Continuities..➤

A Note on Inter-Work Relationships in *RDA* and the *Library Reference Model*

By Graeme Williams

Note from Ben Abrahamse, "Continuities" author and editor:

If you are surprised to discover that people other than catalogers and metadata librarians are interested in making catalogs work better, you are in good company. Graeme Williams is a mathematician and software engineer, who reached out to me to share some of his thoughts on relationships between bibliographic objects and how they correspond (or do not relate) to user needs. I asked if he would be willing to share his thoughts with my readers, and I am grateful that he obliged.

Graeme Williams

I approach cataloging questions as a library user rather than a librarian. I am acutely interested in public library cataloging as an abstract system, but I am also interested in how people use the public library catalog. In this article, I want to talk about inter-work relationships, specifically in the *Library Reference Model* (*LRM*).[1]

Because I am a library user and not a cataloger, I look at cataloging inside out, from the online public access catalog (OPAC) to the record. Let us take a look at an OPAC page for Elizabeth Bear's recent novel, *The Red-Stained Wings*.[2]

The Red-Stained Wings is the second book in the *Lotus Kingdoms* trilogy by Elizabeth Bear and is set in the same world as the *Eternal Sky* trilogy. If you

look at the catalog record, you will discover a badly formatted series field (MARC 490); the series information

The Red-stained Wings
The Lotus Kingdoms, Book Two
Bear, Elizabeth
☐ eBook - 2019
Rate this: ☆☆☆☆☆

Macmillan School
Hugo Award–winning author Elizabeth Bear returns to the epic fantasy world of the Lotus Kingdoms with *The Red-Stained Wings*, the sequel to *The Stone in the Skull*, taking the Gage into desert lands under a deadly sky to answer the riddle of the Stone in the Skull.

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Topical Term:	Fantasy fiction
Publisher:	[Place of publication not identified] : Tom Doherty Associates, 2019
ISBN:	9781466872080 146687208X
Branch Call Number:	eBOOK
Series:	The Lotus Kingdoms Series, Book 2
Characteristics:	1 online resource
Additional Contributors:	OverDrive, Inc

also has been included in the 245 field as the subtitle. It is no challenge finding bad catalog records. What I *am* interested in is what a good catalog record—or actually a good OPAC page—would look like.

The *Library Reference Model* (*LRM*)

The *LRM* is a formal model for bibliographic data. It consists of a class hierarchy—each class has a set of attributes—and a set of relationships between classes. It is a bit odd as a set of rules because it does not require that the rules be followed. The *LRM* document airily explains that, "Although the structural relationships between the entities *work*, *expression*, *manifestation*, and *item* are core to the model, the

Continuities...

A Note on Inter-Work Relationships in *RDA* and the *Library Reference Model*

(continued from page 13)
attributes and the other relationships declared in the model are not required for implementation," before going on to explain that item is not required either.[3] We will look to the examples for guidance, with the understanding that they are not binding.

The top of the *LRM* class hierarchy is *res* or "thing." A *res* can be, for example, a book, an author, or a concept. When the *LRM* includes a relationship between two classes, it also applies to subclasses of either class. In the *LRM*, any two things can be related: which *LRM* expresses as the relationship "*Res* is associated with *res.*"[4]

What Is the Difference between a Subclass and a Category?

While nothing much is required by the *LRM*, it is not true that anything is allowed. You cannot have relationships between relationships, and relationships cannot have attributes. Before we dive into what that means, we need to understand why a model might use a "subclass" in one place but a "category attribute" in another.

Consider how *Agent* is defined in the *LRM*. It can be a *Person* or a *Corporate agent*. Perhaps we suspect that we now have three classes where one would do. Perhaps a single Agent class is sufficient, with a category attribute to distinguish between Persons and Corporations. However, a Person can have a Profession, but a Corporation cannot. If we have a single Agent class, we would express that as "Only an Agent with the attribute and value category 'Person' can also have the

attribute 'Profession,'" which is somewhat clunky, even with this simple example. A class needs a "subclass" rather than a "category attribute" when, as here, different rules apply to different subclasses, as in this case. A different subclass means a different kind of "thing."

Is a Series a Thing?

