BIBFRAME & Linked Data 101

By: Elizabeth Cramer & Andrea Leonard

Abstract

These slides were used during an ASERL webinar and cover an exploration of BIBFRAME, how it relates to MARC, and the basics of Linked Data. It shows examples of some early experiments using BIBFRAME from libraries in different parts of the country.

BIBFRAME and linked data

What is BIBFRAME?
  • What about MARC?

What is linked data?

What is happening now with BIBFRAME and linked data?

What are the current challenges?
What is BIBFRAME?

BIBFRAME is the bibliographic framework initiative headed by Library of Congress and Zepheira (a data management company) as an eventual replacement for MARC.

BIBFRAME is created with the idea of allowing data to break free from the “document-like” environment of the MARC record and onto the web.

BIBFRAME is built on web standards in order to connect library data with the data available on the web.
What about MARC?

The MARC format severely limits what we can do with integrating bibliographic data into the web.

• Not used outside of libraries

• Inability to adequately express relationships between entities and resources being described

• Higher possible error rate for MARC data stored as static text within a catalog “silō”
<table>
<thead>
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<th>Value</th>
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<tbody>
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<td>34025476</td>
</tr>
<tr>
<td>040</td>
<td>DLC ‡b eng ‡c DLC ‡d KRTAS ‡d OCLCO ‡d OCLCF ‡d OCLCQ ‡d OCLCO</td>
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<td>n-usm--</td>
</tr>
<tr>
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<td>0 0 PS1306 ‡b .A1 1876</td>
</tr>
<tr>
<td>082</td>
<td>0 0 817.44 ‡2 20</td>
</tr>
<tr>
<td>092</td>
<td>‡b</td>
</tr>
<tr>
<td>049</td>
<td>NJBB</td>
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<tr>
<td>100 1</td>
<td>Twain, Mark, ‡d 1835-1910.</td>
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<tr>
<td>245 1 4</td>
<td>The adventures of Tom Sawyer / ‡c by Mark Twain.</td>
</tr>
<tr>
<td>260</td>
<td>Hartford, Conn. : ‡b American Pub. Co. ; ‡a San Francisco, Cal. : ‡b A. Roman, ‡c 1876, ©1875.</td>
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<tr>
<td>300</td>
<td>274, [6] pages : ‡b illustrations ; ‡c 22 cm</td>
</tr>
<tr>
<td>336</td>
<td>text ‡b txt ‡2 rdcontent</td>
</tr>
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<td>337</td>
<td>unmediated ‡b n ‡2 rdamedia</td>
</tr>
<tr>
<td>338</td>
<td>volume ‡b nc ‡2 rdacarrier</td>
</tr>
<tr>
<td>500</td>
<td>First American ed., following the London ed. by several months. First printing.</td>
</tr>
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<td>Publisher's advertisements, dated Dec. 1, 1876 on 2 leaves at end.</td>
</tr>
<tr>
<td>650 0</td>
<td>Sawyer, Tom (Fictitious character) ‡v Fiction.</td>
</tr>
<tr>
<td>651 0</td>
<td>Mississippi River Valley ‡v Fiction.</td>
</tr>
<tr>
<td>650 0</td>
<td>Runaway children ‡v Fiction.</td>
</tr>
<tr>
<td>650 0</td>
<td>Child witnesses ‡v Fiction.</td>
</tr>
<tr>
<td>650 0</td>
<td>Male friendship ‡v Fiction.</td>
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<tr>
<td>651 0</td>
<td>Missouri ‡v Fiction.</td>
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BIBFRAME Editor

Get the code [here](#). In the meantime, select a Profile below to get started.

