Linked Open Data in Practice

Emblematica Online

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1. Background
   • What are emblems and Emblematica Online?

2. Descriptive Metadata
   • What is SPINE and how do we use it?

3. Linked Data in Emblematica Online
   • Publish emblem data as HTML+RDFa
   • Use linked data sources to enhance user experience

4. Lessons Learned
What is an Emblem?

• Flourished in Europe as a popular literary genre from 1531 until about 1750

• A combination of text and images

• Highly contextual, influenced by contemporaneous events, e.g., Reformation, Thirty Years’ War

• Images come from diverse sources, e.g., the Bible, fables, mythology, science & medicine

http://emblematica.library.illinois.edu/detail/emblem/E000004
Emblematica Online

• Portal for a key genre of Renaissance texts and images
• Provides access to digitized emblem resources from six institutions around the world (~1,400 books and 28,000 emblems)
• Provides granular levels of access to digitized emblem resources by employing the SPINE metadata schema
Metadata for Emblem Resources

“A Spine of Information Headings for Emblem-Related Electronic Resources”
Provides descriptive metadata structure that allows describing emblem books and emblems in the book together.

“SPINEXML Schema”
Became a metadata standard for the Emblem community that is used for DESCRIPTION and DISSEMINATION of digitized emblem resources at a granular level.
<emblem xmlns:xlink="http://www.w3.org/1999/xlink"
    xmlns:spine="http://diglib.hab.de/rules/schema/emblem" citeNo="I."
    <motto>
        <transcription xml:lang="de">Hier soll nun des Krieges Ziel</transcription>
        <normalisation xml:lang="de">Hier soll nun des Krieges Ziel sein.</normalisation>
    </motto>
    <picture>
        <xlink:href="http://dijetoka.grainger.illinois.edu/adsr-dijetoka/resolver?url_ver=239.88-2004&as_xmlid=E000001_P1">
            <iconclass rdf:about="http://www.iconclass.org/zkd/22C11">
                <skos:notation>22C11</skos:notation>
            </iconclass>
        </picture>
    </picture>
</emblem>
Granular Levels of Access

Multiple granularities for discovery, access, & citation to meet scholarly needs & expectations

- **Book Level** - bibliographic metadata
- **Emblem level** - transcriptions
- **Pictura level** - imagery, topoi, themes, and motifs
- **Arbitrary segments**
Linked Data in Emblematica

• As a **producer**: Make digitized emblem resources discoverable on the web

• As a **consumer**: Provide related web resources to emblem portal users

Publishing SPINE as Linked Data (1)

Identifier & vocabulary considerations

• Persistent, resolvable URIs at each level of granularity (names, subjects, etc.)
• Multi-lingual vocabulary for describing themes and motifs
Publishing SPINE as Linked Data (2)

Schema.org & RDFa

• Why Schema.org?
  -> Used as an encoding standard by web search engines
  -> Easily represented in the Web using RDFa

• Elements without matching schema.org semantics
  -> Create an Emblem Extension

<lista xml:id="E001352_P1" xlink:href="http://.../...">
    <skos:notation>25F711(GRASS HOPPER)(+45)</skos:notation>
  </iconclass>
</lista>

<div rel="sc:hasPart" typeof="emb:Pictura">
  <a property="sc:url" href="http://djatoka.grainger.illinois.edu/...">Pictura Image</a>
  <div rel="sc:about" typeof="sc:ConceptCode">
    <span rel="sc:codingSystem" resource="http://iconclass.org/"/>
    <span property="sc:name">insects: grass-hopper (+ animals eating and drinking)</span>
    <a property="sc:sameAs" href="http://www.iconclass.org/rdk/25F711(GRASS-HOPPER)(+45)">
      <span property="sc:codingValue">25F711(GRASS-HOPPER)(+45)</span>
    </a>
  </div>
</div>
emb extension (alpha 003 draft)

An experimental external extension (to schema.org) for Emblem Studies

Schema.org is a set of extensible schemas that enables webmasters to embed structured data on their web pages for use by search engines and other applications. For more details, see the [schema.org homepage](http://schema.org).

This is the front page for the experimental Emblem Studies external extension to schema.org, whose short name is emb.

You are viewing the Emblem Studies External Extension. It defines terms such as ConceptCode, Emblem, LiminaryText, EmblemPicture, EmblemTextPart, and...

This should be considered an early alpha preview release; additional changes still to be made based on testing and community response and/or this extension may be abandoned if it fails to prove useful.

Terms defined as being in the 'emb' external extension.

Types (6)
- Dedication
- ConceptCode
- Emblem
- EmblemTextPart
- EmblemPicture
- LiminaryText

Properties (18)
- additionalId
- dedication
- derivation
- note
- descriptorValue
- descriptorSystem
- editorialReference
- isComplete
- normalizedText
- meterFromOriginal
- meterAddedEditorially
- pageimages
- pictorialMotif
- reusedIn
- standardNo
- textualMotif
- theme
- translationOfName

Enumeration(2)
- DigitalOrigin
- EmblemPartType

Enumeration Values(7)
- BornDigital
- Commentatio
- DigitizedMicrofilm
- DigitizedOtherAnalog
- Motto
- ReformattedDigital
- Subscriptio

Terms from the 'bib' external extension (bib.schema.org) referenced.

Types from bib.schema.org (1)
- Collection
Using Linked Data to User Service (1)

VIAF web service

• Provides additional information about the ‘name’ (nationality, gender, etc.)

• Connects to other resources including WorldCat Identities and records
Johannes Vogel

- Birth Date: 1589-09-05
- Death Date: 1663-03-08
- Deutsche Nationalbibliothek:
  - http://d-nb.info/gnd/101446964
- Bibliothèque nationale de France:
  - http://catalogue.bnf.fr/ark:/12148/cb145366903
- Wikipedia:
- Virtual International Authority File:
  - http://viaf.org/viaf/54384883/

Notes


Signatures: A-G.

"1649" inscribed in ink on title-page.
Using Linked Data to User Service (2)

Iconclass web service
• Provides multi-lingual service
• Supports hierarchical browsing service

```xml
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
         xmlns:skos="http://www.w3.org/2004/02/skos/core#">
    <rdf:Description rdf:about="http://iconclass.org/25H1124">
        <rdf:type rdf:resource="http://www.w3.org/2004/02/skos/core#Concept"/>
        <skos:prefLabel xml:lang="fr">rocher, pierre</skos:prefLabel>
        <skos:prefLabel xml:lang="en">boulder, stone</skos:prefLabel>
        <skos:prefLabel xml:lang="de">Findling, Stein</skos:prefLabel>
        <skos:prefLabel xml:lang="it">masso, pietra</skos:prefLabel>
        <skos:notation>25H1124</skos:notation>
    </rdf:Description>
</rdf:RDF>
```
Lessons Leaned

- Metadata quality matters
- Automatic metadata reconciliation work requires human intervention
- Not all linked data services (authority data) are the same
Work with COMMUNITY!
Please visit us:
http://emblematica.library.illinois.edu/