How, When, and Why to use Linked Data

Starting and Sustaining an Institutional Conversation

Museums and the Web: 8 April 2015

Design for **Context**

Making software applications and web sites easy to use

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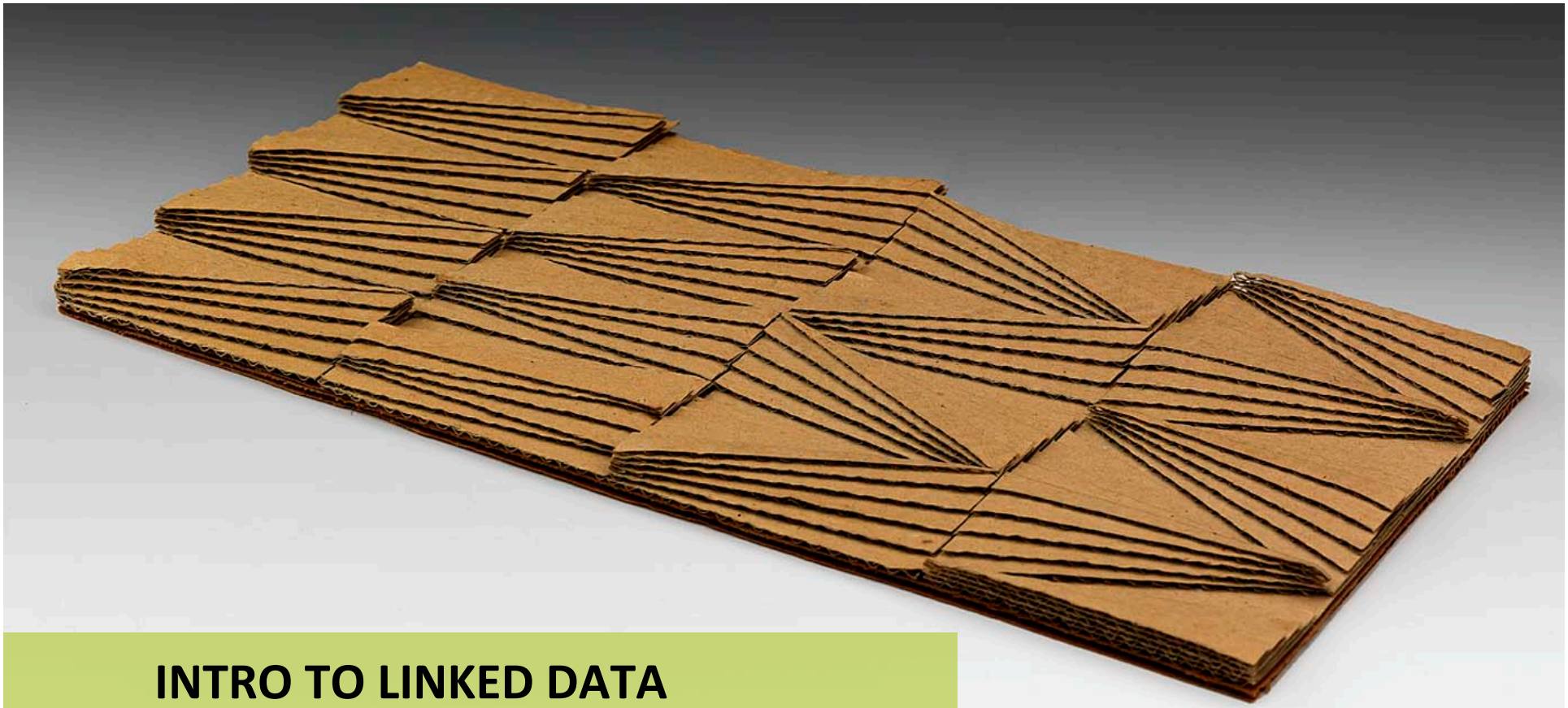
GETTING STARTED

Meet and Greet

Housekeeping

Expectations for the Day

Jakob Alt, “Interior of a Gothic Church”, 1864, The Walters Art Museum http://bit.ly/1wQpaiu



INTRO TO LINKED DATA

Why should we care about Linked Data?

The Magic of “Triples”

Semantic Infrastructure

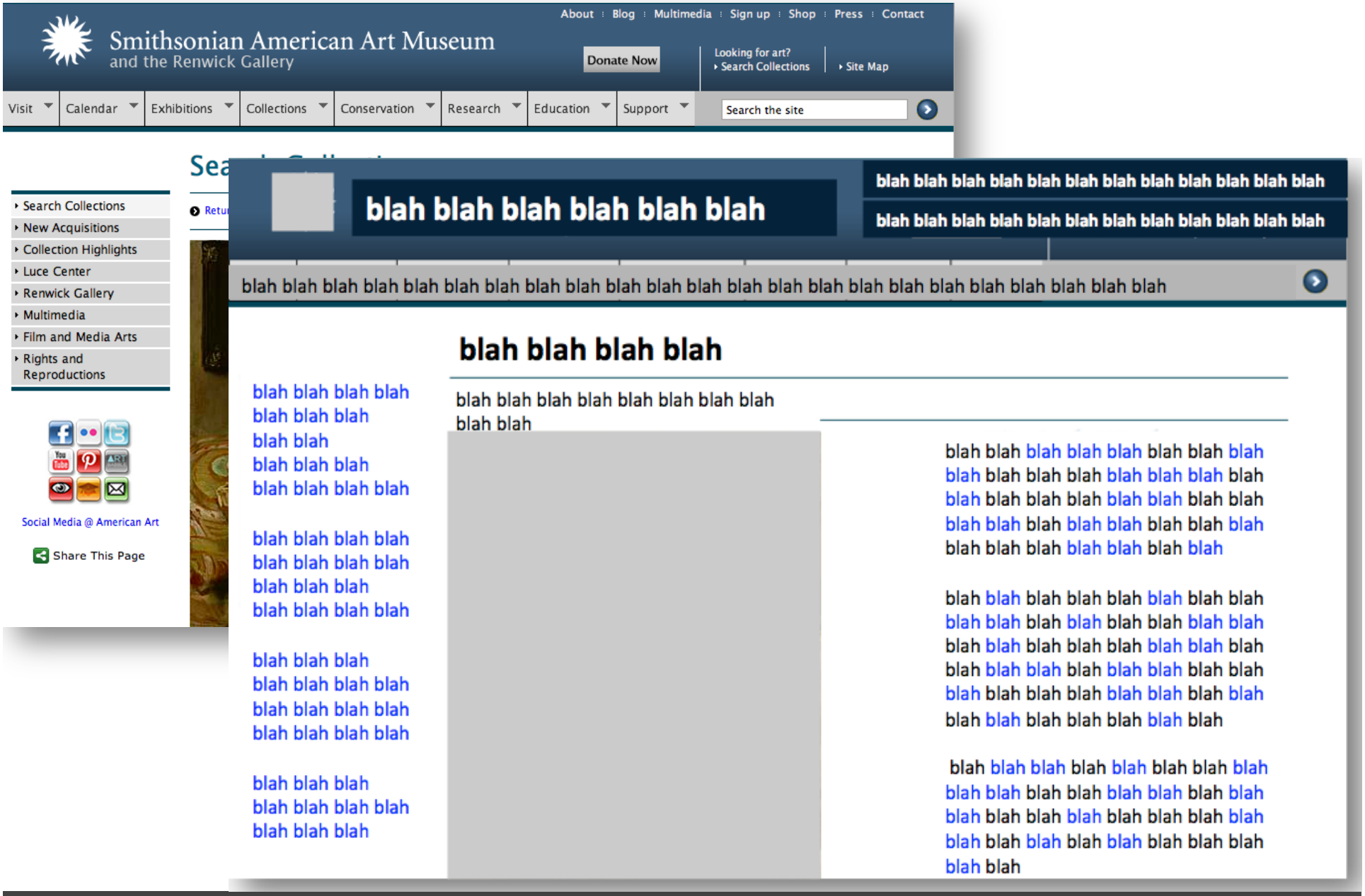
Building Semantic Graphs to do Cool Stuff

Athena Tacha, “Maquette for Ripples”, 1979, Smithsonian American Art Museum http://americanart.si.edu/collections/search/artwork/?id=23595

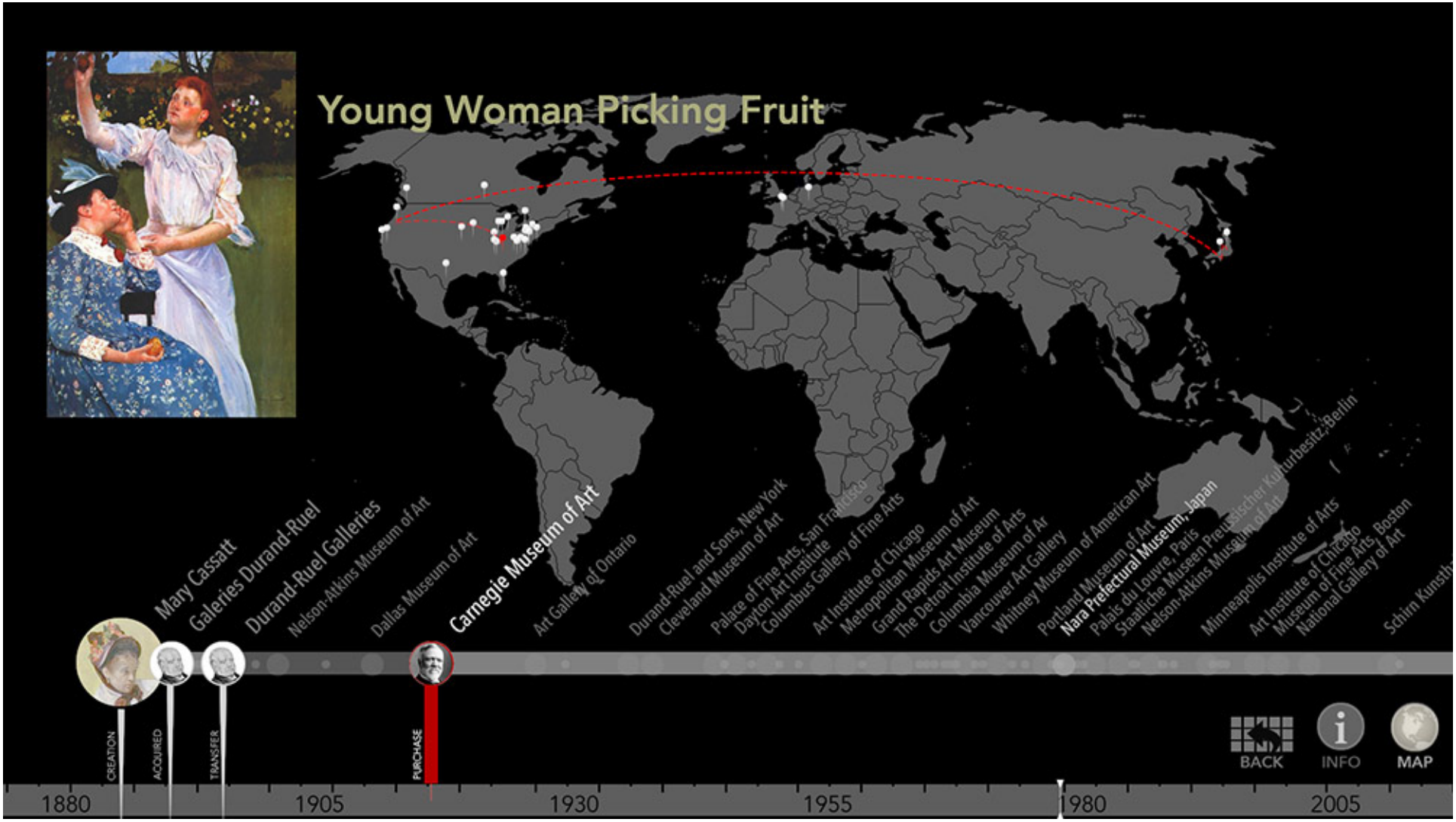
INTRO TO LINKED DATA

- Why should we care about Linked Data?

The Web with/without Linked Data


About | Blog | Multimedia | Sign up | Shop | Press | Contact
Smithsonian American Art Museum
and the Renwick Gallery
Donate Now
Looking for art?
Search Collections
Site Map
Visit | Calendar | Exhibitions | Collections | Conservation | Research | Education | Support
Search the site
Search Collections
New Acquisitions
Collection Highlights
Luce Center
Renwick Gallery
Multimedia
Film and Media Arts
Rights and Reproductions
Social Media @ American Art
Share This Page
blah blah blah blah blah blah
blah blah blah blah blah blah

Carnegie Museum of Art program idea: *Art Tracks*



Carnegie Museum of Art provenance app: *Elysa*

Documentation

Madonna and Child Enthroned with SS. Leonard, Jerome, John the Baptist, and Francis [1472]

Nicola di Maestro Antonio d'Ancona

71.4

copy

Nicola di Maestro Antonio d'Ancona; Possibly commissioned by Girolamo Ferretti, San Francesco delle Scale, Ancona, Italy. Unnamed owner, Rome, Italy, by 1828 [1]. Alexander Barker, London, England, by 1854 [2]; *Unnamed owner, Hall's Place, Canterbury, England, until 1880 [3];* (sold at Colnaghi, London, England); George Richmond, R.A; *sale, Christie, Manson & Woods, London , lot, May 1, 1897, lot 46.* Vernon J. Watney, Cornbury Park, 1899-?; *Lady Margaret Watney, Cornbury Park, Charlbury; Oliver Vernon Watney, Cornbury Park, Charlbury; sale, Christie, Manson & Woods, Ltd., London, in "Highly Important Pictures by Old Masters" , lot, June 23, 1967. , 31 CE; Wildenstein & Company, Inc., New York;* purchased by Museum, February 1971.

NOTES: [1] This information comes from correspondence with Matteo Mazzalupi, see curatorial file. [2] The work is recorded as being in Barker's ownership in 1854 by the German art historian Gustav Friedrich Waagen. See Waagen, "Treasures of Art in Great Britain" 1854, v. II, page 128. [3] Hall's Place, in Harbledown near Canterbury, was a country home that underwent several changes in ownership and had many residents. It is uncertain which individual or family purchased this work.

Provenance Party Records

- Nicola di Maestro Antonio d'Ancona
- Girolamo Ferretti
- Unnamed owner
- **Alexander Barker**
- *Unnamed owner*
- Colnaghi
- George Richmond
- *unknown party*
- Vernon J. Watney
- *Lady Margaret Watney*
- *Oliver Vernon Watney*
- *unknown party*
- *unknown party*

Original Record | Current Period | Party Lookup | Location Lookup | Exhibition History

Original Text sold, c. 1828 in Rome (information from Matteo Mazzalupi, see curatorial file)

Current Text Alexander Barker, London, England, by 1854

Party Name Alexander Barker

Year of Birth click to edit

Year of Death click to edit

Party Location London, England

Acq. Method select a method

Text Certain yes

Direct Transfer? yes

Primary Owner? yes

Ownership Dates by 1854

Stock Number click to edit

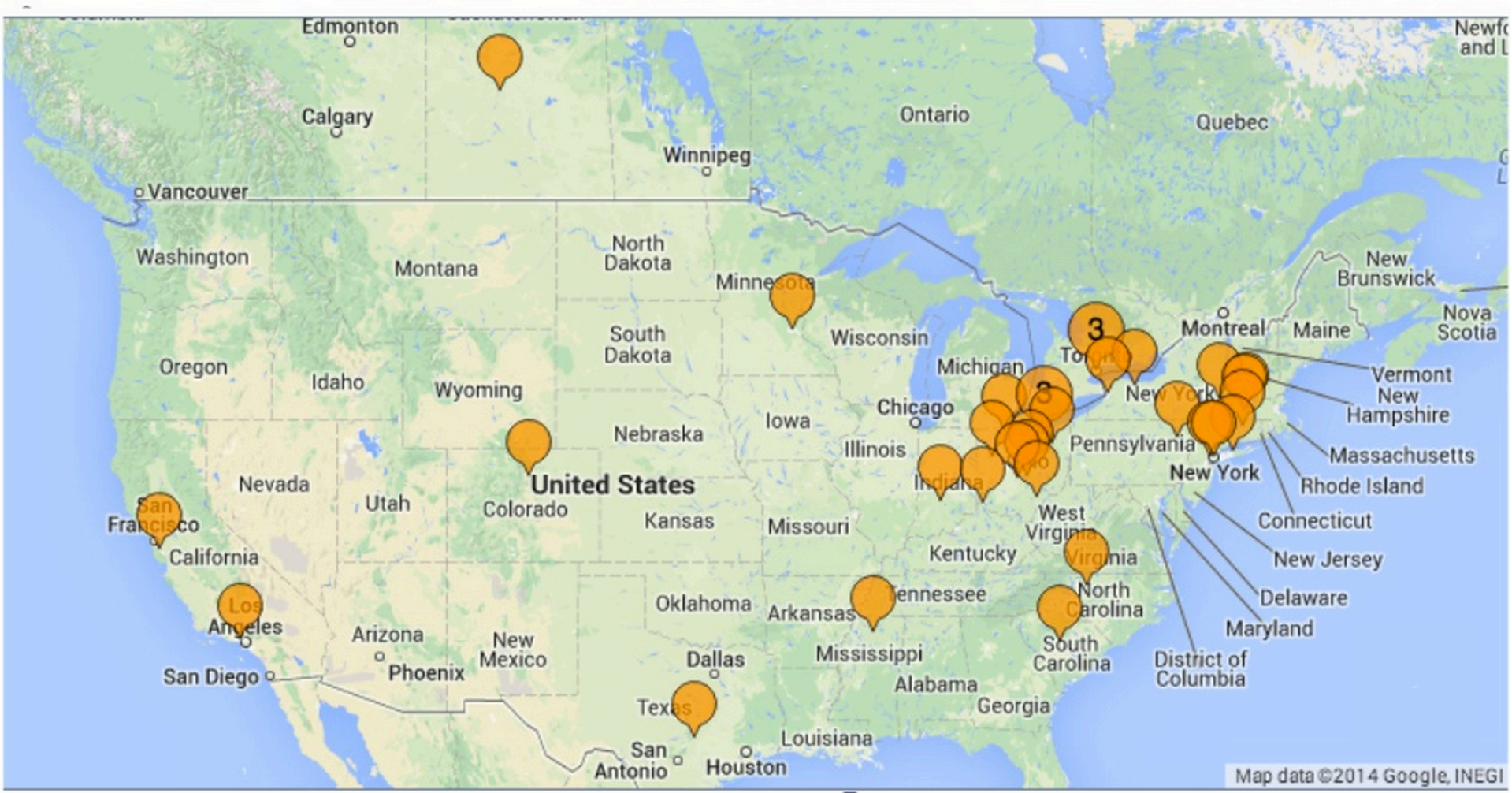
Footnote The work is recorded as being in Barker's ownership in 1854 by the German art historian Gustav Friedrich Waagen. See Waagen, "Treasures of Art in Great Britain" 1854, v. II, page 128.

