Beyond the Catalogue
by Ksenija Obradovic
• Much of library data is tied directly to its ILS, with MARC used for internal and external data communication

• **Linked Data** is seen as the next common infrastructure for communicating library data and embedding it into the semantic web

• **BibFrame** - an alternative to MARC, developed to be more compatible with the Internet and Linked Data environment, and to offer new opportunities to leverage information

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**FRBR**
*(Functional Requirements for Bibliographic Records)*

An Entity-Relationship Model

![Diagram](image_url)
## FRBR Entities

<table>
<thead>
<tr>
<th>#1</th>
<th>#2</th>
<th>#3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Person</td>
<td>Concept</td>
</tr>
<tr>
<td>Expression</td>
<td>Family</td>
<td>Object</td>
</tr>
<tr>
<td>Manifestation</td>
<td>Corporate body</td>
<td>Event</td>
</tr>
<tr>
<td>Item</td>
<td></td>
<td>Place</td>
</tr>
</tbody>
</table>

### FRAD
*(Functional Requirements for Authority Data)*

### The FRBR model can be used to

- Cluster bibliographic records retrieved via search
- Display search results in more meaningful ways
- Assist users in selecting items
William Garden Cowie

1. A newly discovered patera: William Garden Cowie, Bishop of Auckland, 1869-1903
   by Frank Wright
   Language: English
   Publisher: Auckland, N.Z.; Polygraphia, 2002

2. Our last year in New Zealand, 1887
   by William Garden Cowie, Bp.
   Language: English
   Publisher: Auckland, N.Z.; William Adkin, 1887

3. Notes of a visit to Norfolk Island in November 1872; from the journal of the Bishop of Auckland; with a
   by William Garden Cowie
   Language: English
   Publisher: Auckland, N.Z.; William Adkin, 1873

Displaying Editions 1 - 3 out of 3

Select All  Clear All  Save to: [New List]  Save

<table>
<thead>
<tr>
<th>Title / Author</th>
<th>Type</th>
<th>Language</th>
<th>Date / Edition</th>
<th>Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Our last year in New Zealand, 1887</td>
<td>Print book</td>
<td>English</td>
<td>1888</td>
<td>L. K. Paul, Trench</td>
</tr>
<tr>
<td>3. Our last year in New Zealand, 1887</td>
<td>eBook</td>
<td>English</td>
<td>1888</td>
<td>L. K. Paul, Trench</td>
</tr>
</tbody>
</table>

RDA
(Resource Description and Access)

- The new, unified cataloguing standard
- Designed for the digital world and an expanding universe of metadata users
• **New MARC fields** for RDA attributes have been established for names and for resources (works and expressions)

New MARC Authority fields for name attributes:

- **046** - Special Coded Dates (R)
- **370** - Associated Place (R)
- **371** - Address (R)
- **372** - Field of Activity (R)
- **373** - Affiliation (R)
- **374** - Occupation (R)
- **375** - Gender (R)
- **376** - Family Information (R)
- **377** - Associated Language (R)
AACR2

245 1 0 $a Ready for advanced. $p Teacher's book $h [kit]

RDA

| 336 | $a text $b txt $e2 rdaccontent |
| 336 | $a two-dimensional moving image $b tdi $e2 rdaccontent |
| 336 | $a spoken word $b spw $e2 rdaccontent |
| 337 | $a unmediated $b n $e2 rdamedia |
| 337 | $a video $b v $e2 rdamedia |
| 337 | $a audio $b s $e2 rdamedia |
| 338 | $a volume $b nc $e2 rdacarrier |
| 338 | $a video disc $b sd $e2 rdacarrier |
| 338 | $a other audio carrier $b sz $e2 rdacarrier |
• Enables Linked Data functionality

• The model and its components are still in discussion and development

• 2011, May – BibFrame initiative announced

• 2011, Oct. – BibFrame Plan published – Linked Data model to be used

• 2012/2013 – Early experimenter investigation (NLM, George Washington University, OCLC, Princeton, BL, DNB, LC)

• 2014 – Testbed, discussion, shared tools (editor, transformations)

• 2015 – Revised vocabulary and LC pilot
The BibFrame Model

Creative Work - a resource reflecting a conceptual essence of the cataloging resource.
Instance - a resource reflecting an individual, material embodiment of the Work.
Authority - a resource reflecting key authority concepts that have defined relationships reflected in the Work and Instance. Example of Authority Resources include People, Places, Topics, Organizations, etc. One important concept in Authority is domain, which is the entity taking responsibility for the recognition, organization and maintenance (to ensure integrity) of the authoritative resources.
Annotation - a resource that enhances our knowledge about another resource when knowing, minimally, 'who' is doing the annotating is important. Library Holdings, Cover Art and Reviews are examples types.

http://www.loc.gov/bibframe/docs/model.html
Issues still to be solved

- Specifying relationships between works and instances more explicitly than in the past
  - How much detail? What lists to use?
- Should all instances be split by carrier or just by different media?
  - Paperback, hardback, library binding for books?
  - Print version, electronic version, audio version?
  - Vinyl 78, vinyl 45, tape, CD, stream?
  - VCR, DVD, Blu-ray, reel?
- Should we develop authorities for more entities?
  - Publisher names? Publication places?