<table>
<thead>
<tr>
<th>BIBFRAME - Kitchen Sink Profiles</th>
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<tbody>
<tr>
<td>New Held Item</td>
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<tr>
<td>New Instance</td>
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<tr>
<td>New Work</td>
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<tr>
<td>New Work, Instance, &amp; Held Item</td>
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<thead>
<tr>
<th>BIBFRAME - Simple Monograph</th>
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<tbody>
<tr>
<td>New Holding</td>
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<tr>
<td>New Instance</td>
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<tr>
<td>New Work</td>
</tr>
<tr>
<td>New monograph (New Work, Instance, and Holding)</td>
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</table>

**Work - Monograph**

<table>
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<tr>
<th>Authorized access point</th>
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<td>Authorized access point</td>
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<table>
<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Adventure of Tom Sawyer</td>
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<table>
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<tr>
<td>Title Entry</td>
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<tbody>
<tr>
<td>Person</td>
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<td>--------</td>
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<td>Twain, Mark, 18...</td>
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<table>
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<tr>
<td>Person</td>
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<tr>
<td>Person</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
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<table>
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<th>Place of creation</th>
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<td>Hartford (Conn.)</td>
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<th>Genre, etc.</th>
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<tr>
<td>Category</td>
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<table>
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<tr>
<td>Work</td>
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<td>------</td>
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<td>Sawyer, Tom (Fl.</td>
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ID: http://example.org/e5bffca3-59a3-71c6-f5b5-d500d33103a1
  Type(s)
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    http://id.loc.gov/authorities/names/n79021164
    bf:authorizedAccessPoint
    Twain, Mark, 1835-1910
    bf:authoritySource
    http://id.loc.gov/authorities/names

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    bf:authorizedAccessPoint
    Hartford (Conn.)
    bf:authoritySource
    http://id.loc.gov/authorities/names

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    undefined
    bf:hasAuthority
    http://id.loc.gov/authorities/subjects/sh2008111204
    bf:authorizedAccessPoint
    Sawyer, Tom (Fictitious character)--Fiction
What is linked data?

Linked data is the framework behind the semantic web.

Semantic web recognizes relationships between data.

- Semantic framework: Subject -- Predicate -- Object
- Example: Mark Twain -- Creator of -- Tom Sawyer

These relationships are known as “triples.”
What is linked data?

The web can recognize these relationships between data based on the foundation of the web specific standards XML and RDF (Resource Description Framework).

RDF labels data and allows machines to recognize relationships between data.

Mark Twain wrote Tom Sawyer

http://id.loc.gov/authorities/names/n79021164
http://purl.org/dc/terms/creator
http://id.loc.gov/authorities/names/n79132704
The promise of linked data...

Google search results for "molly brown papers"

About 7,600,000 results (0:61 seconds)

Denver Public Library Catalog
Margaret "Molly" Tobin Brown Papers, 1889-1959 [manuscript]. ... Collection contains letters to Mrs. Ella Grable, housekeeper of Brown's Denver residence,...

Title - Denver Public Library
https://catalog.denverlibrary.org › Home › Search

People also ask
Why is she called the Unsinkable Molly Brown?
Who was the real Unsinkable Molly Brown?

MARGARET "MOLLY" TOBIN BROWN PAPERS - Archives Finding Aids
eadsrv.denverlibrary.org/sdx/pl/toc.xsp?id=WH53&qid...
...available today.
Challenges

Legacy MARC records: Comparison Service and MARC to BIBFRAME Transformation Service

Changing skill sets for metadata librarians
  • But will we have to be programmers?!

Playing by the rules of the web

Vendor cooperation
Challenges

How will our work as catalogers change?

BIBFLOW
- BIBFLOW: A Roadmap for Library Linked Data Transition

LIBHUB

Linked Data for Libraries (LD4L)
Linked Data for Production (LD4P)
Linked Data for Libraries Labs
2011...Six Years Ago

Stanford & Council on Library and Information Resources’ Report:

“Be part of the web - not just on it”
Examples of linked libraries

When will BIBFRAME replace MARC?
When will BIBFRAME standards and tools be ready?

What are next steps?
Zepheira’s Library.link Network
http://library.link/
Charlie and the chocolate factory - Worthington Public Library
link.worthingtonlibraries.org › portal › C...