Show Extended Fields

International Image Interoperability Framework (IIIF):

Connecting the diaspora of cultural materials:

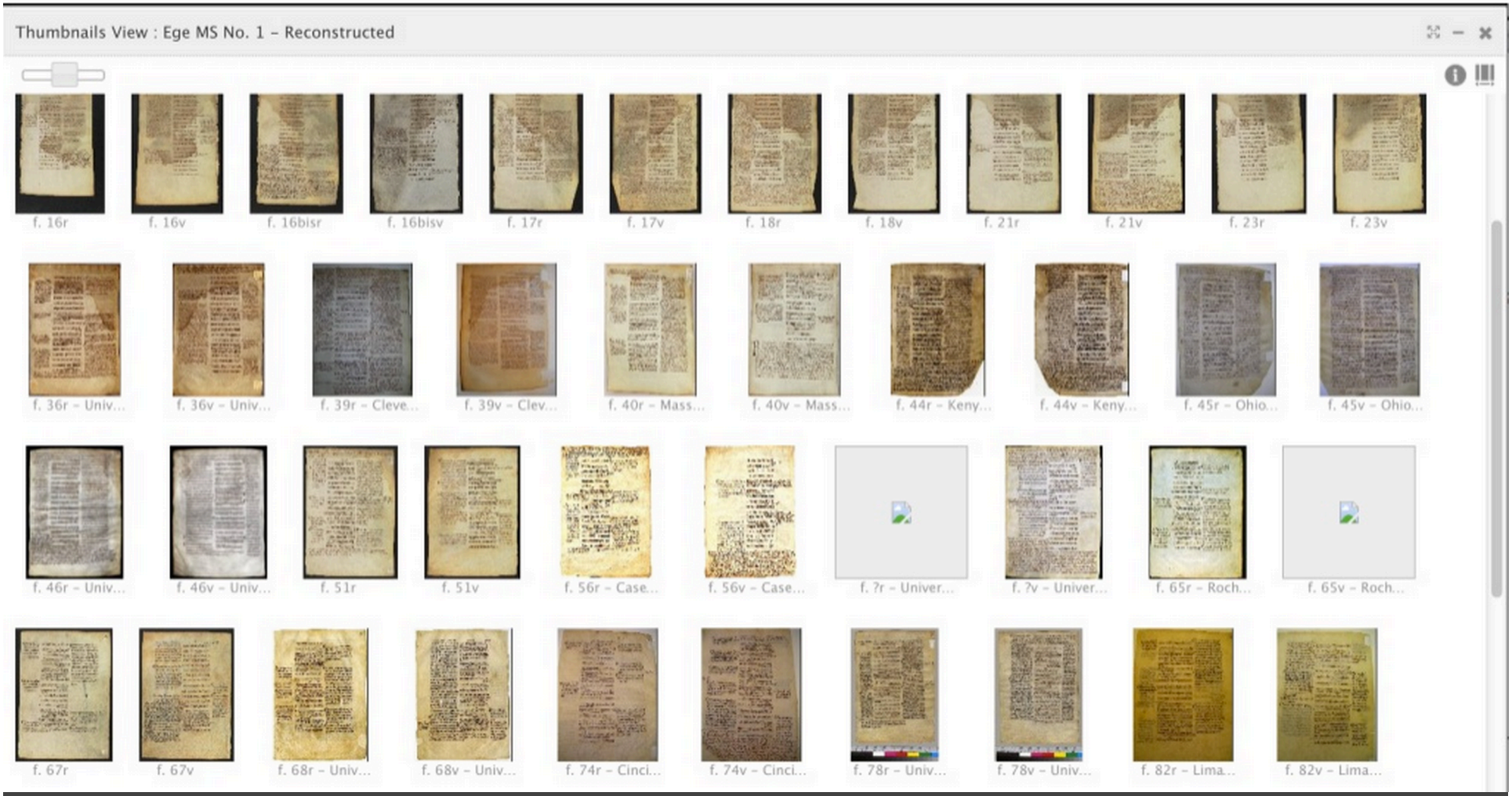
Remnants of Otto Ege MS 1, as of 2014



International Image Interoperability Framework (IIIF):

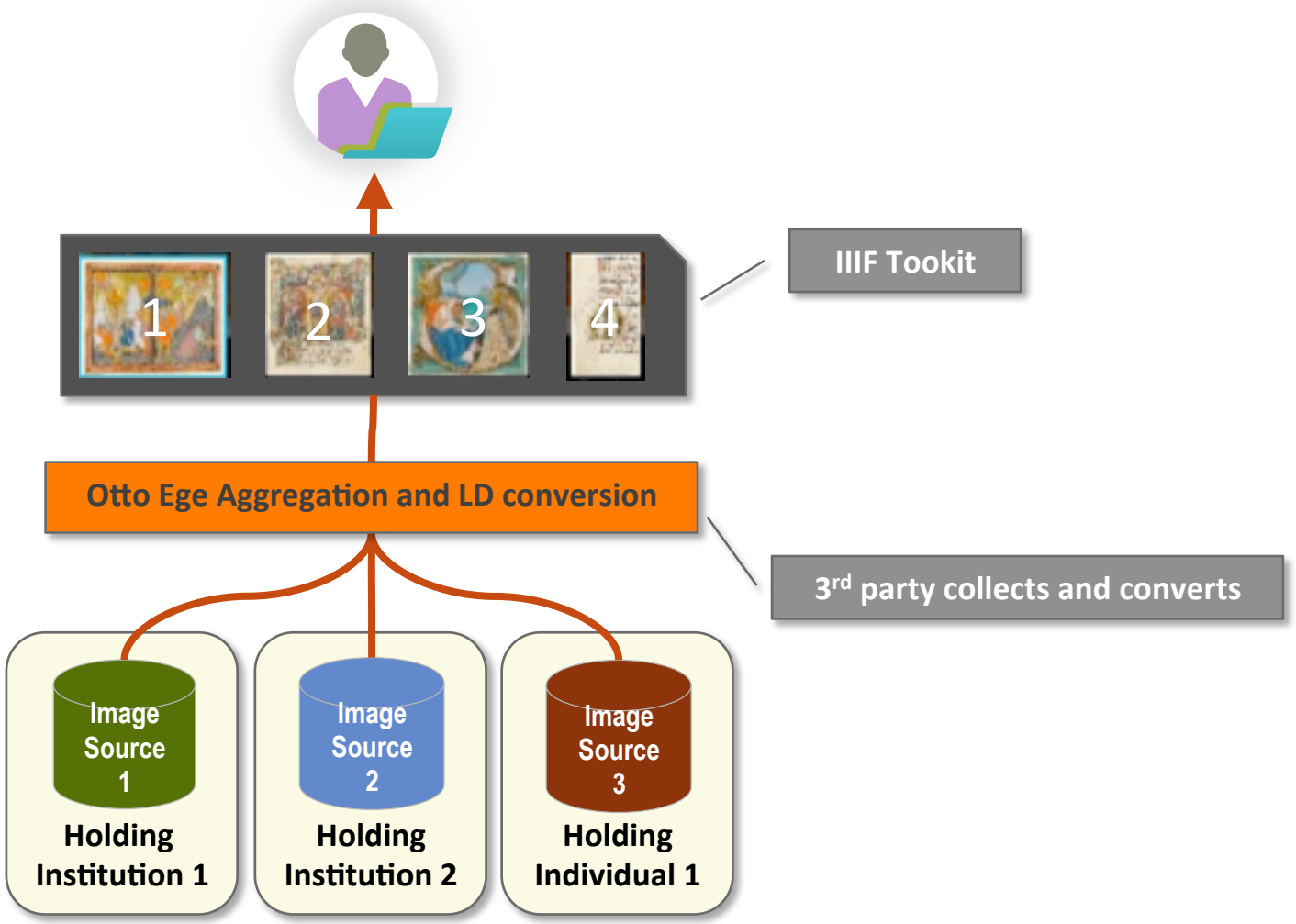
Connecting the diaspora of cultural materials:

Otto Ege MS 1, Reconstructed, in 2014



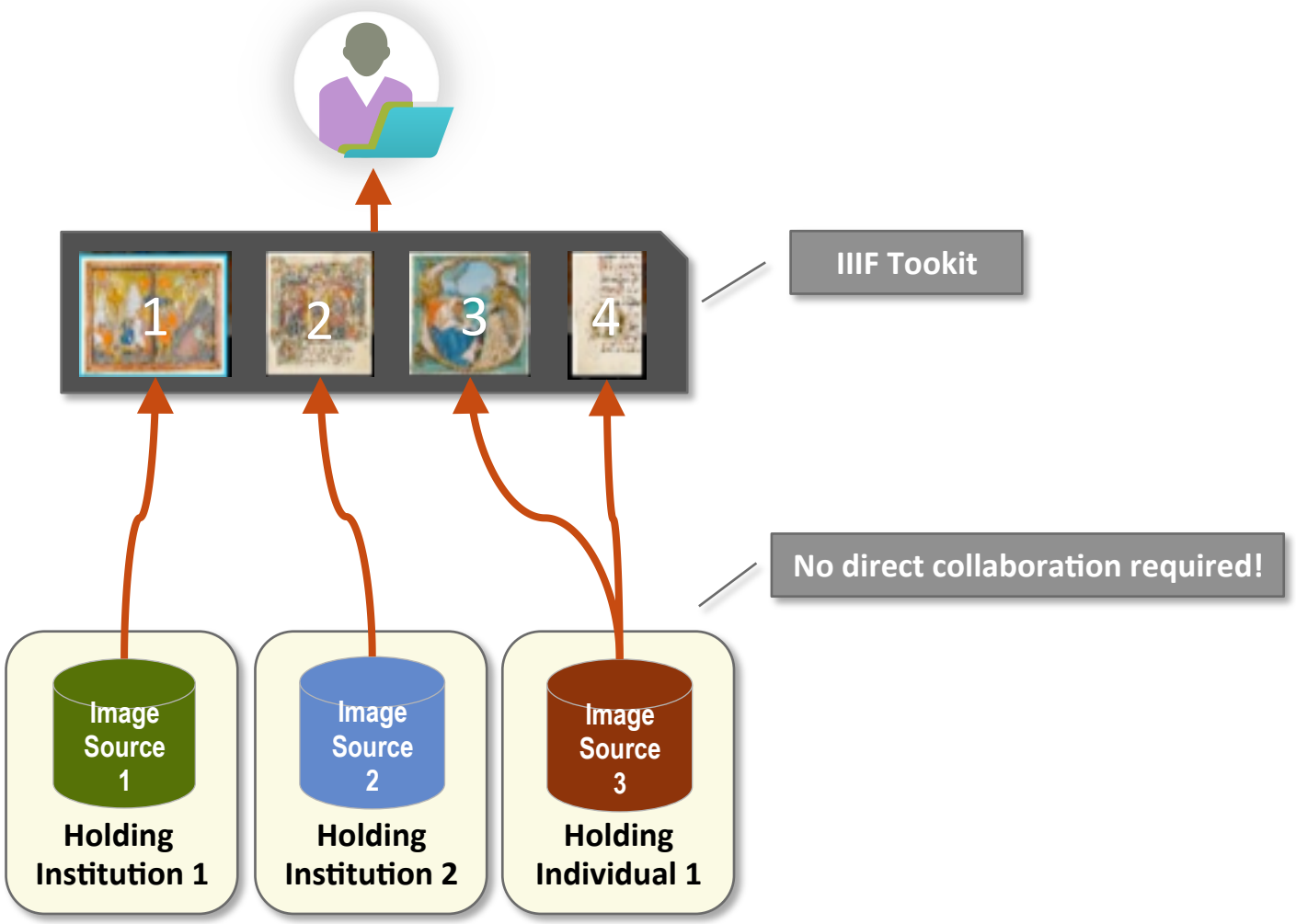
International Image Interoperability Framework (IIIF):

Otto Ege MS1: Aggregated model

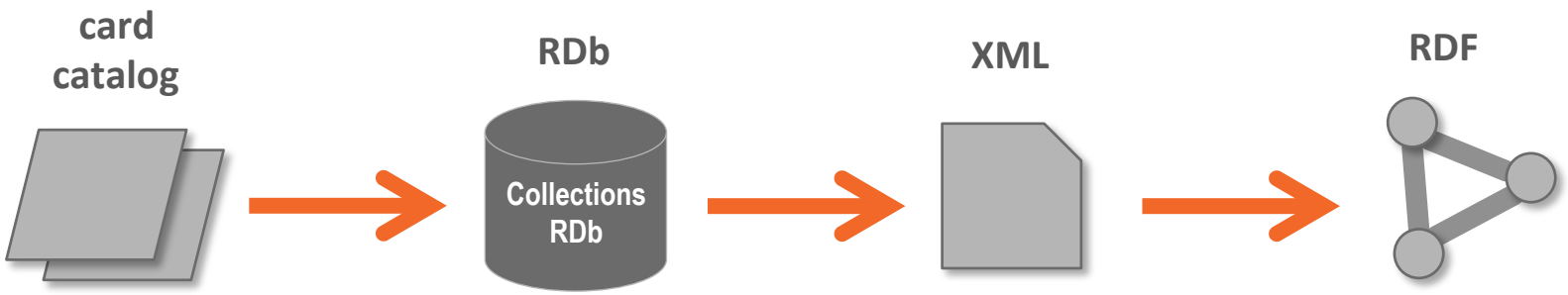


International Image Interoperability Framework (IIIF):

Otto Ege MS1: Federated model



Linked Data is a “Next Gen” data standard



- LCSH
- Dewey Decimal

- MARC, CIMI
- RDA, Z39.50

- Schemas *(e.g., LIDO, Dublin Core, EAD)*

- *Ontologies (e.g., CIDOC, BIBFRAME)*

Expressiveness

Independence

Structure, math

Organization

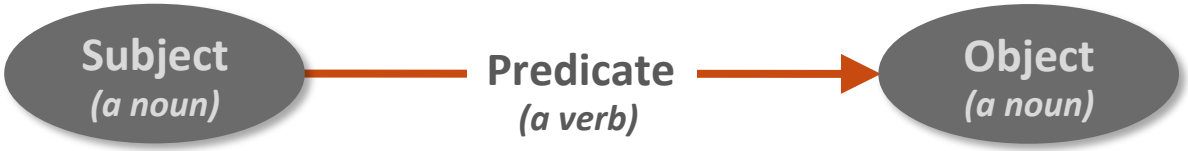
Linked Data value for cultural heritage

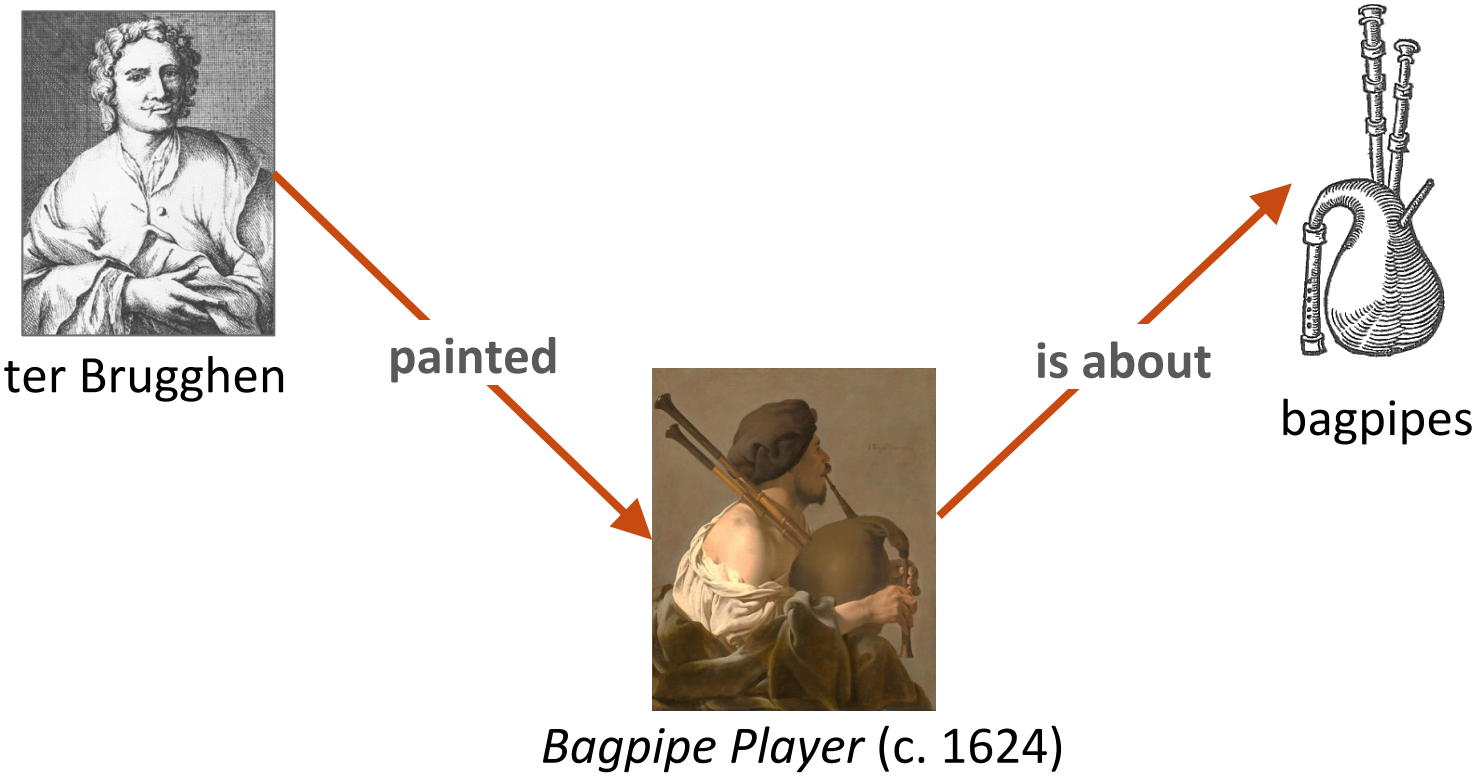
- Do more with my content
  - Eliminate silos
  - Enhance scholarship
  - Enhance the museum experience
  - Serve new audiences
  - Manage content more effectively
- Stay relevant and visible (discoverable)
  - In my domain AND at web scale
- Avoid one-off, single-use content and applications
- Enhance/extend my institutional relationships
- …and more!