BibFrame Initiative
  - [http://www.loc.gov/bibframe/](http://www.loc.gov/bibframe/)

Try out BibFrame Editor
Linked Data

Is structured, machine-readable data

Can be incorporated into online content easily

Can improve visibility of library collections
RDF Triples

Subject  Predicate  Object

Alistair McGrath  Is a  Person

Was born in  Belfast

Was born in  1953

Data instead of records

Examples of Datasets

- DBpedia – 3.4 million concepts described by 1 billion triples, including abstracts in 11 different languages (extracted data from Wikipedia)

- GeoNames - provides RDF descriptions of more than 7.5 million geographical features worldwide
The Web of Data
### General purpose vocabulary for describing things on the web used by millions of domains.

**Thing > Person**
- A person (alive, dead, undead, or fictional)

<table>
<thead>
<tr>
<th>Property</th>
<th>Expected Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>givenName</td>
<td>Text</td>
<td>An additional name for a Person, can be used for a middle name.</td>
</tr>
<tr>
<td>familyName</td>
<td>Text</td>
<td>A person’s last name.</td>
</tr>
<tr>
<td>fullName</td>
<td>Text</td>
<td>The person’s full name.</td>
</tr>
<tr>
<td>alias</td>
<td>Text</td>
<td>An alternative name for a Person.</td>
</tr>
<tr>
<td>url</td>
<td>Text/URI</td>
<td>The person’s URL.</td>
</tr>
<tr>
<td>homePage</td>
<td>Text/URI</td>
<td>The person’s home page URL.</td>
</tr>
<tr>
<td>email</td>
<td>Text</td>
<td>A person’s email address.</td>
</tr>
<tr>
<td>telephone</td>
<td>Text</td>
<td>A person’s telephone number.</td>
</tr>
<tr>
<td>fax</td>
<td>Text</td>
<td>A person’s fax number.</td>
</tr>
<tr>
<td>knownFor</td>
<td>Text</td>
<td>The thing the Person is known for.</td>
</tr>
<tr>
<td>contactPoint</td>
<td>ContactPoint</td>
<td>A contact point for a person or human.</td>
</tr>
<tr>
<td>hangsOutWith</td>
<td>Person</td>
<td>A person or organization the person commonly interacts with.</td>
</tr>
<tr>
<td>student</td>
<td>Person</td>
<td>A student of the person.</td>
</tr>
<tr>
<td>employer</td>
<td>Person</td>
<td>An employer of the person.</td>
</tr>
<tr>
<td>manages</td>
<td>Person</td>
<td>A manager or supervisor of the person.</td>
</tr>
<tr>
<td>succeeding</td>
<td>Person</td>
<td>The person succeeding this person.</td>
</tr>
<tr>
<td>proceeding</td>
<td>Person</td>
<td>A person proceeding this person.</td>
</tr>
</tbody>
</table>

**OCLC working to expand Schema.org to better accommodate library data**
ISNI
(International Standard Name Identifier)

- The ISNI database is built from hundreds of databases worldwide, and based on linking through matching algorithms.

- ISNIs are freely available and widely diffused.

- Each assigned ISNI is accessible by a persistent URI in the form http://isni.org/isni/[isni] for example: http://isni.org/isni/0000000114473392

3 major types of links
ORCID (Open Researcher and Contributor ID)

Nonproprietary alphanumeric code to uniquely identify scientific and other academic authors

ORCID

- Becoming increasingly popular in the academic world
- Used by publishers (Thomson Reuters; Elsevier, Springer, etc.)
- Used in research data registers and research management systems (DataCite, Symplectic Elements, PURE)
"I believe everyone benefits from the visibility of libraries and their content on the Web."

Dr. Eric Miller @ Zepheira
CREDITS

http://www.loc.gov/bibframe/docs/images/bibframe.png

http://bibframe.org/

http://sr.wikipedia.org/wiki/Linked_data

http://blog.karelдонk.com/the-global-brain/

Photo of RDA cake curtesy of D. fritz