The *LRM* does not address this explicitly, but it does give some examples. The examples for the Work entity (*LRM* E2) include Ursula K. Le Guin's *Earthsea* trilogy, and the examples for the relationship "Work precedes Work" (*LRM* R19), includes the example, "The TV series Better Call Saul! precedes the TV series Breaking Bad." So while this is not binding, the intent of the *LRM* authors seems clear.[5]

Now we can try to record the relationship between Elizabeth Bear's two trilogies: {*The Lotus Kingdoms* trilogy} /is set in the same world as/ {*The Eternal Sky* trilogy}. The *LRM* includes a possibility to encode this relationship, "WORK Accompanies / Complements WORK" (*LRM* R20), but the description and examples given in the *LRM* document make it clear that *LRM* R20 just does not apply.[6] For the time being, we are left with {*The Lotus Kingdoms* trilogy} /something something something/ {*The Eternal Sky* trilogy}.

The User Tasks

In order to justify a new relationship between series, we need to rely on what library users want and need. Library users do not see a theoretical model, they do not see cataloging rules, and they do not even see catalog

records—they see webpages delivered by the OPAC. A cataloging model such as the *LRM* has to provide the data for the OPAC to display.

The first four user tasks defined in the *LRM* document are lifted from *Functional Requirements for Bibliographic Records* (find, identify, select, and obtain).[7] I do not think they illuminate how people really use a public library. I suppose asking, "What is the next book in the series?" or "Is this the first book in the series?" are examples of Find and Identify, but those terms do not tell you what to display on an OPAC page.

The one new task defined by the *LRM* is "explore": "The explore task acknowledges the importance of serendipity in information seeking."[8] But what is "information seeking"? Do the authors of the *LRM* really believe that the same people that are clicking on cat videos on Facebook become "information seekers" when they arrive at the library catalog? A more believable user model is that when people type into a search box, click on a link, or give up and go back, sometimes they are thoughtful and systematic, and sometimes they are not. In this model, the goal of the OPAC is not to present the information the user needs to make a definitive decision, but to present possible click paths forward that are useful or interesting.

When a user is looking at the OPAC page for a particular book, they are asking themselves, at least implicitly, "Do I want this book, some other book, or perhaps both?" It makes sense for the OPAC to display related books. Some OPACs display clickable subject headings, but I think that is a pretty

weak substitute. If I am looking at a particular space opera, do I click on the subject heading and see some more space operas? How would I know—show me some!

A subset of people insist on starting a series at the beginning and if you have read one book, you want to make sure you read the next one next. This makes it pretty clear that the OPAC should display at least the first book in the series, the book before the current book, and the book after. If the series is short enough, you might as well show the whole series. That is a lot more useful than just giving the series number of the current book. Some OPACs do this using additional services that provides links out to related content, such as EBSCO's NoveList, avoiding the need to include accurate series information in the catalog record.[9] This is helpful but it makes some functions impossible, like a search on series name.

This reasoning also applies to less well-defined relationships. If there is an earlier series that is set in the same world, perhaps I want to read that first. If there is a movie of the book or a book of the movie, I want to know about it. The problem with these looser kinds of relationships is that we need a vocabulary to describe them so that the OPAC can include the description of the relationship. Should the description of the relationship be controlled or uncontrolled?

The *LRM* only includes five possible inter-work relationships, far too few to provide helpful text for a library user, and does not allow attributes on relationships. What does *RDA* do?[10]

Series and Inter-Work Relationships in *RDA*

The *LRM* idea of a series as a thing, as a kind of work, does not appear in *RDA*. An individual work can just have a series statement, like in MARC. That means that there is no possibility of describing a relationship between series. On the other hand, *RDA* has almost 200 relationship terms. Yet still, it seems that 200 terms are not enough; it should not surprise you to learn that "in the same world as" is not included.

Let us consider Shakespeare's *The Taming of the Shrew* and two notable movies: the Zeffirelli/Burton/Taylor production, and Heath Ledger and Julia Stiles in *10 Things I Hate About You*. What should be displayed on the OPAC page for the play? Let us suppose our Best Possible OPAC displays thumb-nails of the two movies under the heading "Related." What do we want to say about these relationships?

The Taylor/Burton movie is straight-forward. It is just a movie production of the play. It is clear from the *LRM* examples (non-binding, remember) that this would be "An Expression is derived from an Expression" (*LRM* R24), since the movie (an "Expres-sion") is derived from the text (also an "Expression") of the play.[11] In *RDA*, the relationship would be "Work is motion picture adaptation of Work," one of the narrower relationships defined within "Work is adaptation of Work."

10 Things I Hate About You is a bit more complicated, since some of the dialog in the movie is taken from the play, and some is not. The dialog taken from the play would suggest that it is an adaptation, but the new dialog would suggest that it is "inspired by" the play.