INTRO TO LINKED DATA

- Why should we care about Linked Data?
- You need a few key ingredients:
  - RDF Triples: *Assert facts, create "Knowledge Graphs" using URIs*

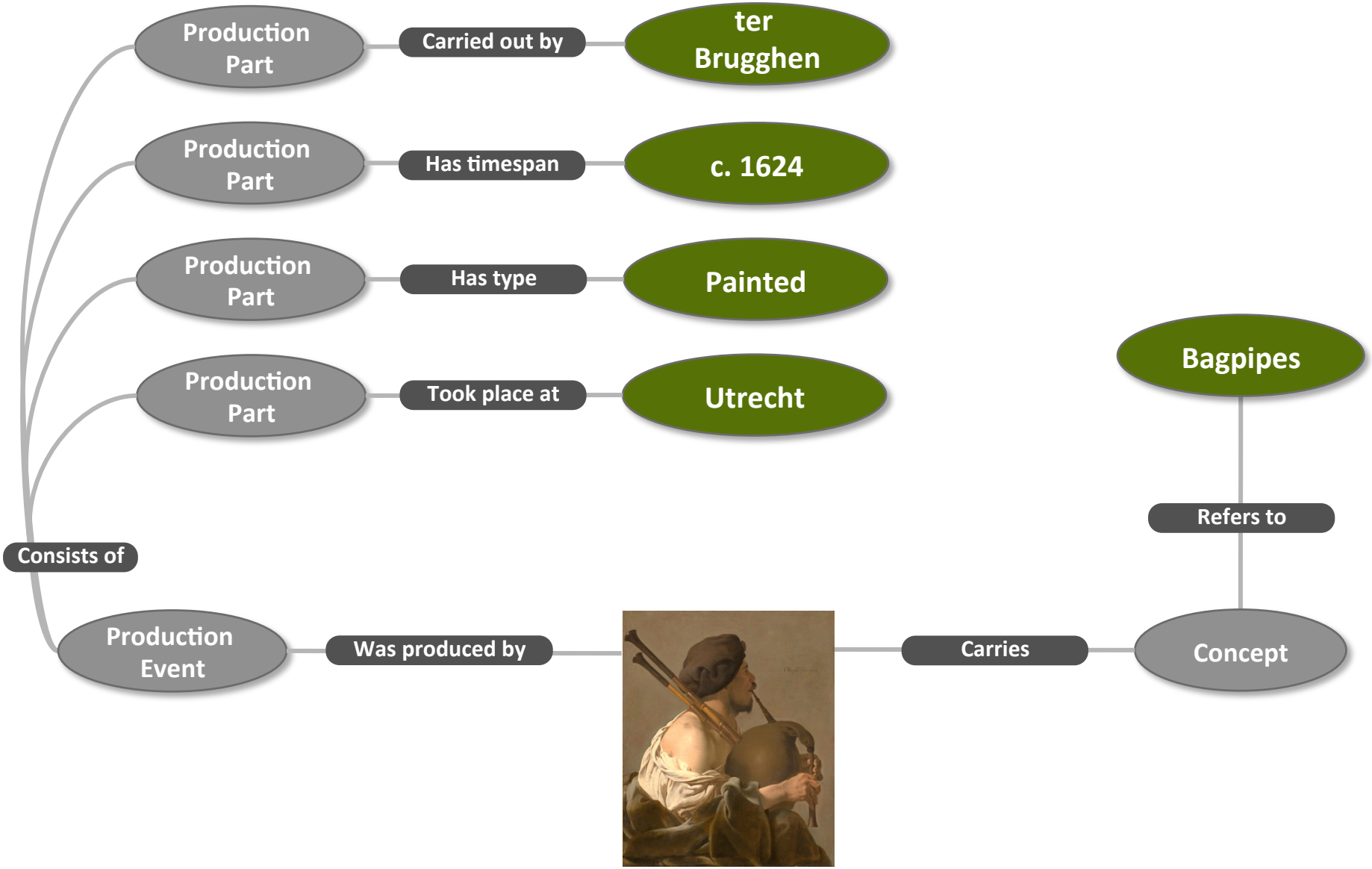
Semantic Triples: *Asserting "facts"*





http://en.wikipedia.org/wiki/File:P._Bodart_Portrait_of_Henric_Ter_Brugghen.jpg
http://www.music.iastate.edu/antiqua/bagpipe.htm
http://www.nga.gov/content/ngaweb/Collection/art-object-page.144298.html

Linking many concepts creates a “Knowledge Graph”



http://www.nga.gov/content/ngaweb/Collection/art-object-page.144298.html

URIs establish the unique ID of an instance of a concept

These "resources" are at the heart of RDF

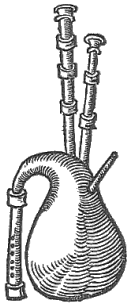
Hendrick ter Brugghen: **https://rkd.nl/en/explore/artists/13338**

http://purl.org/nga/collection/constituent/9714

https://www.freebase.com/m/07x8fh

Bagpipe Player: **http://purl.org/nga/collection/artobject/144298**

https://www.freebase.com/m/04rhvt5



bagpipes: **http://en.wikipedia.org/wiki/Bagpipes**

https://www.freebase.com/m/0192l

RDF = Resource Description Framework…a flavor of XML

```
<?xml version="1.0"?>

<rdf:RDF
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:cd="http://www.nga.gov/object/144298">

<rdf:Production
  <rdf:has_title>Bagpipe Player</rdf:has_title>
  <rdf:carried_out_by>Hendrick ter Brugghen</rdf:carried_out_by>
  <rdf:has_timespan>c. 1624</rdf:has_timespan>
  <rdf:has_type>painted</rdf:has_type>
  <rdf:took_place_at>Utrecht</rdf:took_place_at>
</rdf:Production>
.
.
.
</rdf:RDF>
```

RDF...the Resource Description Framework

- There are many flavors of RDF *syntax*
  - RDF-XML
  - Turtle
  - N-Triples
  - JSON-LD
  - RDFa
  - …etc.

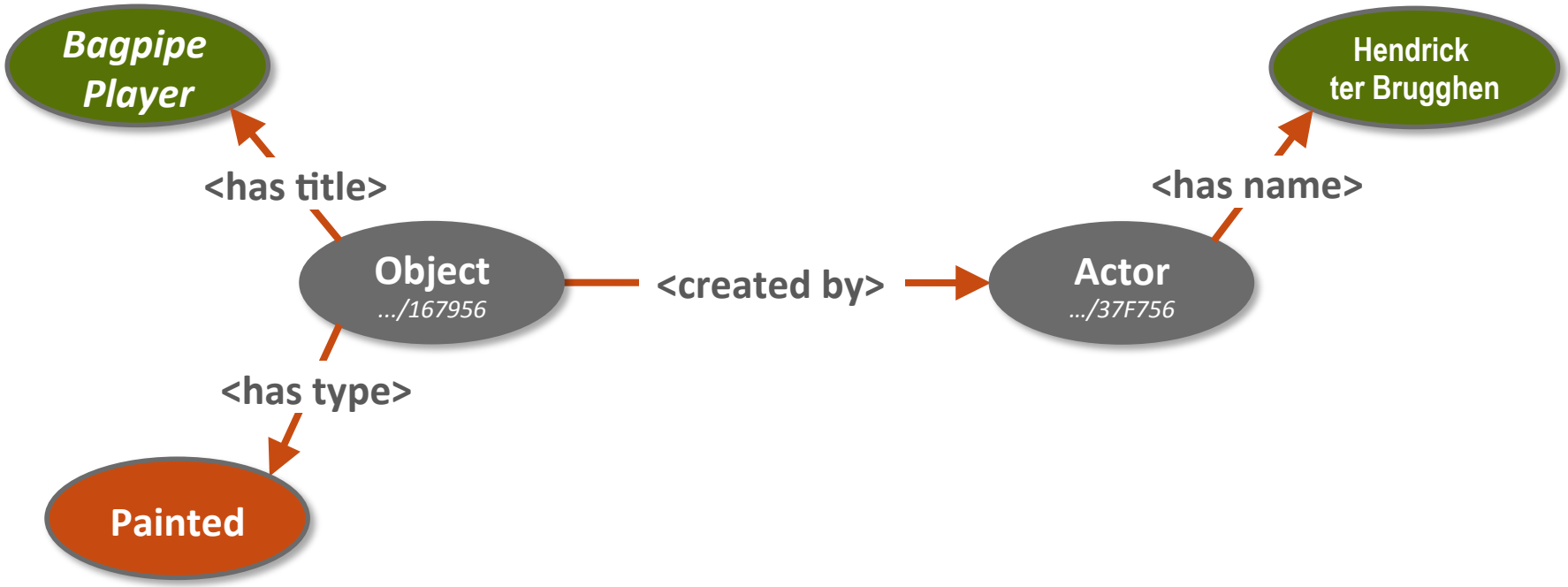
- Many tools and platforms do syntax conversion on demand, so this isn't a concern.
- Choose what works for your internal processing, and know you can change or add if needed!

INTRO TO LINKED DATA

- Why should we care about Linked Data?
- You need a few key ingredients:
  - RDF triples: *Assert facts, create "Knowledge Graphs" using URIs*
  - Ontologies and Vocabularies to establish a common language

Ontologies

- They codify meaning and structure around a set of concepts
  - Define entities and predicates that connect them
  - Guidance for linking to formulate assertions
  - Guidance for mapping instances of data (names/types) to concepts



Ontologies

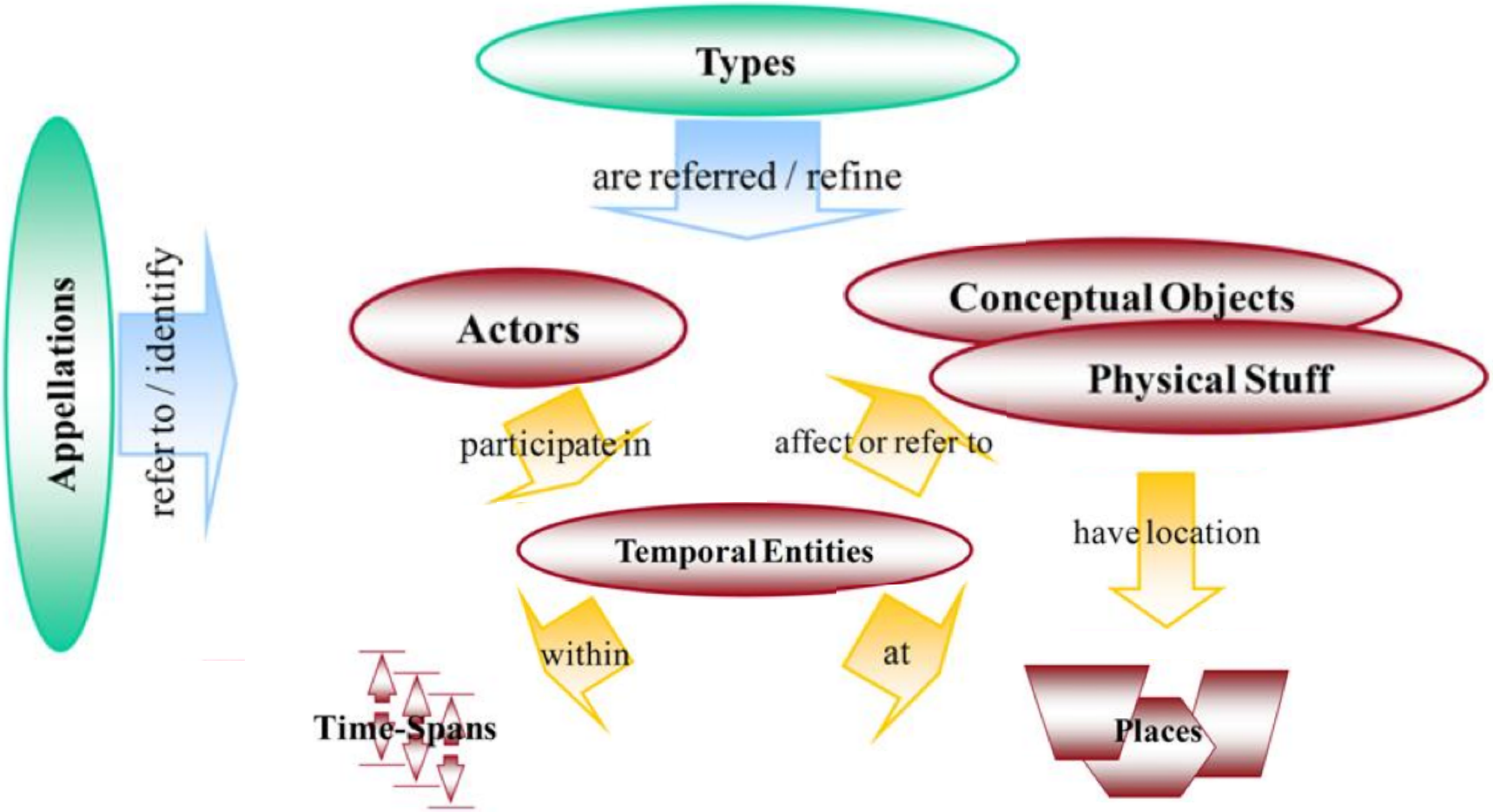
- ***General-purpose ontologies***
  - **schema.org**
  - Commonly used in the industry: **skos, bibo, foaf, geonames, prov, etc.**

- ***Domain-specific ontologies***
  - **Conceptual Reference Model (CRM)** for cultural heritage writ large
  - **FRBR** and **BIBFRAME** for libraries
  - A few contenders in development for archives

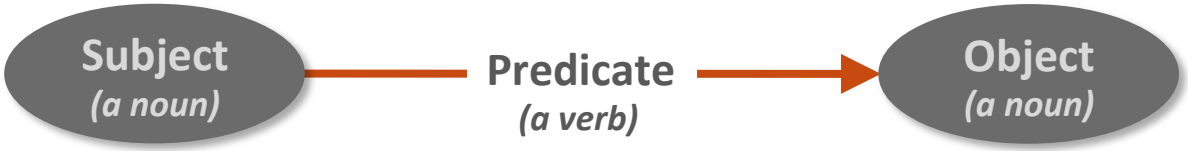
CIDOC-CRM, an ontology for cultural heritage

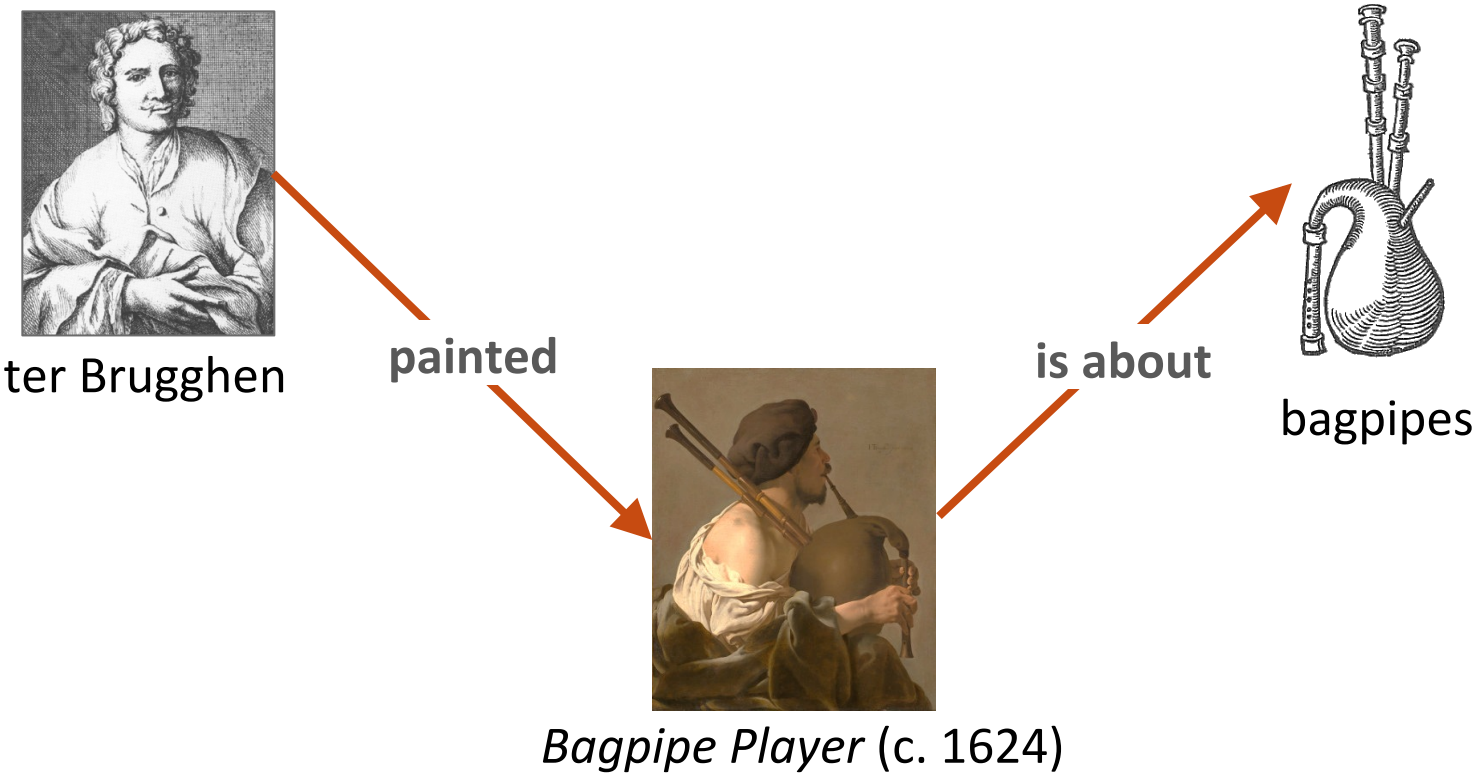
- Created by the International Council of Museums
- The product of more than 20 years of work
- An ISO standard
- Only 86 classes and 137 properties
- Event-based (both persistent things and temporary things
- Easily extended
- Proving robust in the face of modeling a broad array of cultural heritage data

Ontologies: *CIDOC-CRM – a relatively simple model*



Semantic Triples: *Asserting "facts"*





http://en.wikipedia.org/wiki/File:P._Bodart_Portrait_of_Henric_Ter_Brugghen.jpg
http://www.music.iastate.edu/antiqua/bagpipe.htm
http://www.nga.gov/content/ngaweb/Collection/art-object-page.144298.html

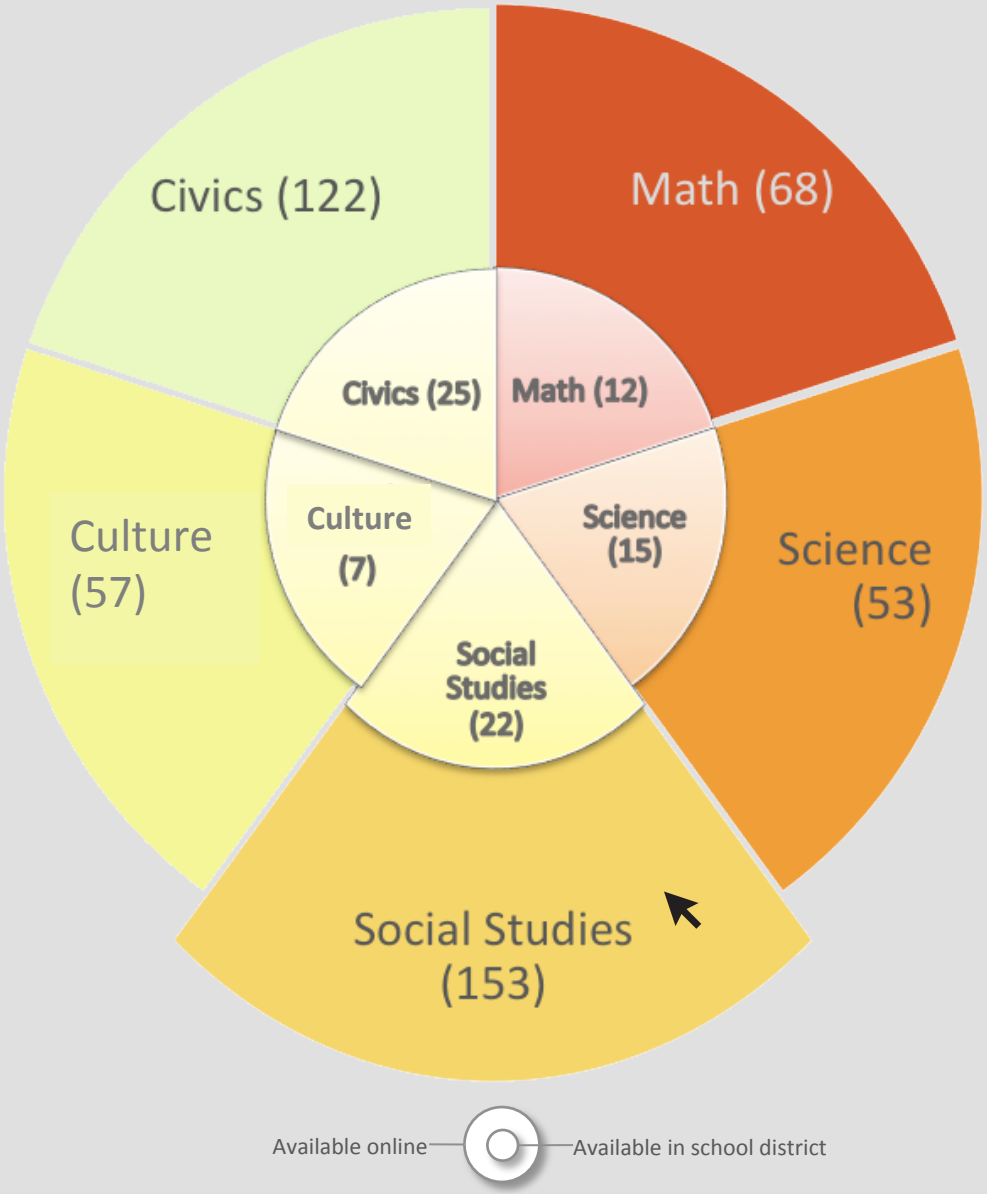
Exercise: *Predicate Playground*

- Connect the dots!
  - Split into small groups
  - Use the elements on the page to create a graph of triples
  - Use your personal knowledge and/or the web to build your graph. Don't worry about the CRM for now…and name your predicates as you see fit.
  - Brief out your examples. Can you divine a general topic from your elements?
  - Wouldn't it be a more interesting and complete picture if this data were connected into one big graph? With a resource like VIAF you can do it easily!
  - What if a teach could make use of this graph to discover the availability of resources?

