attributes and relationships to catalog objectives;
- Can make catalogs more helpful to users.

Some Caveats

- Because FRBR is a conceptual model, and not a fully developed data model, it is, in a sense, unfinished from a cataloging perspective.
- New work must be done to integrate FRBR into cataloging rules and practice – a lot of work!
- FRBR may never be the same thing for every person.
Making FRBR Operational

- FRBR is not a set of cataloging rules; in other words, it is not operationalized.
- The level of detail required to make FRBR will be provided in codes of cataloging rules.
- Different codes of rules could result in different interpretations and, thus, different cataloging for the same items.

Abstraction, Again

- We must develop more precise definitions of abstract entities like “work” and “expression”:
  - Is a movie instantiation of a textual work an expression of that work, or is it a new related work?
  - Is a Braille instantiation of a text a new expression or a new manifestation?
Unintentional Changes & Expressions

- Much of the cataloging community agrees that changes in a text string constitute a new textual expression.
- However, less agreement is present when one considers small, unintentional changes to a text, frequently introduced by printers – do these changes constitute a new expression?

Viewpoints

- In addition to refining our notions of the abstract entities, we can acknowledge differences in approach to FRBR.
- For example, where exactly should the abstraction line be placed in the Group 1 entities?
FRBR View of Abstract/Physical

Abstract Domain

Work

is realized through

Expression

is embodied in

Manifestation

is exemplified by

Item

Physical Domain

Alternative View of Abstract/Physical

Abstract Domain

Work

is realized through

Expression

is embodied in

Manifestation

is exemplified by

Item

Physical Domain
Selective Implementation

- “The work/expression levels could be merged when that makes sense for an application, or even merged with manifestation when that makes sense…” Barbara Tillett, FRBR list email (5/7/2003)
- FRBR can be selectively applied to those documents that most need it.

Is FRBR a Process Model or an Existential Model?

- Some present the Group 2 entities as a process – a work is the idea, then the actual text or notation is created, then it is published, then you have an item…
- However, you can see an item as the physical object and as a work, expression, and manifestation simultaneously; in other words, the document is all of these at once.
Conceptual models are not exact models of the world - they are selective; In general, evaluate conceptual models as good or bad at what they try to do (not as right or wrong) Models of abstractions are difficult to understand, and implementations of them may differ (as FRBR undoubtedly will).

FRBR is the latest contribution in a historical progression to cataloging theory; FRBR has the potential to truly improve the library catalog!
Presentation Availability


Selected References