Each of five children lucky enough to discover an entry ticket into Mr. Willy Wonka’s mysterious chocolate factory takes ...

Drama - Charlie and the HOT Chocolate ...
https://apm.activecommunities.com › dra...

Drama - Charlie and the HOT Chocolate Factory. - 5679. > Home Page > Activity ... Location: Worthington Community Center ...
Charlie and the chocolate factory, Roald Dahl; illustrated by Quentin Blake.

Creator: Dahl, Roald
Contributor: Blake, Quentin
Summary: Each of five children lucky enough to discover an entry ticket into Mr. Willy Wonka's mysterious chocolate factory takes advantage of the situation in his own way.
Language: eng
Note: Illustrations originally published: Great Britain: Puffin Books, 1998
Some editions include colored photograph stills from the 2005 motion picture.
In one volume, page i-v and 1-178"-T.p.
Isbn: 9780142401088

Library Locations

Library Links
- Get a library card
- Services
- Event calendar
- News and announcements
Charlie and the chocolate factory (Motion picture : 2005) - Worthington...
link.worthington.lib.in.us/resource/Lmq4lDR75w
... from the Bibframe namespace is licensed under the Creative Commons Attribution 4.0 International License by Worthington Jefferson Township Public Library...

Chocolate candy - Syracuse Turkey Creek Township Public Library
link.syracuse.lib.in.us/resource/jVoSnNmb8PA
Charlie and the chocolate factory, Warner Bros. Pictures presents in association with Village Roadshow Pictures, a Zanuck Company/Plan B production, a Tim...

Willy Wonka and the chocolate factory (Motion picture) (Collection... link.nweb.lib.in.us/resource/uzVqmgzHgyo
... data from the Bibframe namespace is licensed under the Creative Commons Attribution 4.0 International License by North Webster Community Public Library.

Dahl, Roald (Person) - Dublin Public Library
link.dublinpl.lib.in.us/resource/LMbPLqwdO2c
Charlie and the chocolate factory (Motion picture : 2005)
Dahl, Roald

Name: Dahl, Roald

Description: Award winning author of children's and adult works, master storyteller Roald Dahl is best known for tightly paced tales that include elements of fantasy. His adult short stories often feature mysterious happenings and include unexpected twists. In his children's books, the child characters are the definite heroes while sometimes the adults come off as bumbling and unlikeable. His children's books are often filled with dark humor and gruesome but intriguing, violent events. Some of his most memorable plots involve monstrous characters some wicked and some friendly. Start with: My Uncle Oswald (Adults); James and the Giant Peach (Older Kids)

Subject: 💫 Children and candy
💫 Poor children
💫 Candy
💫 Grandmothers
💫 Magic
💫 Factories
💫 Personal conduct
💫 Cleverness

Context:

Contributor of:
- Matilda
- Willy Wonka & the chocolate factory

Author of:
- The BFG

Creator of:
- Charlie And Chocolate Factory
- Charlie and the chocolate factory
- James and the giant peach
- Matilda
Études sur Blaise Pascal - Boston University Libraries
link.bu.edu/portal/Études-sur-Blaise-Pascal/mufvCo7JqI
Edition: Ed. augmentée de fragments inédits publiée avec une préface et des notes par Pierre Kohler ...
Extent: clxxxiv, 354 pages. Note: At head of title: ...

Blaise Pascal (Subtitled) - Boston University Libraries
link.bu.edu/portal/Blaise-Pascal-Subtitled/FErYPZuKm2Q/ •
Part of Roberto Rossellini’s series of history films, this finely detailed portrait of life in seventeenth century France was described by Rossellini as “the drama of a ...
Études sur Blaise Pascal

Creator  ▶ Vinet, Alexandre Rodolphe, 1797-1847
Editor    ▶ Kohler, Pierre, 1887-
Contributor ▶ Kohler, Pierre, 1887-
Language    fre
Publication  ▶ Lausanne, Payot & cie, 1936
Edition     Ed. augmentée de fragments inédits publiée avec une préface et des notes par Pierre Kohler ...
Extent      cxxiv, 354 pages
Note        At head of title: Alexandre Vinet
Link        ▶ https://archive.org/details/tudessurblaisep04vineog

Library Locations

Library Links

- About the Boston University Libraries
- Research
- Services
Innovative’s Sierra Example
Title: Willy Wonka & the chocolate factory / David L. Wolper presents; screenplay by Roald Dahl; produced by Stan Margulies and David L. Wolper; directed by Mel Stuart; a Wolper Pictures, Ltd. presentation.