Subject: **All** | Curricula: **Core** | Grade Level: **6-12**

Results for **Benjamin Franklin**

534 results total



Social Studies

Texts
11 Internal
74 External

Videos
2 Internal
12 External

Visuals
8 Internal
59 External

Activity Guides
1 Internal
8 External

See details

My Lesson Plans

Benjamin Franklin: A Great Thinker

Math
- Worksheet

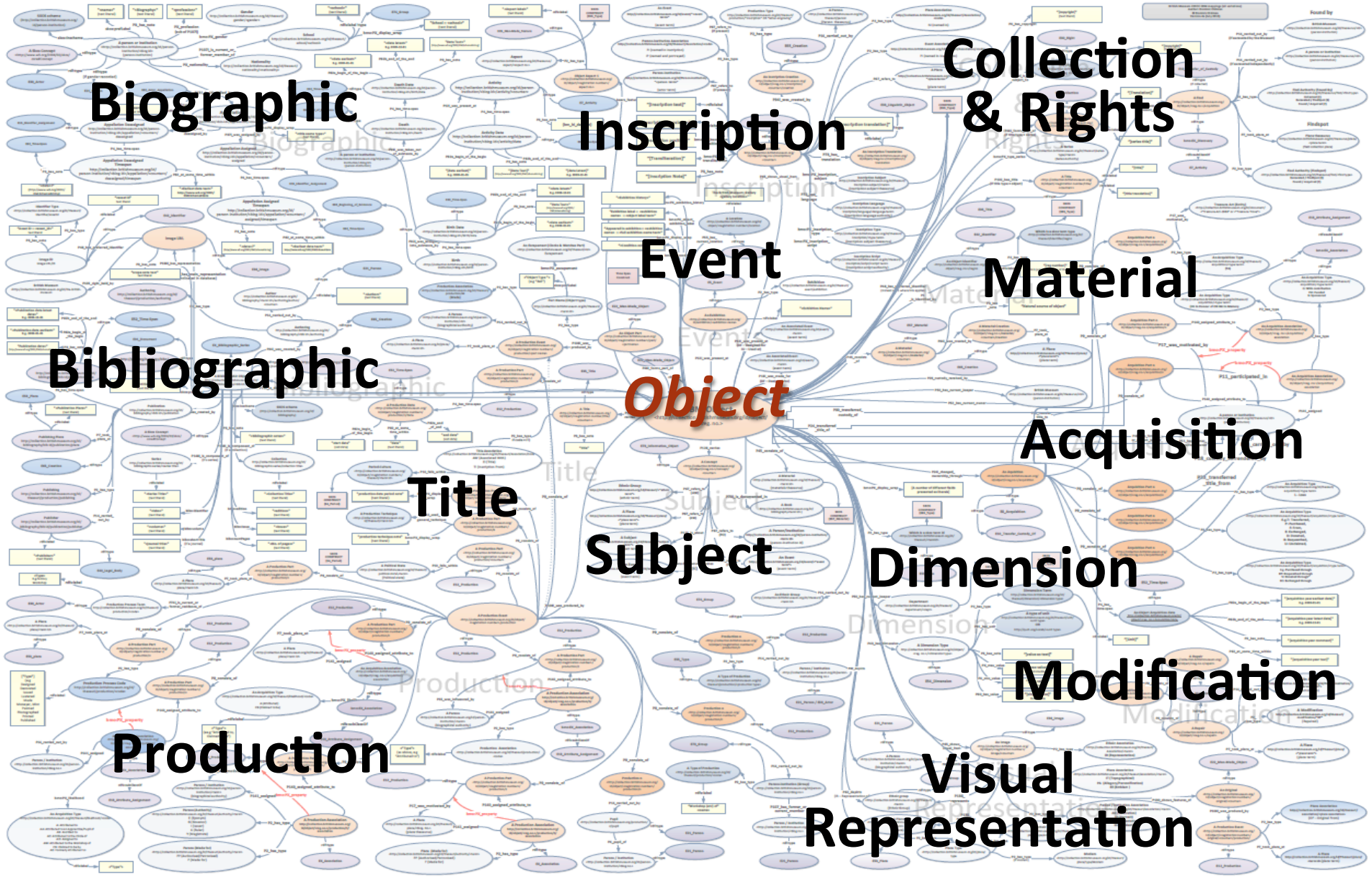
Science
- On seasonal time (Hudson)
- Electricity Worksheet

Civics
-

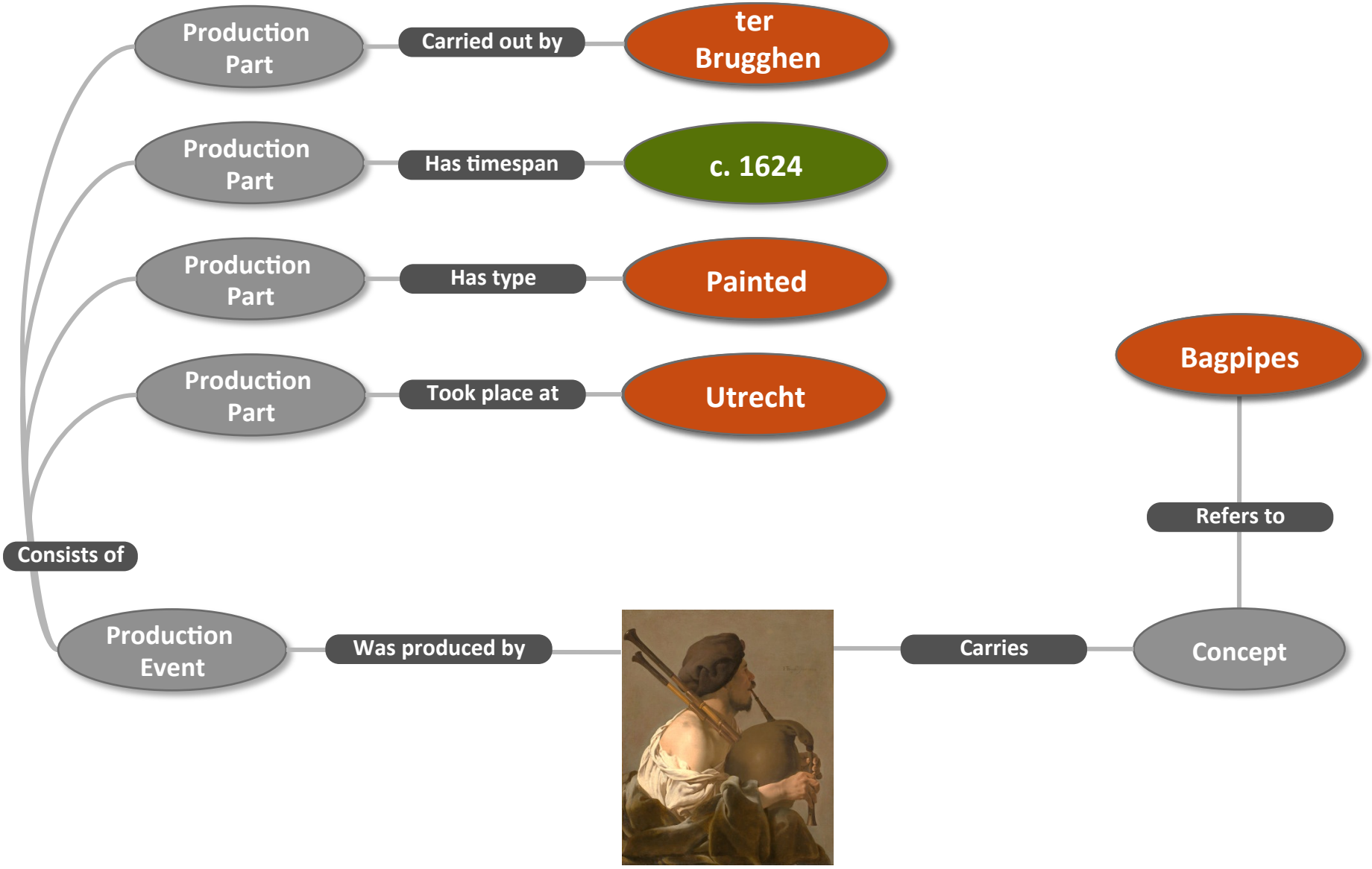
Social Studies
-

Culture
- Vie de Franklin, écrite par lui-même - Tome I (French)
- Vie de Benjamin Franklin, écrite par lui-même - Tome II (French)

British Museum Collection Mapping using CIDOC-CRM



Mapping to the CRM model for “production”



Vocabularies and Instance Data

- 3rd party authorities, e.g.
  - Getty Vocabularies
  - GeoNames
  - Virtual International Authority File (VIAF)
  - DBpedia

- Local authorities
  - Vocabularies unique to your institution (e.g., department names)
  - Your variation on an existing authority (e.g., we prefer a variant name of the artist)

INTRO TO LINKED DATA

- Why should we care about Linked Data?
- You need a few key ingredients: RDF triples, Ontologies and Vocabularies
- Modeling and Mapping

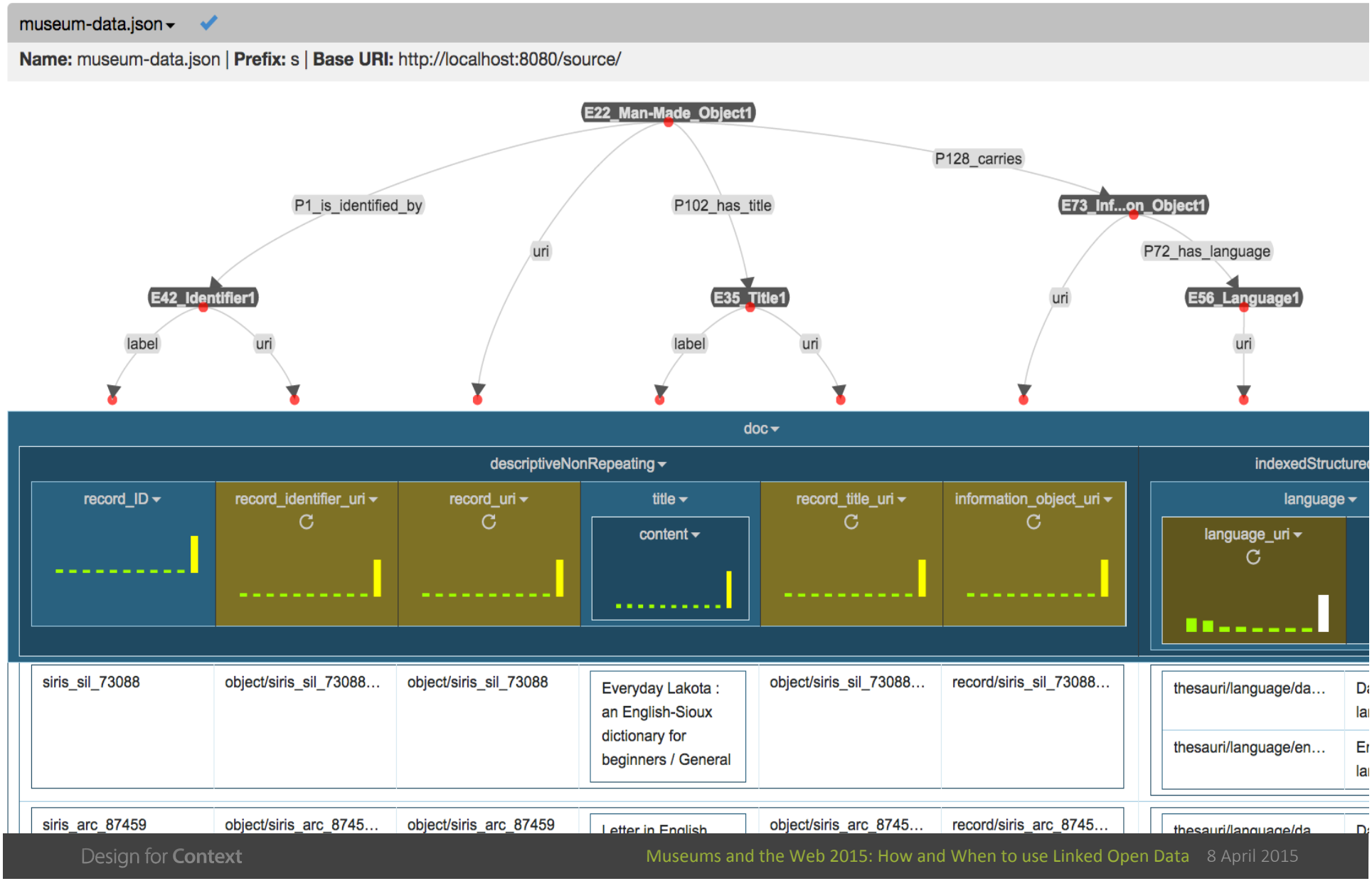
Modeling and Mapping

- ***Modeling***
  - Defining the concepts in our domain of interest
    - *What to call them, how to type them*
    - *Their relationships to one another*
  - Rules for linking “things” together
  - Based on analysis of your existing data and your knowledge of the domain

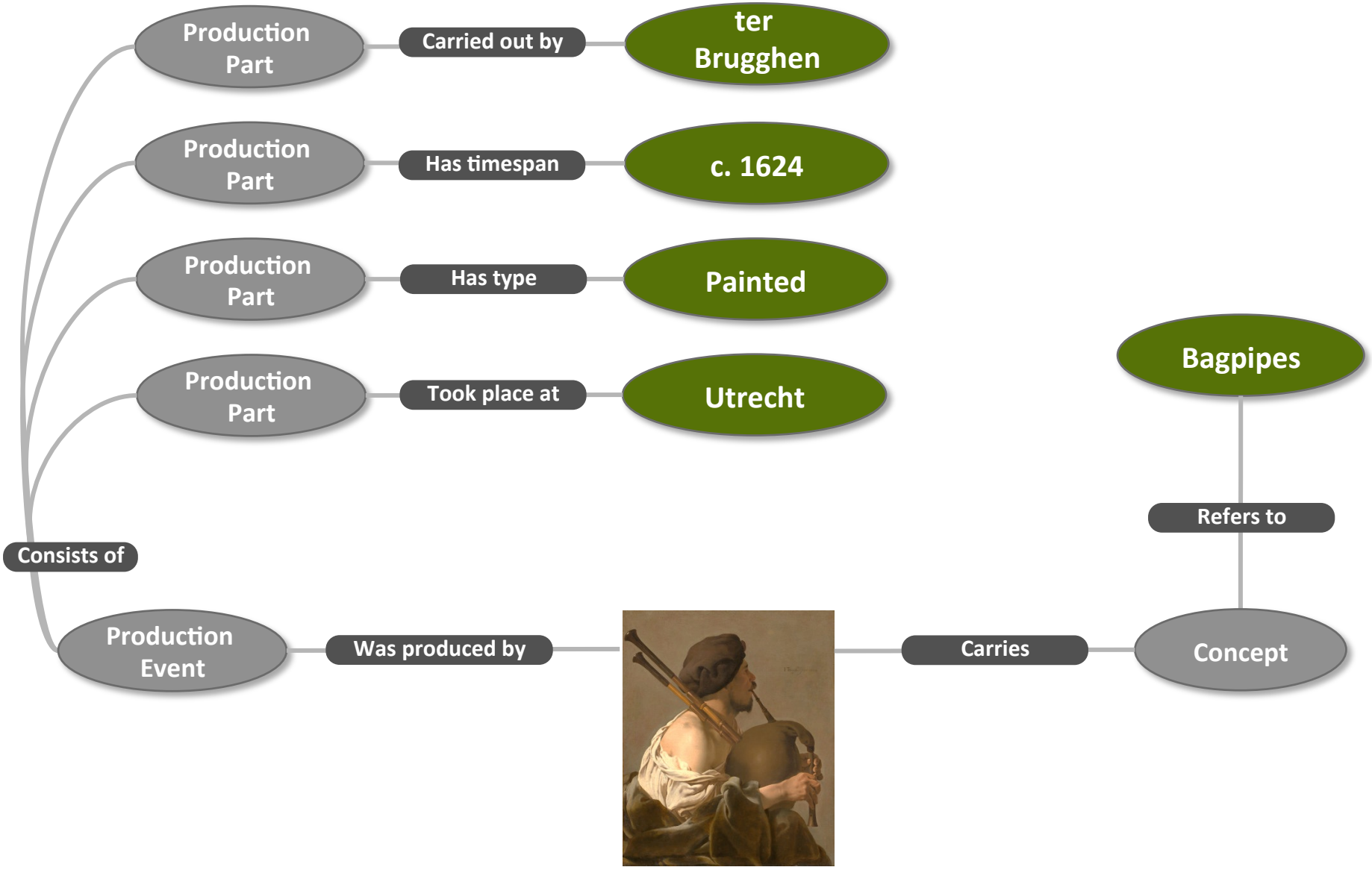
- ***Mapping***
  - Translating your data to triples using the model, linking rules and vocabularies