How much dialog has to be replaced to turn an adaptation into an "inspired by"? There is no sensible answer to that question, which makes me think that *LRM*'s distinction between *LRM*'s "inspired by" relationships (*LRM* R24), and its "transformation" relationship (*LRM* R22) is untenable. This weakness also applies to *RDA*'s relationships, "inspired by" and "adaptation of."[12]

The relationship between two creative works is often going to be complex. I doubt it could be helpfully captured even if *RDA*'s almost 200 terms grow to a thousand or more. It is not a bibliographic problem, but a question of what information to present on the OPAC page. If relationship terminology cannot be controlled, well, it will have to be uncontrolled.

Conclusions

The examples above have shown that clear distinctions do not exist for relationships between works, and they cannot be imposed. Any attempt to impose a controlled vocabulary for relationships will result in arbitrary and shifting boundaries. In splitting "inspired by" and "transformation," *LRM* has made a smaller version of the same mistake. I might be able to draw a boundary between those two terms today, but I doubt it will be the same boundary tomorrow.

RDA is more complicated, since relationships are collapsed into "elements". Luckily, elements ("super-elements") can contain other elements ("sub-elements"). The series statement is an example of a super-element, containing, for example, a series title and a numbering. We can therefore

Continuities..➤
A Note on Inter-Work Relationships in *RDA* and the *Library Reference Model*

build a new inter-work relationship super-element out of a "work" element (the other work in the relationship) and a "description" element, which is just an uncontrolled text field. Series are a legitimate bibliographic entity beyond an attribute of the works that make them up. There is no doubt that library users think of a series as something separate from the individual works that make it up. For example, the question, "What is the next book in the series?" has meaning even if the next book has not been published. Unfortunately, in *RDA* a series only exists as a name and as an element of the works that make it up. In theory, we could add optional "related series" and "related series description" sub-elements to the existing series statement, but this is starting to feel like papering over a gap in the machinery.

The question is at what point do we need to split the uncontrollable aspects of inter-work relationships into a free text field, that is, something that can be displayed by the OPAC? There is no reason to multiply concepts (types of relationships) when an uncontrolled attribute is sufficient. Unfortunately, *LRM* does not include a mechanism for doing this, though it could be extended to allow attributes to be attached to relationships. This would automatically apply to relationships between series, since series are works.

As *RDA* is developed in light of the *LRM*, it needs to take seriously how to treat relationships between works, and relationships between series, as full citizens in the bibliographic universe.

References and Notes

1. Pat Riva, Patrick Le Bœuf, and Maja Žumer, *IFLA Library Reference Model: A Conceptual Model for Bibliographic Information*, as amended and corrected through Dec. 2017 (The Hague: IFLA, 2017), https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017_rev201712.pdf (accessed May 21, 2020).
2. Record for *The Red-Stained Wings* retrieved from Las Vegas-Clark County Public Library Catalog, https://lvccld.bibliocommons.com/item/show/2278257134 (accessed May 21, 2020). The OPAC record also includes a cover image, a brief description, the option to view the MARC record, and snippets from reviews.
3. Riva, Bœuf, and Žumer, *IFLA Library Reference Model: A Conceptual Model for Bibliographic Information*, 10.
4. Ibid., 61-63.
5. Ibid.; these examples appear in "Table 4.2 Entities," which appear on pages 20-36.
6. Ibid.; LRM-R20 is listed in "Table 4.6 Relationship Hierarchy," see page 63.
7. IFLA Study Group on the Functional Requirements for Bibliographic Records, *Functional Requirements for Bibliographic Records: Final Report*, approved by the Standing Committee of the IFLA Section on Cataloguing Sept. 1997, as amended and corrected through February 2009 (The Hague: International Federation of Library Associations and Institutions, 2009), http://archive.ifla.org/VII/s13/frbr/frbr_2008.pdf.
8. Riva, Bœuf, and Žumer, *IFLA Library Reference Model*, 16.
9. See EBSCO, "NoveList," www.ebscohost.com/novelist (accessed May 21, 2020).
10. *RDA: Resource Description and Access* (Chicago: American Library Association; Ottawa: Canadian Library Association; London: Chartered Institute of Library and Information Professionals, 2010-).
11. Riva, Bœuf, and Žumer, *IFLA Library Reference Model*, "Table 4.6. Relationship Hierarchy," 63.
12. Ibid.

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