Copies

<table>
<thead>
<tr>
<th>Location</th>
<th>Call No.</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Central Library</td>
<td>PN1997 W66 2011</td>
<td>Available</td>
</tr>
</tbody>
</table>

Description: 1 videodisc (100 min.): sound, color; 4 3/4 in.
System Details: DVD, NTSC, region 1, widescreen presentation; Dolby Digital 5.1 surround; Dolby Digital mono; dual layer format.


Credits: Lyrics and music: Leslie Bricusse, Anthony Newley; director of photography: Arthur Ibbetson; film editor, David Saxon; music arranged and conducted by Walter Scharf; choreography, Howard Jeffrey.

Note: Originally produced as a motion picture in 1971.

Based on the book Charlie and the chocolate factory by Roald Dahl.

Audience: MPAA rating: G.

Canadian home video rating: G

Summary: Candy manufacturer Willy Wonka has a contest and hires five golden tickets to five of his scumptious candy bars. All five ticket winners get a free tour of the mysterious Wonka factory, as well as a lifetime supply of Wonka candy. Four of the children are nasty brats who are punished by Willy Wonka with various diabolical, but funny, methods. Only Charlie, a likeable child, wins the heart of the manufacturer.

Note: Special features: Pure imagination documentary; commentary by the child actors; cast & crew; photo gallery; original featurette; sing along Wonka songs, trailer.

Language: Soundtrack in English or dubbed in French, Spanish or Portuguese; optional subtitles in English, French, Spanish, or Portuguese.

Closed-captioned.

Genre/Form: Fantasy films.
Musical films.
Feature films.
Fiction films.
Video recordings for the hearing impaired.

Added Author:
Stuart, Mel. Director.
Margulies, Stan. Producer.
Wolper, David L. Producer.
Dahl, Roald. Author of screenplay.
Wildor, Gene, 1935- Actor.
Ostrum, Peter, 1957- Actor.
Phased Process:
Not a “Flip of a Switch”

When will BIBFRAME replace MARC?
When will BIBFRAME standards and tools be ready?

Oct 2015: in 5-7 years?
(April 2017: 3-5 years!?)
Keep Moving Forward
Baby Steps

time to shift our focus

“...it is worth suggesting some steps that libraries could take to improve their position in web search results. These will include both technical and organizational changes, including new business models for success.”

(Ted Fons, 2016, p. 28)
Baby Steps

Be search engine aware

Start playing by the rules of the web

(Fons, 2016, pp. 28-30)
Search Engine Aware

Direct partnerships with search engines
(Fons, 2016, pp. 29-30)

• your library’s Knowledge card

• Sponsored link programs
Does your library have a knowledge card?

Appalachian State’s Belk Library 2016
Does your library have a knowledge card?

Appalachian State’s Belk Library 2017
OverDrive and Microsoft’s Bing search engine
Rules of the Web

“Play by the Rules”
(Fons, 2016, pp. 29-30)

• Local library knowledge and expertise in Semantic Web principles

• Web-friendly online presence

• Catalog data quality standards, universal identifiers
Other Possible Steps

• Educating others in local library and consortium - get people on board

• Contact libraries involved in the Zepheira-ILS linked data experiments

• Researching possibilities that would work for your library environment
A Resource for Catalogers

We’ve created a LibGuide for you!

BIBFRAME and Linked Data: A Primer for Catalogers

http://guides.library.appstate.edu/bibframe


Questions and Discussion

thank you for your interest and participation