Mapping view in KARMA tool

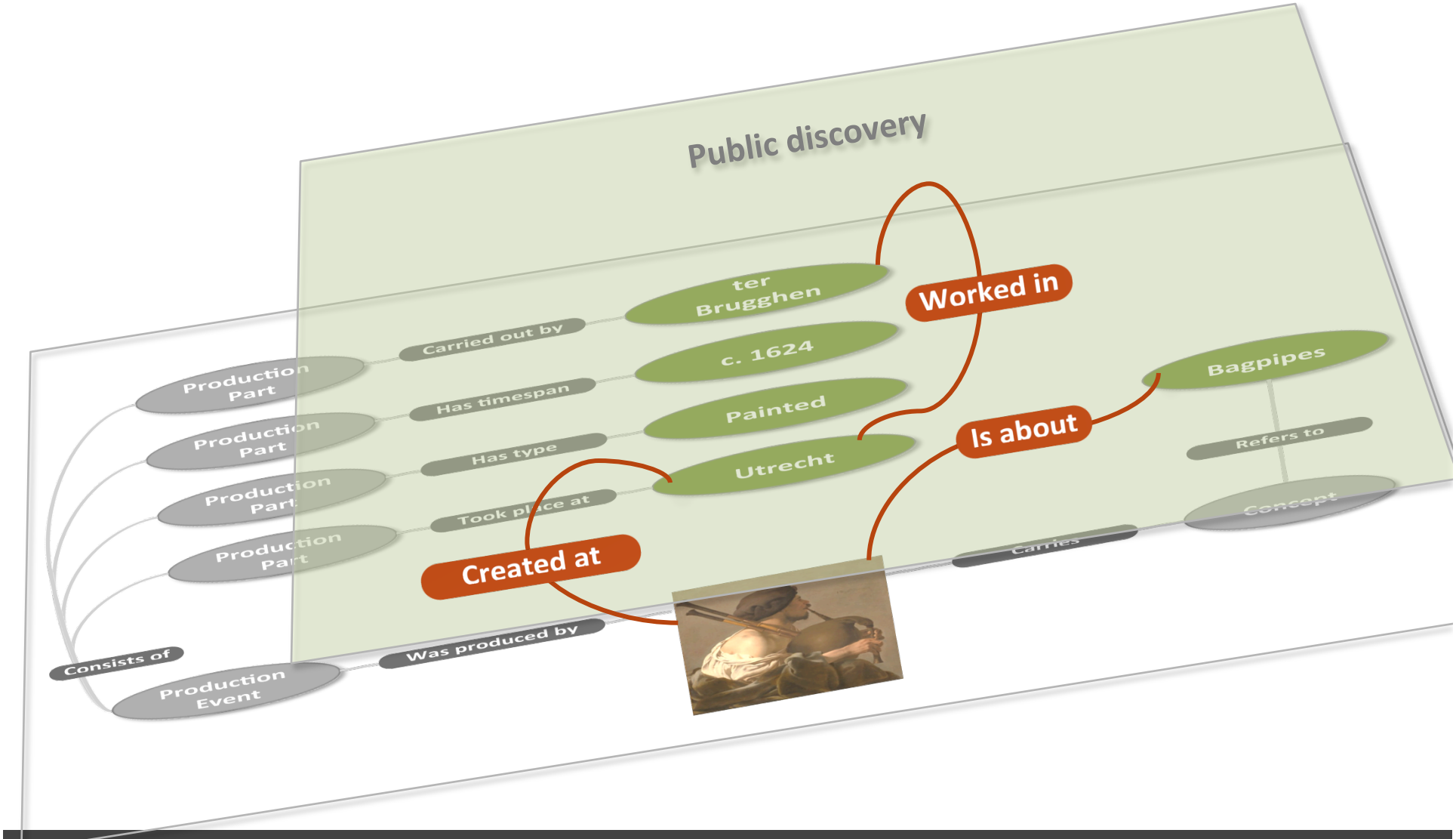
http://isi.edu/
https://github.com/usc-isi-i2/Web-Karm



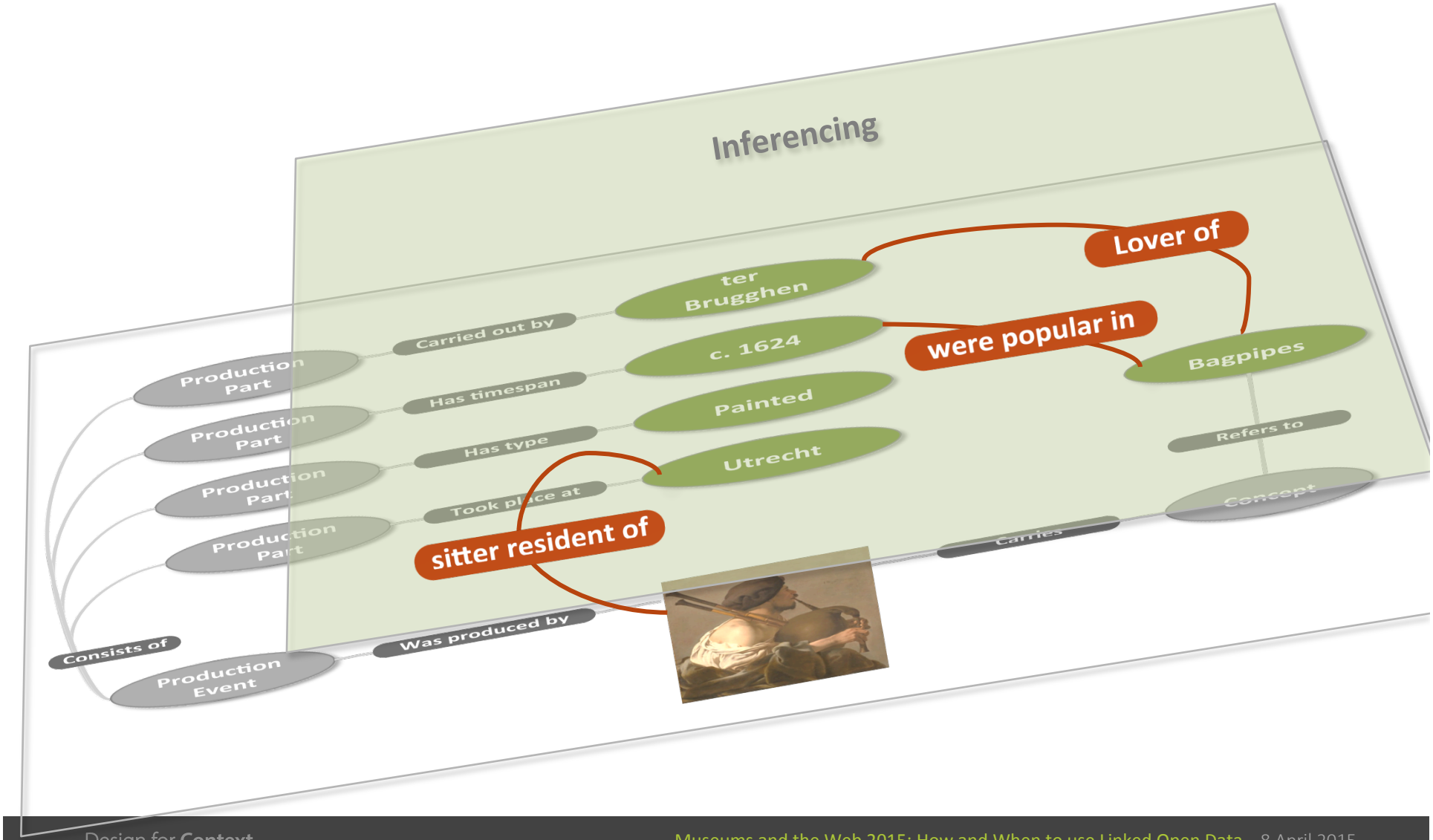
Mapping: *Shortcuts for user convenience*



Shortcuts and non-destructive contexts



Inferencing: *Eliciting facts without linking explicitly*



INTRO TO LINKED DATA

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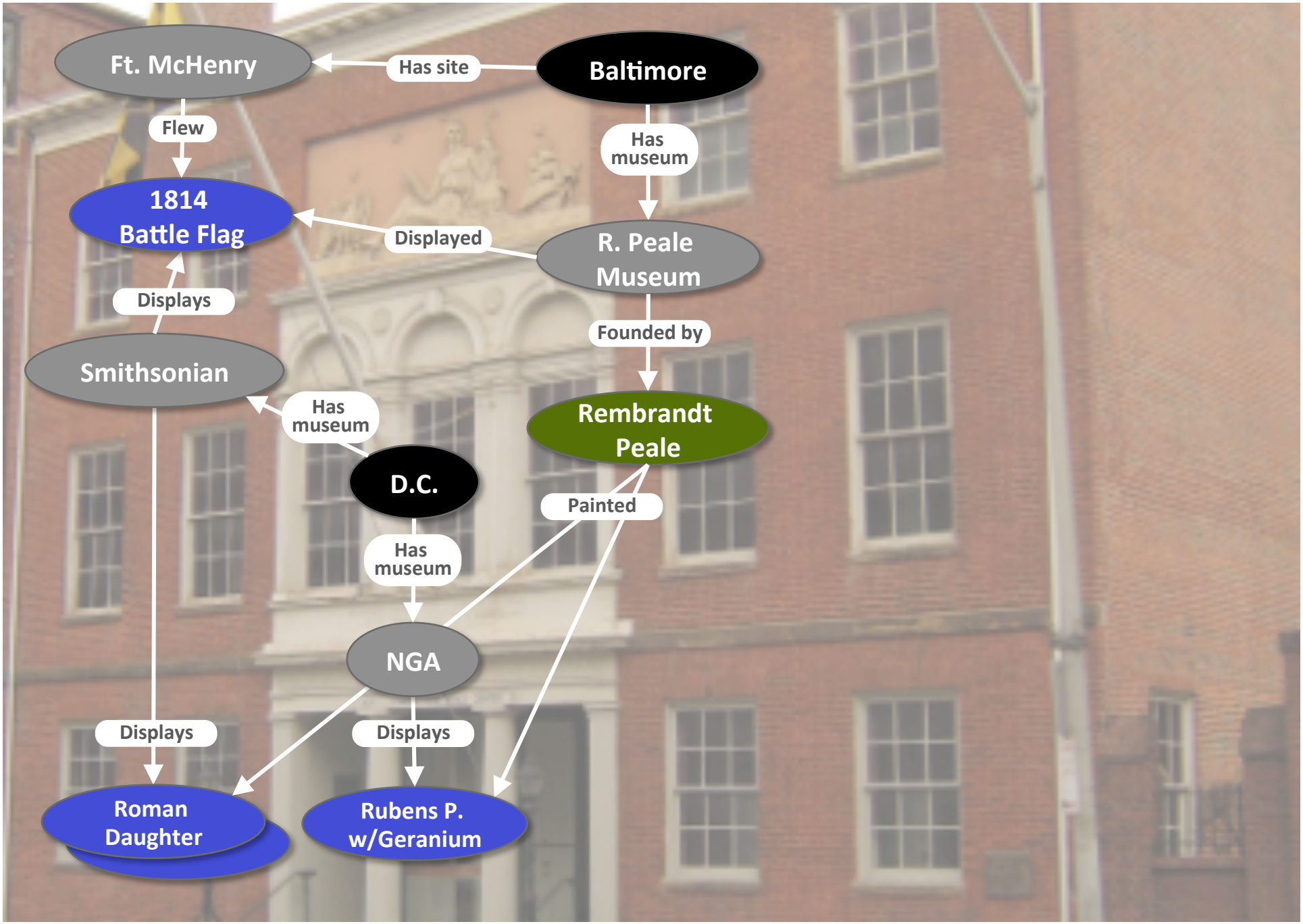
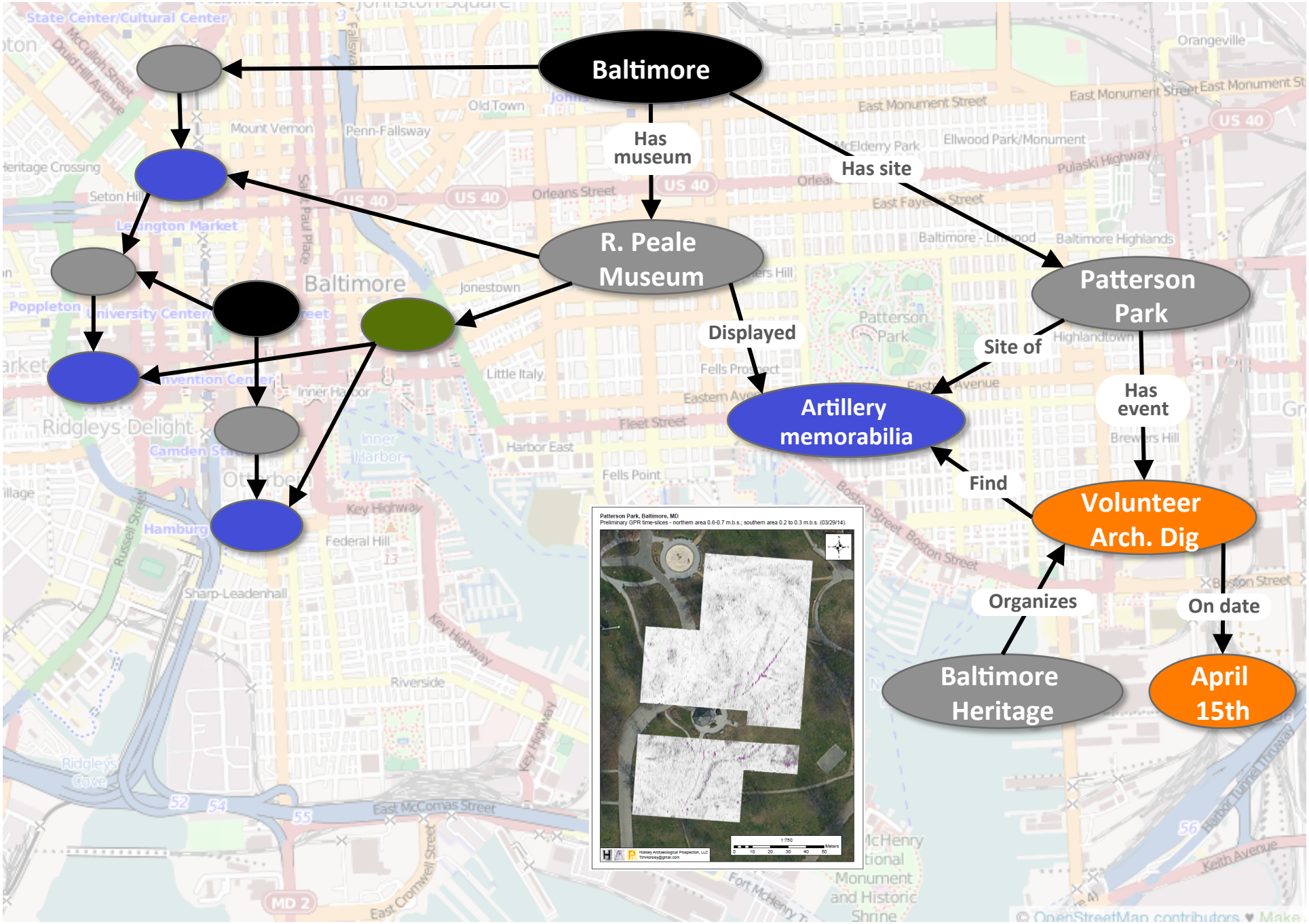
- You need a few key ingredients: RDF triples, Ontologies and Vocabularies
- Modeling and Mapping
- Enhancing capacity for “serendipitous discovery” by linking between LD sources


Ft. McHenry
Has site
Baltimore
Flew
Has museum
1814 Battle Flag
Displayed
R. Peale Museum
Displays
Founded by
Smithsonian
Has museum
Rembrandt Peale
D.C.
Painted
Has museum
NGA
Displays
Displays
Roman Daughter
Rubens P. w/Geranium


Baltimore
Has museum
Has site
R. Peale Museum
Patterson Park
Displayed
Site of
Has event
Artillery memorabilia
Find
Volunteer Arch. Dig
Organizes
On date
Baltimore Heritage
April 15th
Patterson Park, Baltimore, MD
Preliminary GPR time-slices - northern area 0.6-0.7 m.b.s.; southern area 0.2 to 0.3 m.b.s. (03/29/14).

List of potential data sources for Peale example

- Cultural data
  - Cultural object information
  - Historical exhibition information
  - Images/media
- Geographic data
  - Placenames
  - Geolocations
  - Maps
  - Building registry
- Public data
  - Public events
  - Organizational events
- Historical data
  - State and city history
  - Art history
  - American, British, Canadian History
  - Historical biography

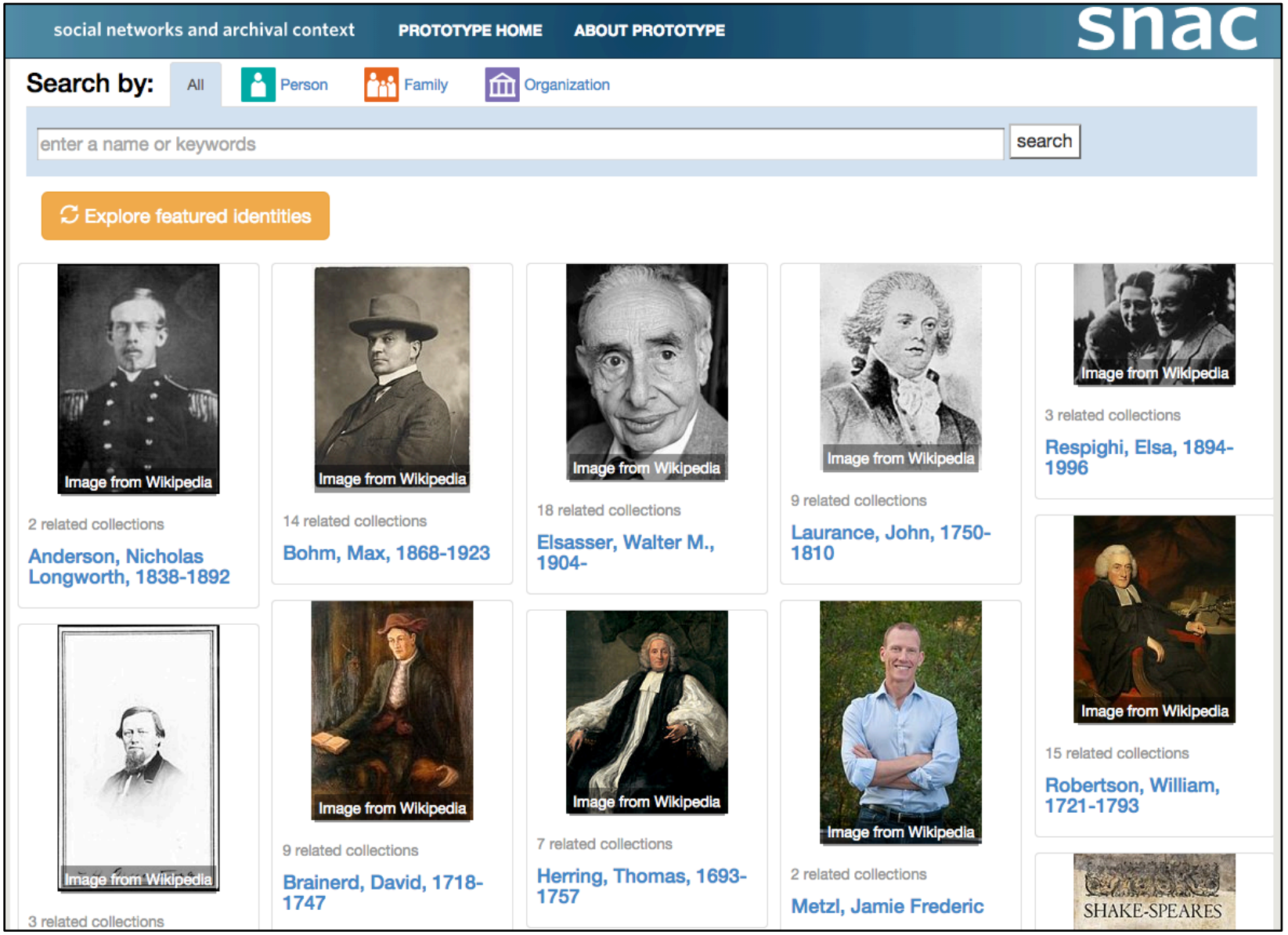
WHAT'S OUT THERE IN THE WILD?

Examples of linked data applications on the web

Design exercises and thought pieces to extend our thinking on some concepts

William Suttle, "Untitled", 1938, Smithsonian American Art Museum http://americanart.si.edu/collections/search/artwork/?id=23561

Social Networks & Archival Context (SNAC)



http://socialarchive.iath.virginia.edu/snac/search

Social Networks & Archival Context (SNAC)

social networks and archival context PROTOTYPE HOME ABOUT PROTOTYPE snac

Bohm, Max, 1868-1923 Alternative names

Dates:
birth 1868
death 1923
Gender:

Authority Source: WorldCat, VIAF, LC
Nationality:
Language:

Biographical notes:

Max Bohm (1868-1923) was a painter in Provincetown, Mass.

Max Bohm was born on January 21, 1868, in Cleveland, Ohio. He began his study of art in 1887 and studied in artist communities in Brittany and in Paris at the Academie Julian with Boulanger, Lefebvre, and Benjamin Constant. He and his family spent the next several decades moving between France, England, and various places in the U.S. Eventually, they settled in Bronxville, N.Y. and had a cottage in Provincetown, Mass., where Bohm died on September 19, 1923.

From the description of Max Bohm papers, 1873-1970, bulk 1880-1959. (Unknown). WorldCat record id: 430380032

From the description of Max Bohm papers, 1870-1970, bulk 1880-1959. (Unknown). WorldCat record id: 422875086

Painter; Provincetown, Mass.

Born in Cleveland, Ohio.

From the description of Max Bohm papers, 1856-1964. (Unknown). WorldCat record id: 227190065

American painter.

From the description of Receipt, 1898 Aug. 13. (Getty Research Institute). WorldCat record id: 82151837

Links to collections

Archival Collections 14

creator of | referenced in

BOHM, MAX. Artist file : miscellaneous uncataloged material.
Museum of Modern Art (MOMA)

Bohm, Max, 1868-1923. Artist file.
Brooklyn Museum Libraries & Archives

Bohm, Max, 1868-1923. Max Bohm papers, 1856-1964.
Unknown (ISIL:DSI-AAA)

Bohm, Max, 1868-1923. Max Bohm papers, 1870-1970, bulk 1880-1959.
Unknown (ISIL:DSI-AAA)

Bohm, Max, 1868-1923. Max Bohm papers, 1873-1970, bulk 1880-1959.
Unknown (ISIL:DSI-AAA)

Bohm, Max, 1868-1923. Receipt, 1898 Aug. 13.
Getty Research Institute

Bohm, Max. [Max Bohm] : artist file
John and Mable Ringling Museum of Art Library

Milch Gallery. Milch Gallery records, 1911-1980.
Unknown (ISIL:DSI-AAA)

Milch Gallery. Milch Gallery records, 1911-1980.
Unknown (ISIL:DSI-AAA)

Visualize:

- List collection locations
- Radial Graph Demo
- View source EAC-CPF

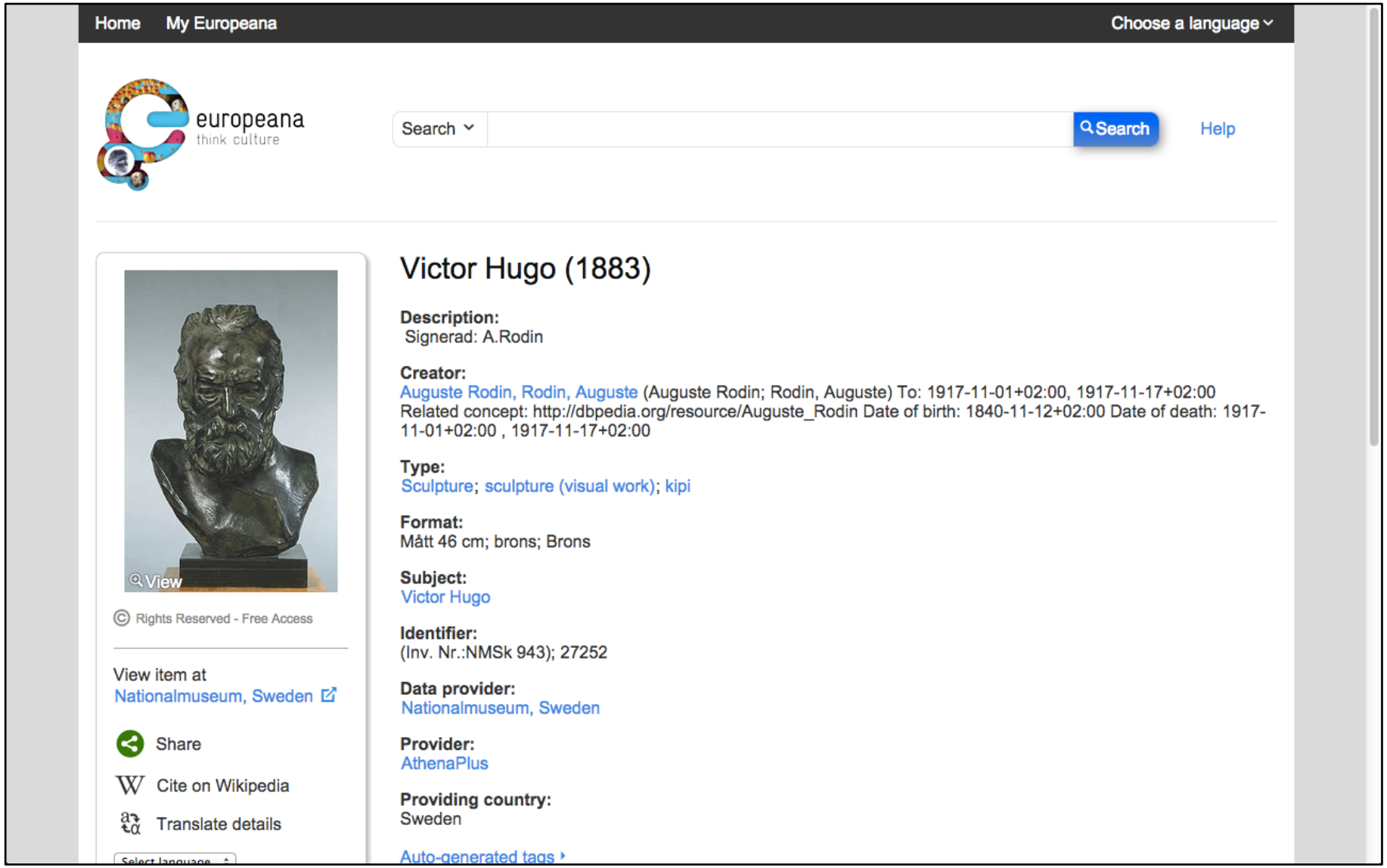
Subjects:

- Painting, American
- Painting--Study and teaching

Occupations:

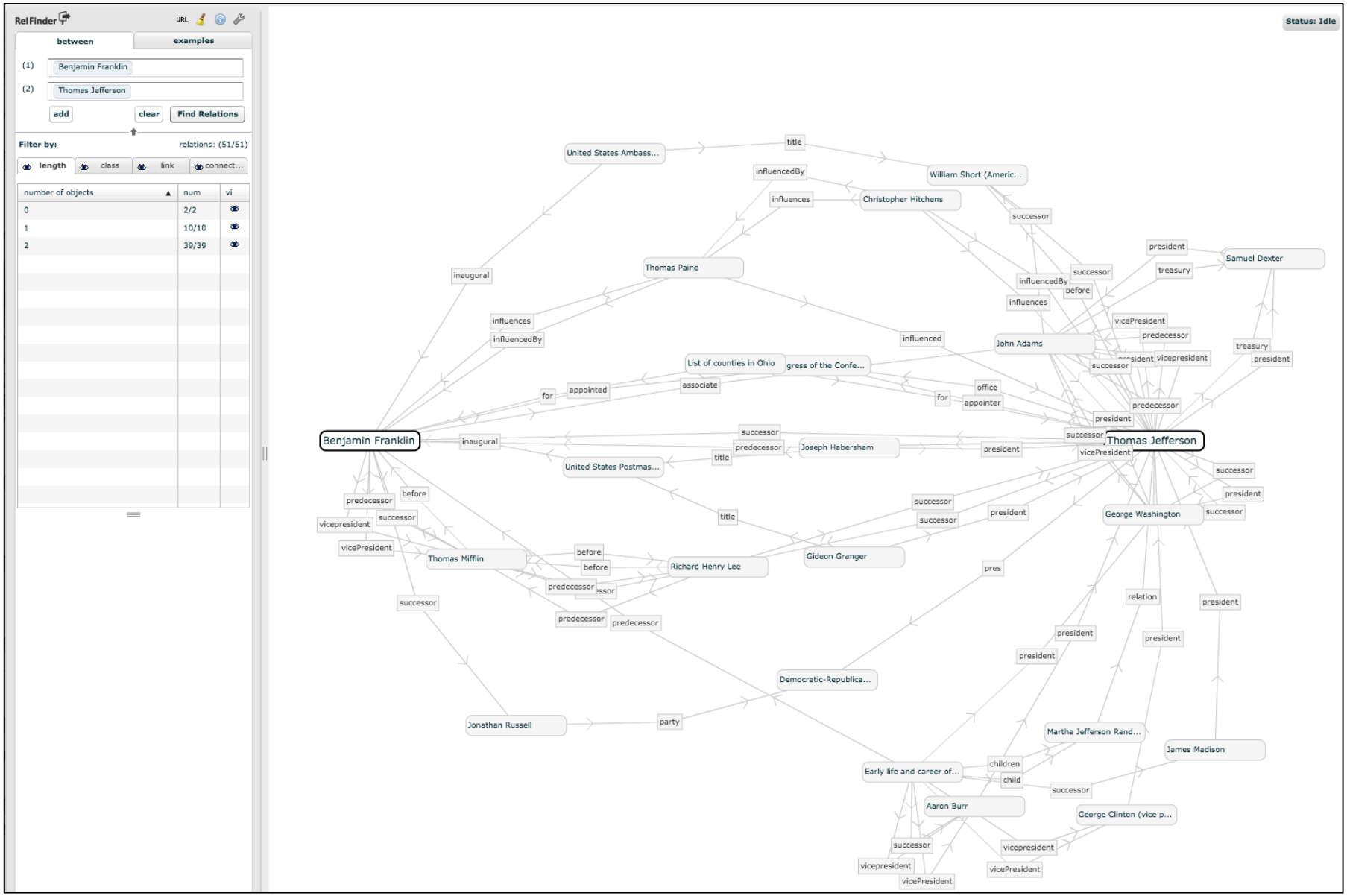
not available for this record

Europeana



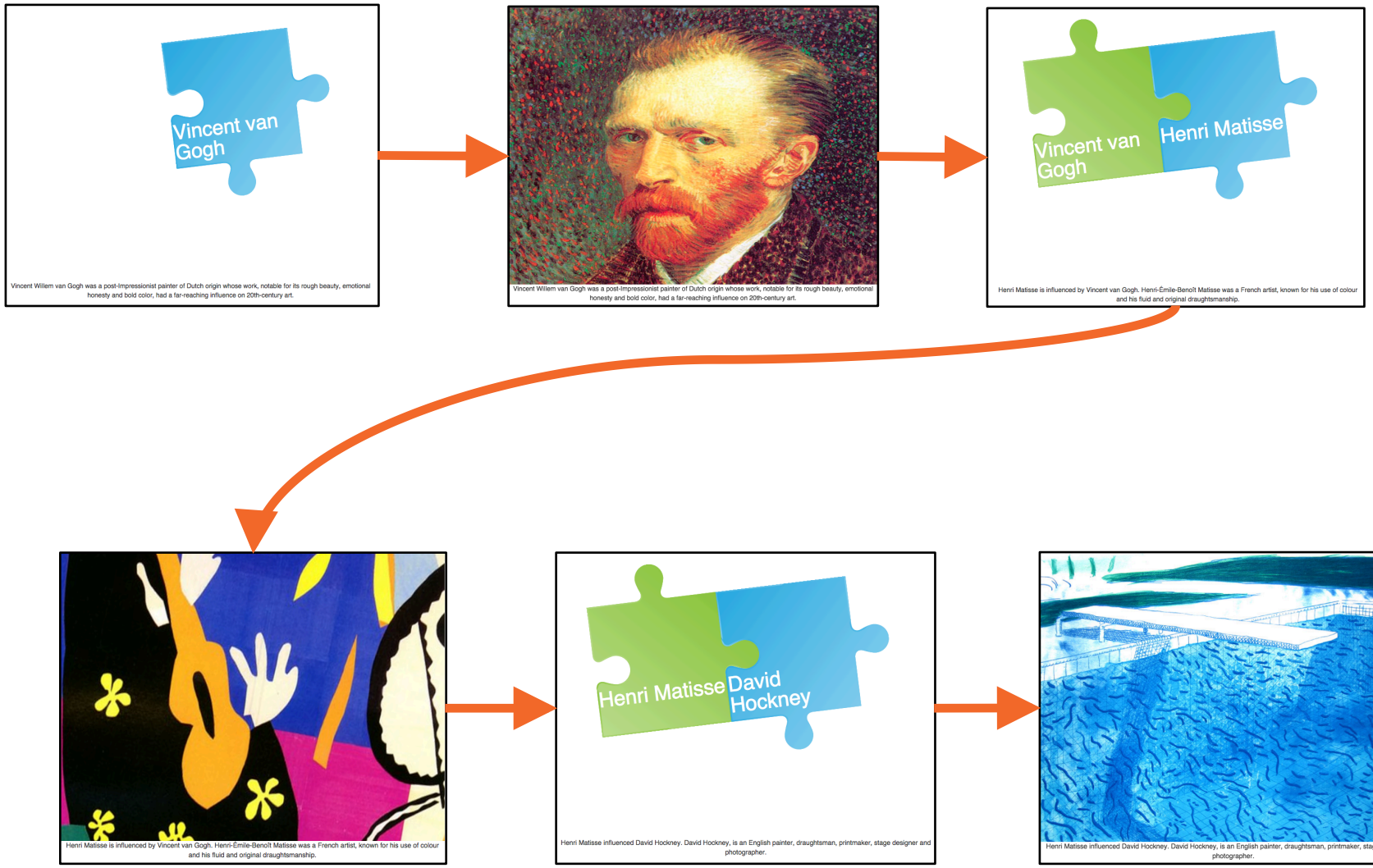
http://www.europeana.eu/portal/

RelFinder



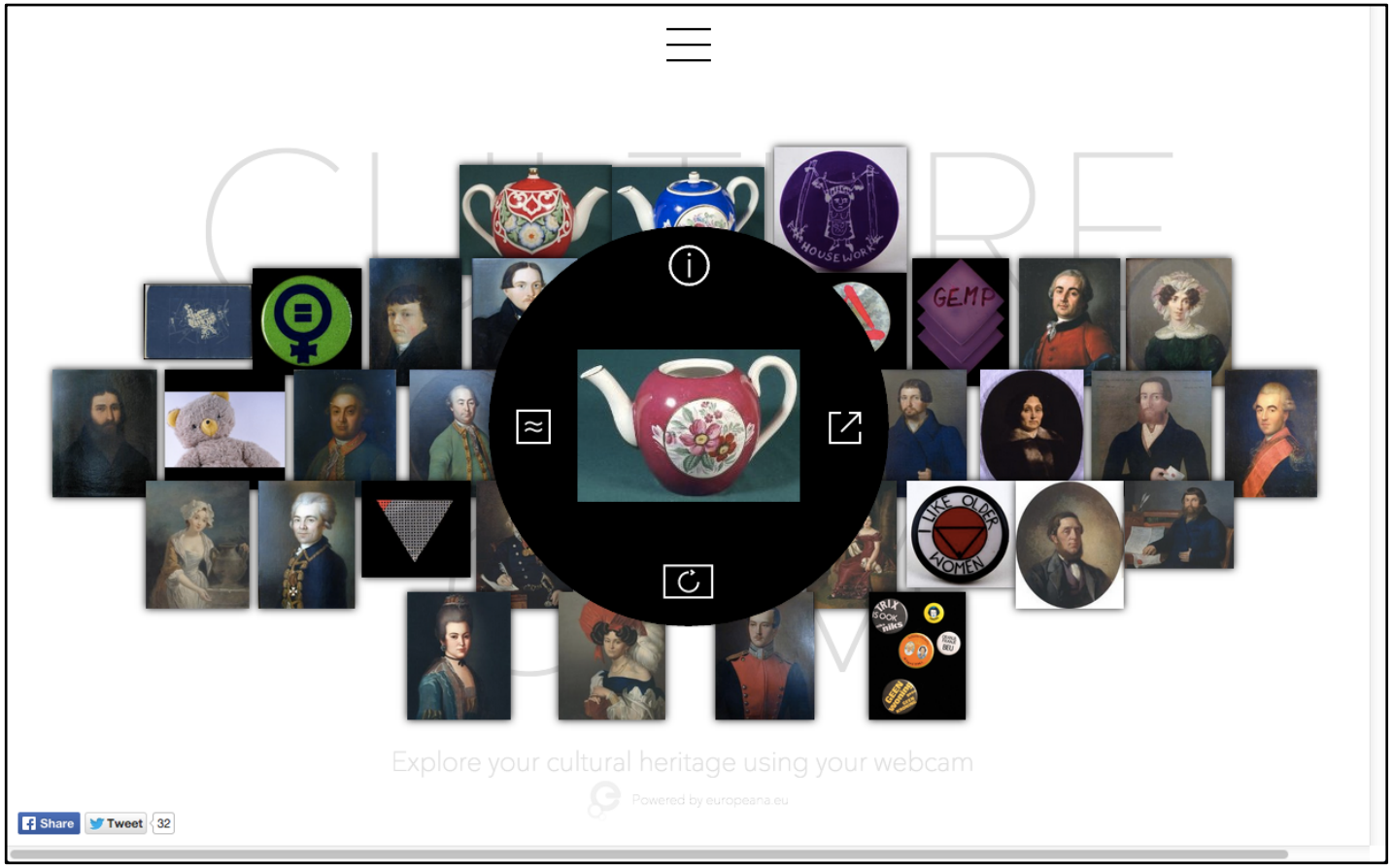
http://www.visualdataweb.org/relfinder/relfinder.php

USC Information Sciences Institute: *LOD Stories app*



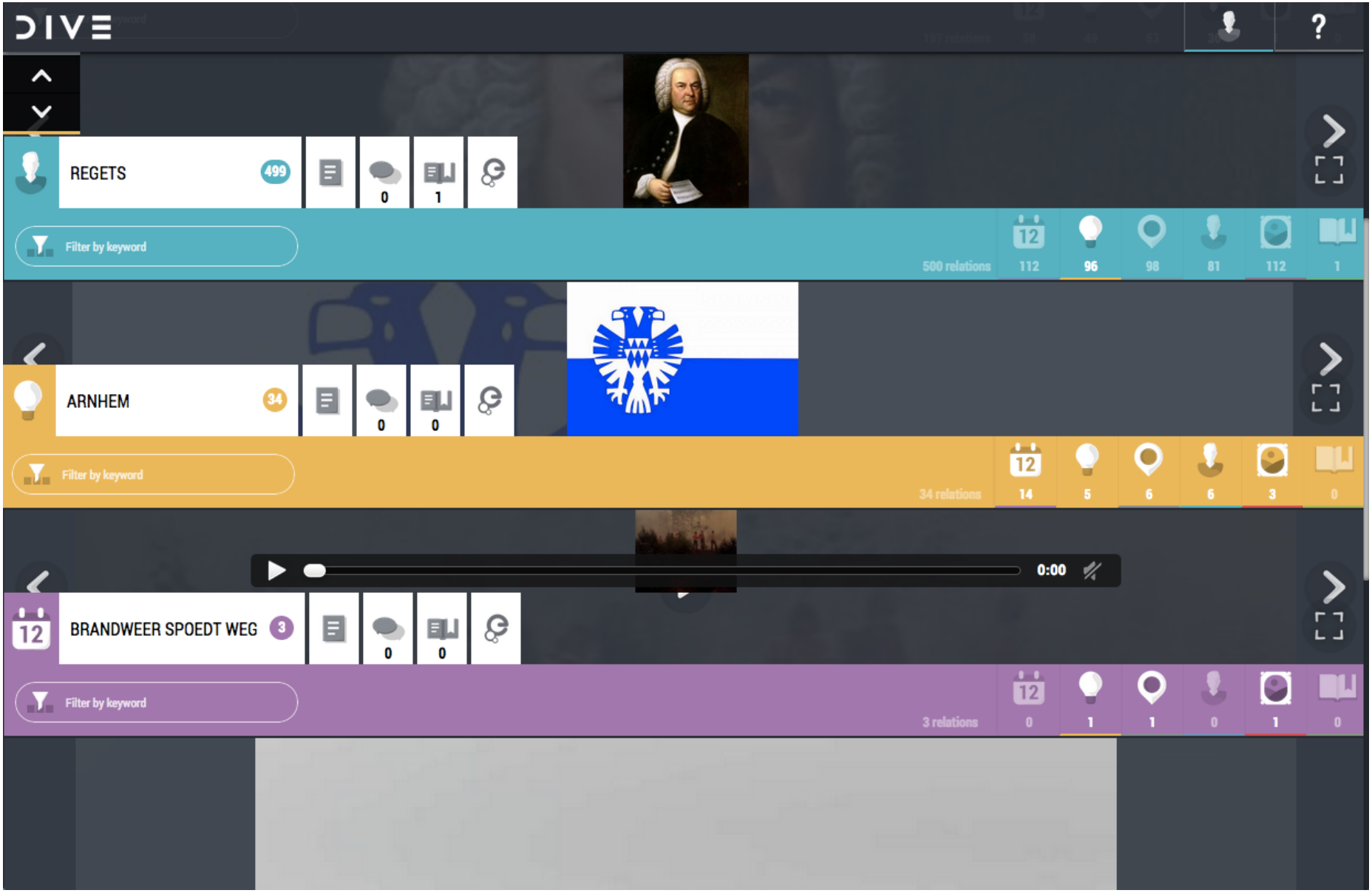
http://lodstories.isi.edu/LODStories/html/linkeddataeduapp.html

Culture Cam



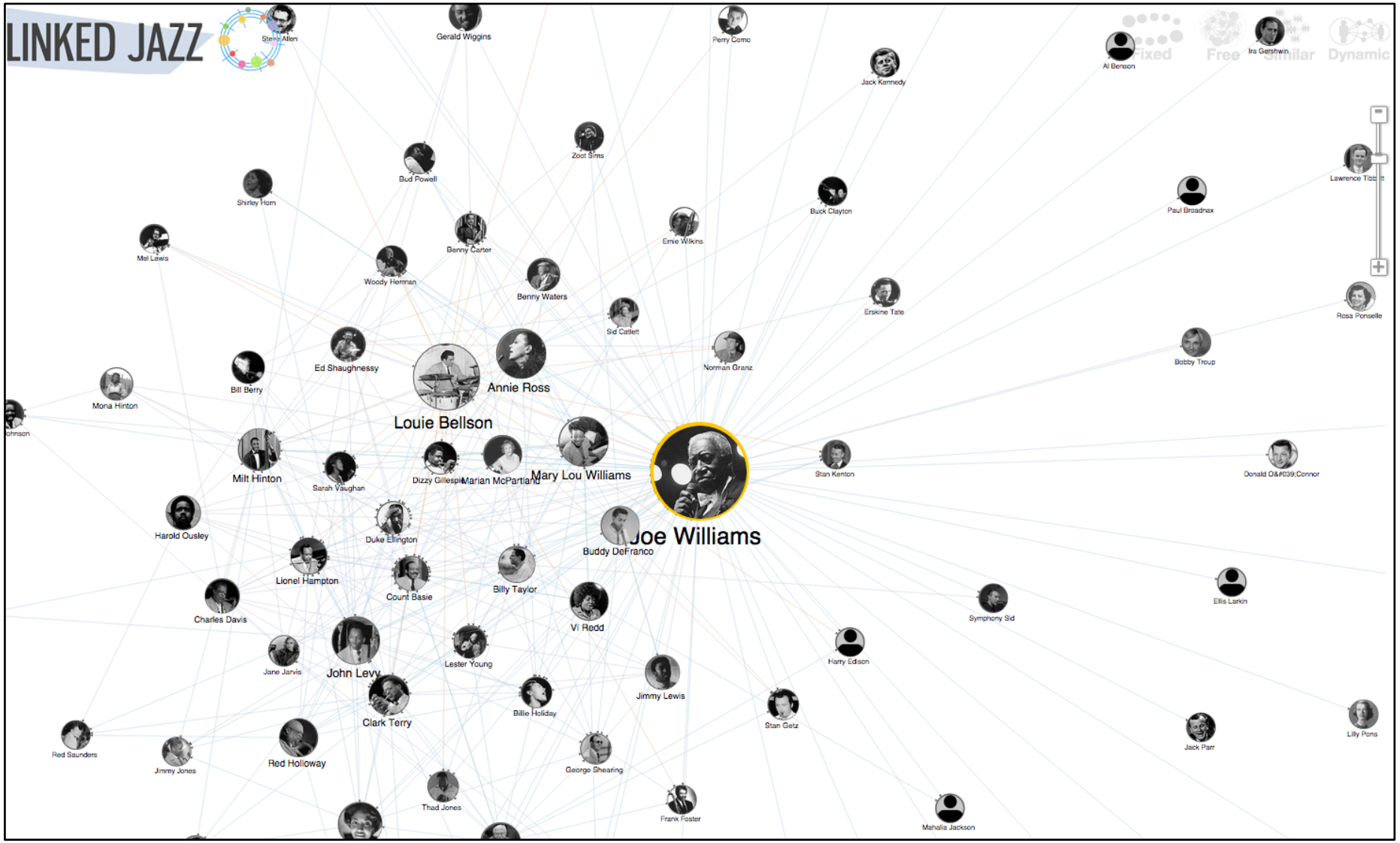
http://culturecam.eu/

DIVE



http://dive.beeldengeluid.nl/

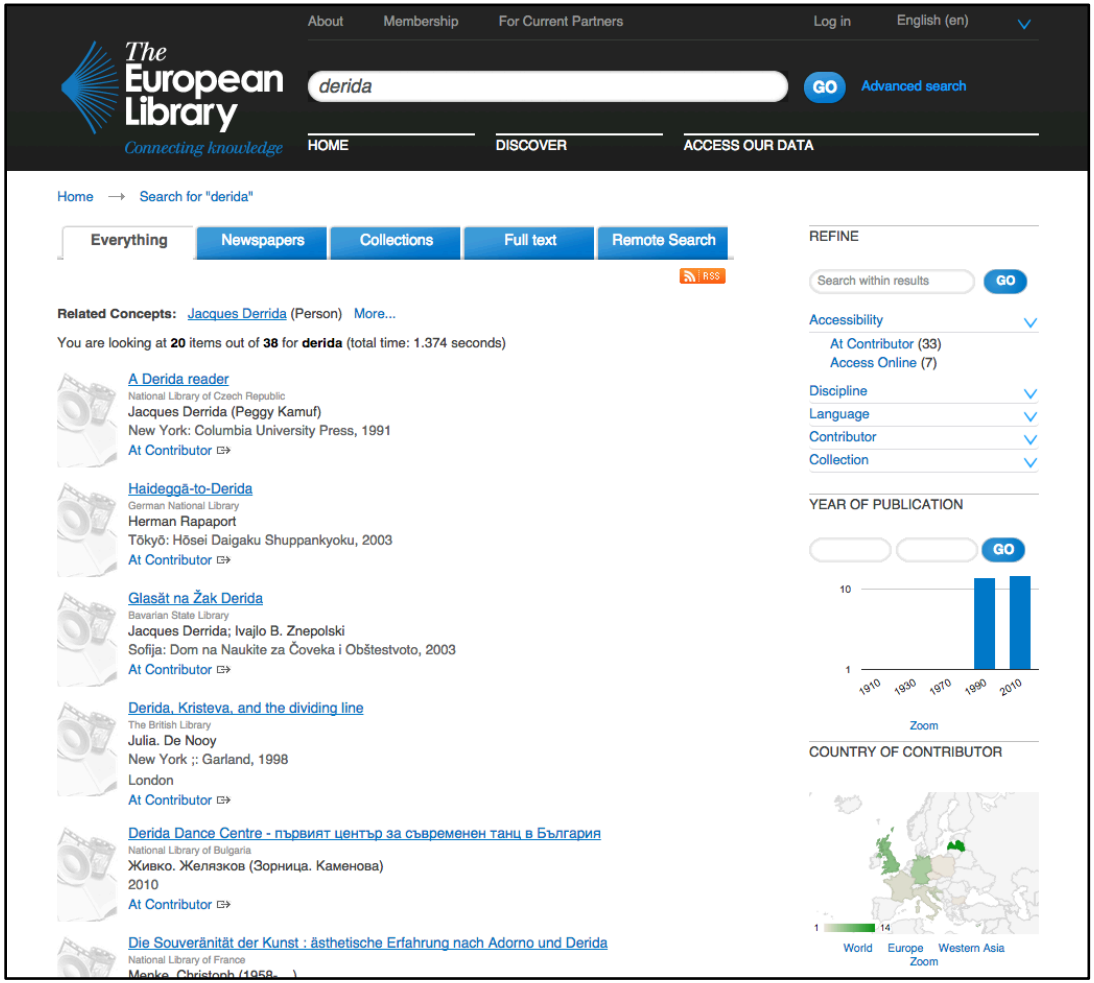
Network Visualization: *Linked Jazz*



https://linkedjazz.org/

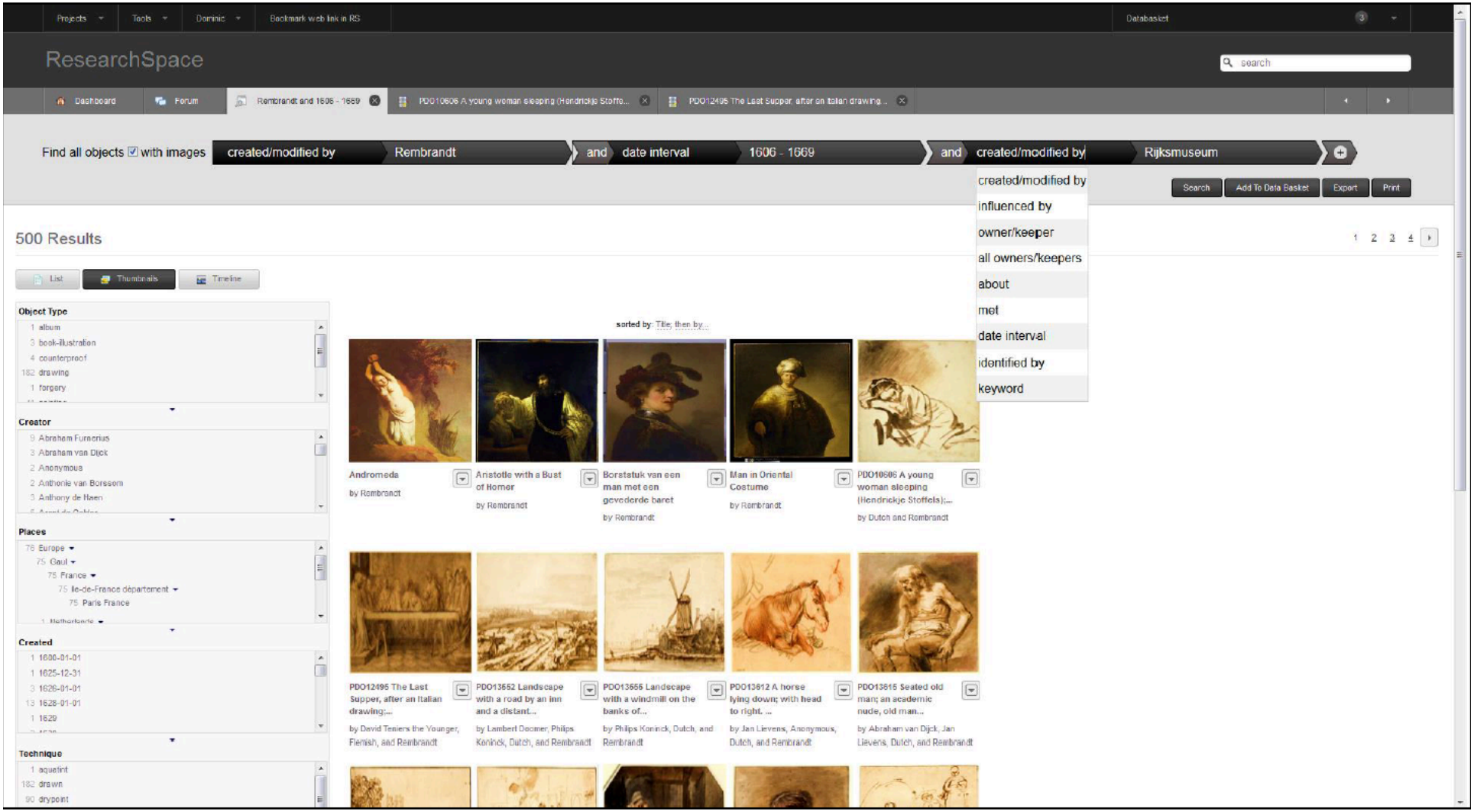
OCLC and The European Library

- LD-driven access to multiple sources, faceted search/browse, and more



https://www.oclc.org
http://www.theeuropeanlibrary.org/tel4/

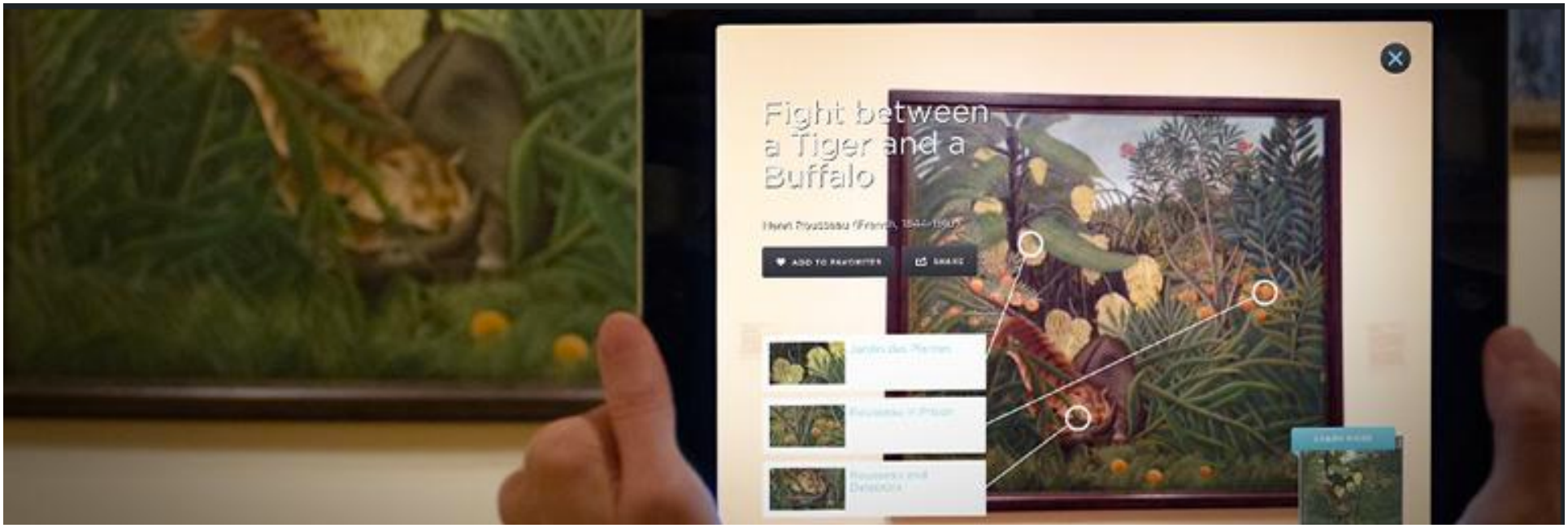
ResearchSpace



http://www.researchspace.org/

Personalization and Federation

Cleveland Museum of Art “Gallery One”



Users take their selections with them through the museum’s galleries

…but what if user selections were persistent and available to other applications?

Personalization and Federation

1

Phillips Collection

Anonymous 19th Century
American c. 1880

-Tropical Forest with Birds

National Gallery of Art

Rousseau, Henri
French 1844-1910

-Tropical Forest with Monkeys

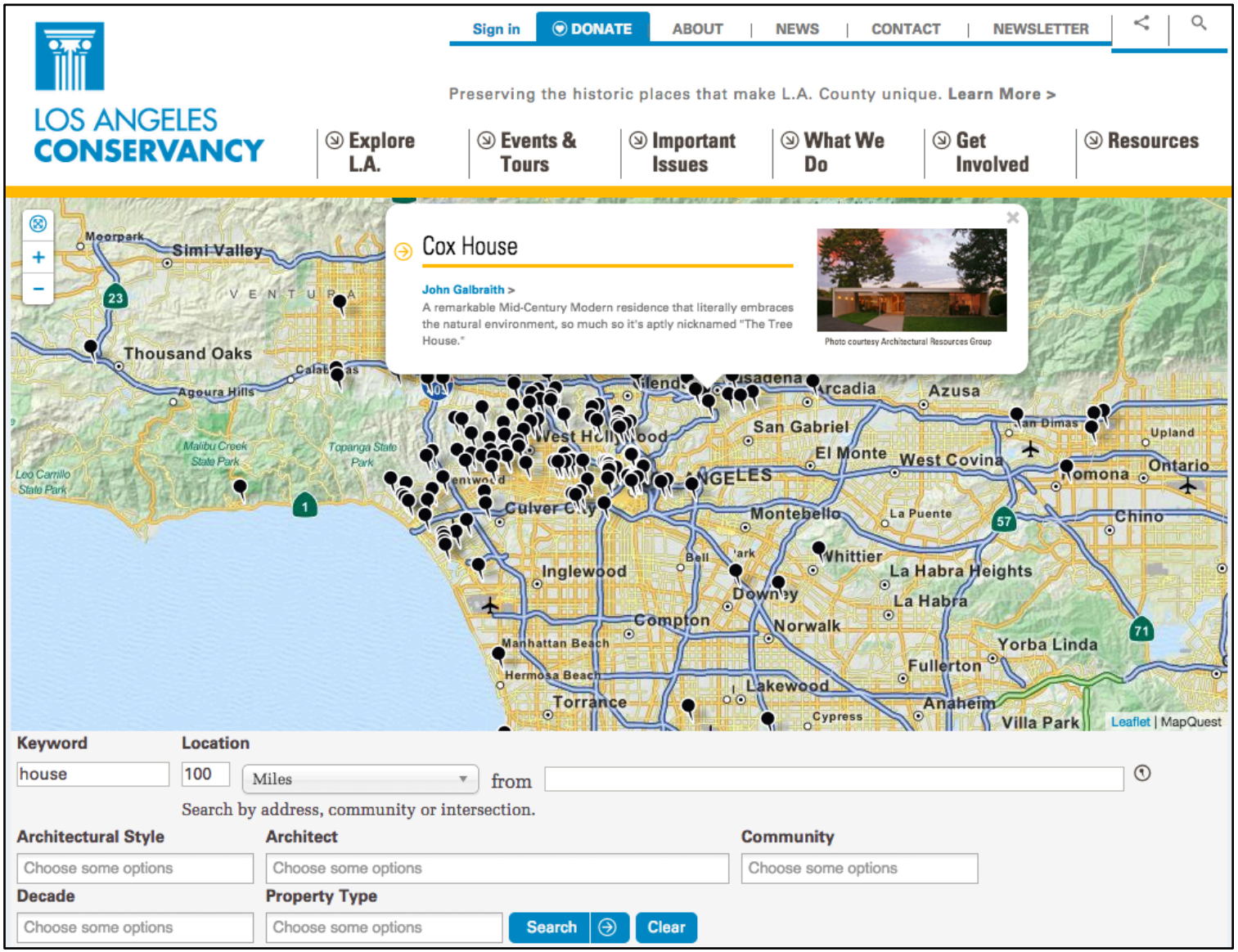
-The Equatorial Jungle

2

Personalization and Federation

National Gallery of Art
Architect: John Russell Pope
Built: 1936-1942

Historic Places LA (Arches Platform)



https://www.laconservancy.org/

VINCENT VAN GOGH
1853-1890

BIRTHPLACE:
ZUNDERT, NL

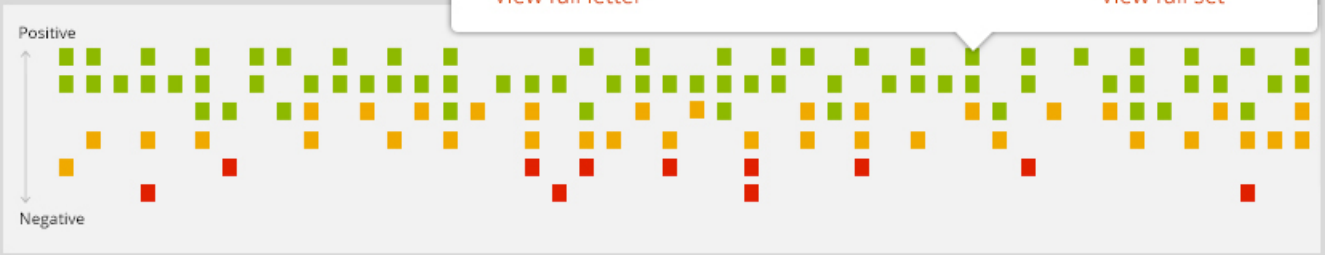
PLACES WORKED:
NUENE, ANTWERP, PARIS, ARLES, more...

Letters from the artist provide insight into his mood. A sentiment analysis on those letters identifies the frequency of positive and negative sentiments expressed by the artist over time.

Letter to Paul Gauguin
Arles, Wednesday, 17 October 1888

View full letter

View full set



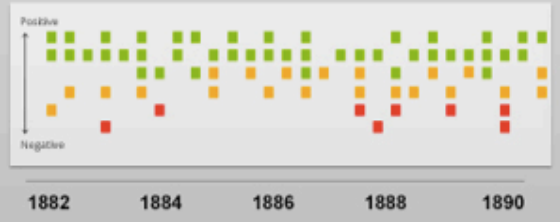
Type of work Location during creation

Did van Gogh
suffer from depression?

Measuring van Gogh's Mood

Bedroom in Arles
Vincent van Gogh
Painting, Oil on canvas
Arles: October, 1888

Sentiment analysis of Vincent's letters
challenges traditional thinking...

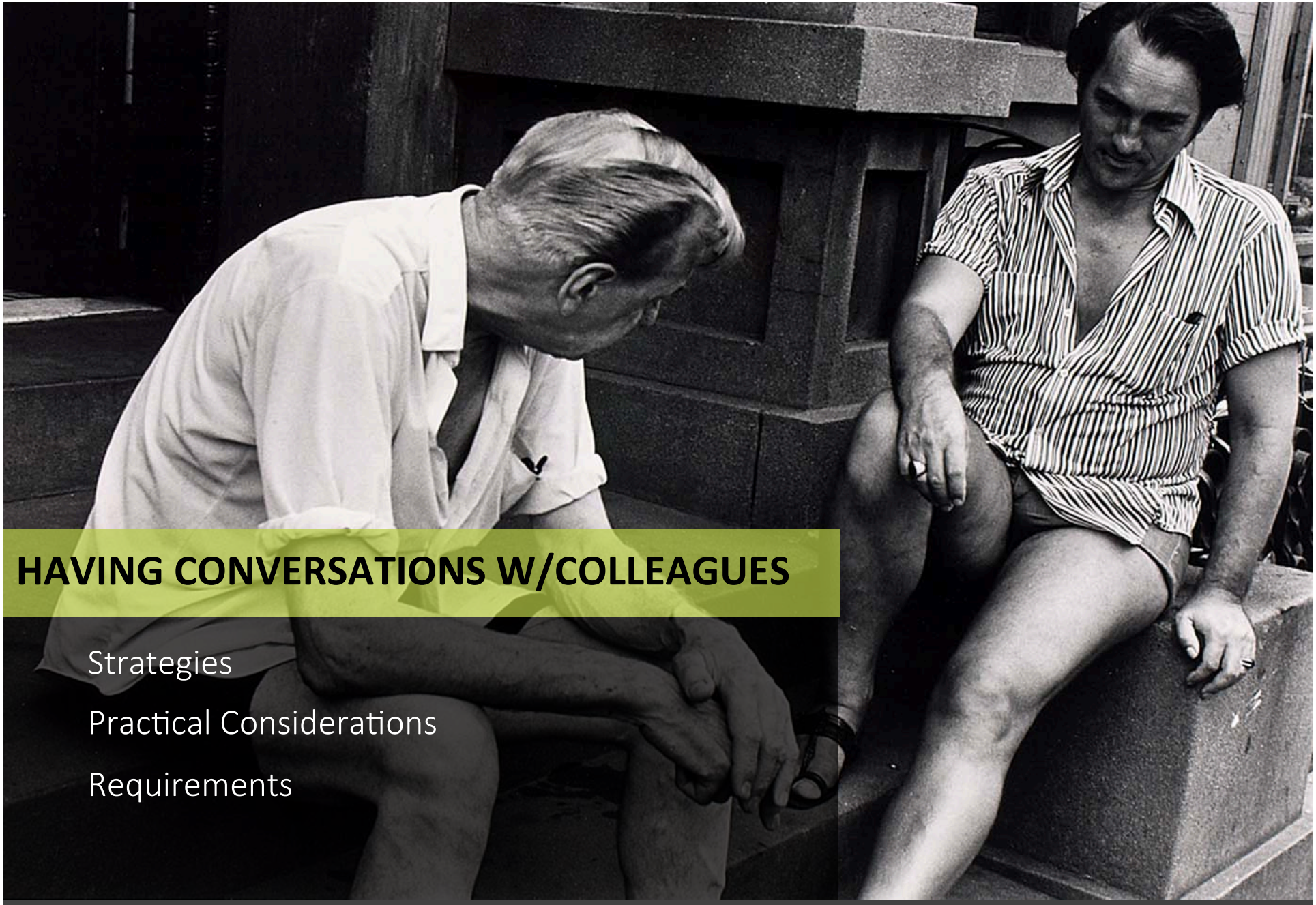


Explore van Gogh's moods

Who uses linked data effectively out in the world?

- ***Big Aggregators***
  - Google knowledge graph
  - Google Culture (emerging)
  - FB open graph for embedding
  - IBM Watson
- ***Companies***
  - BBC
  - Disney
  - NBC SNL
  - Best Buy
  - Nature
- ***Open Data Repositories***
  - DBpedia
  - Freebase
  - Wikidata
  - Open Street Map
  - Data.gov, data.gov.uk, etc.
- ***Cultural Heritage***
  - Europeana
  - Various Dutch Institutions
  - Yale Center for British Art
  - Mellon ConservationSpace & ResearchSpace
  - European Libraries
  - IIIF
  - HistoricPlaces LA (Arches)
  - Kultursampo
- ***Vocabularies***
  - Getty
  - Library of Congress Subject Headings (LCSH)
  - OCLC
  - GeoData

Not a complete list!



HAVING CONVERSATIONS W/COLLEAGUES

Strategies

Practical Considerations

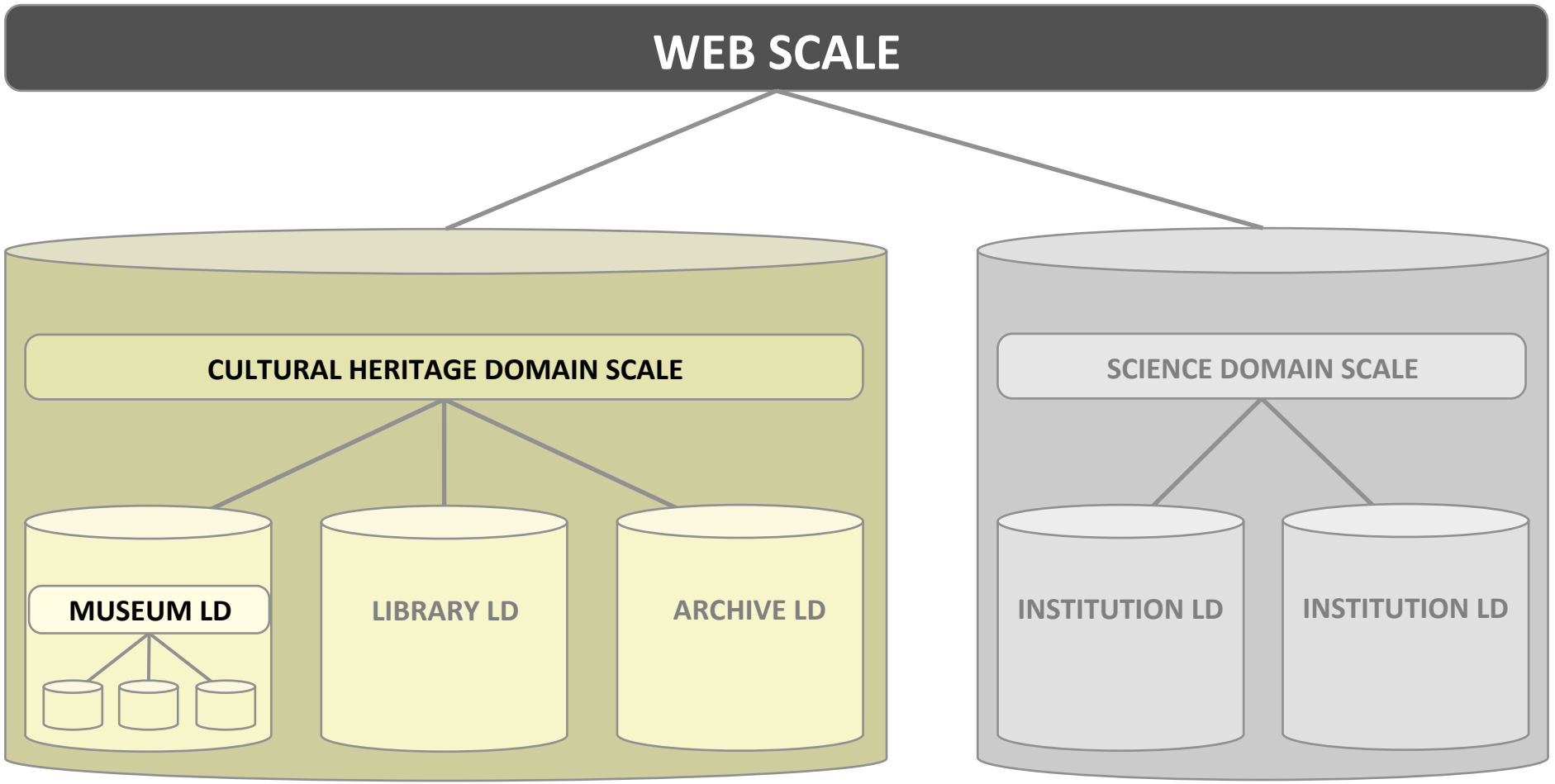
Requirements

William Suttle, "Untitled", 1938, Smithsonian American Art Museum http://americanart.si.edu/collections/search/artwork/?id=23561

HAVING CONVERSATIONS W/COLLEAGUES

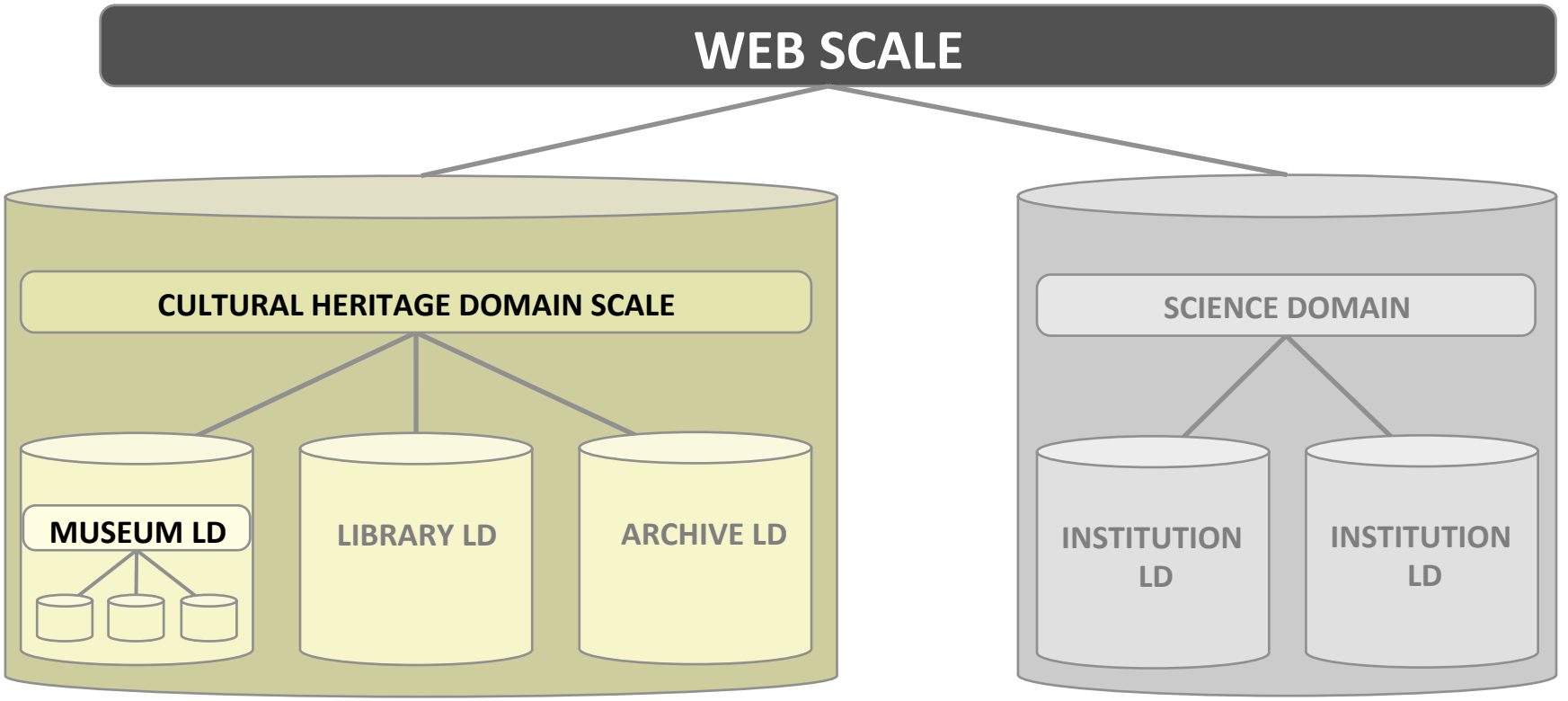
- Institutional strategies
  - Levels of influence and effect

Levels of influence and effect:
Gaining experience AND exposure



Quick survey…

- What are your aspirations at this moment?
- What level of potential for LD do you see in your institutions in the near term? Long term?



HAVING CONVERSATIONS W/COLLEAGUES

- Institutional strategies
  - Levels of potential influence and effect
  - The Holy Grail: *5-star linked (open) data…and ease of integration*

Achieving 5-Star Linked (Open) Data

★ **1-star:** make stuff available on the Web (any format) under open license

★★ **2-star:** make it available as structured data (e.g., Excel)

★★★ **3-star:** use non-proprietary formats (e.g., CSV instead of Excel)

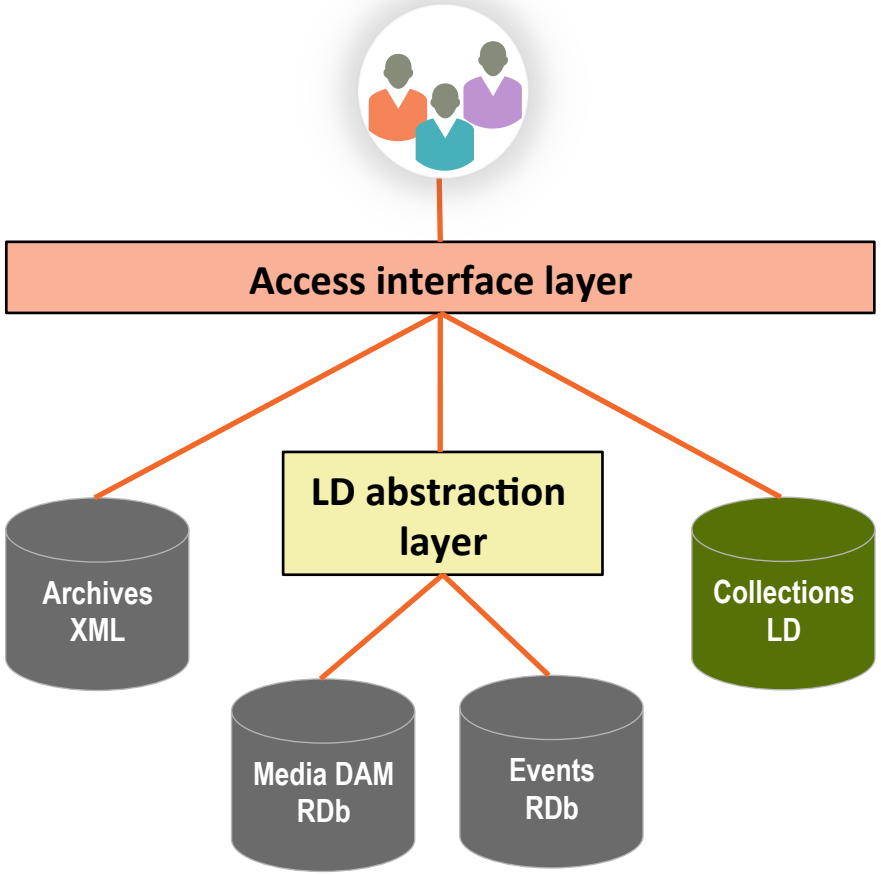
★★★★ **4-star:** use URIs to denote things, so people can point at your stuff

★★★★★ **5-star:** link your data to other data to provide context

Achieving 5-Star Linked (Open) Data

- You can achieve 5 stars incrementally…but keep your eyes on the prize!
- There's some value in achieving only 1–3 stars
- You can target your star goals uniquely for each content type depending on:
  - Complexity (e.g., structured vs. semi-/unstructured)
  - Resource availability
    - Internal
    - 3rd party linked data resources to be linked to/from
  - Program requirements

Linked Data can be *flexibly* adopted and integrated

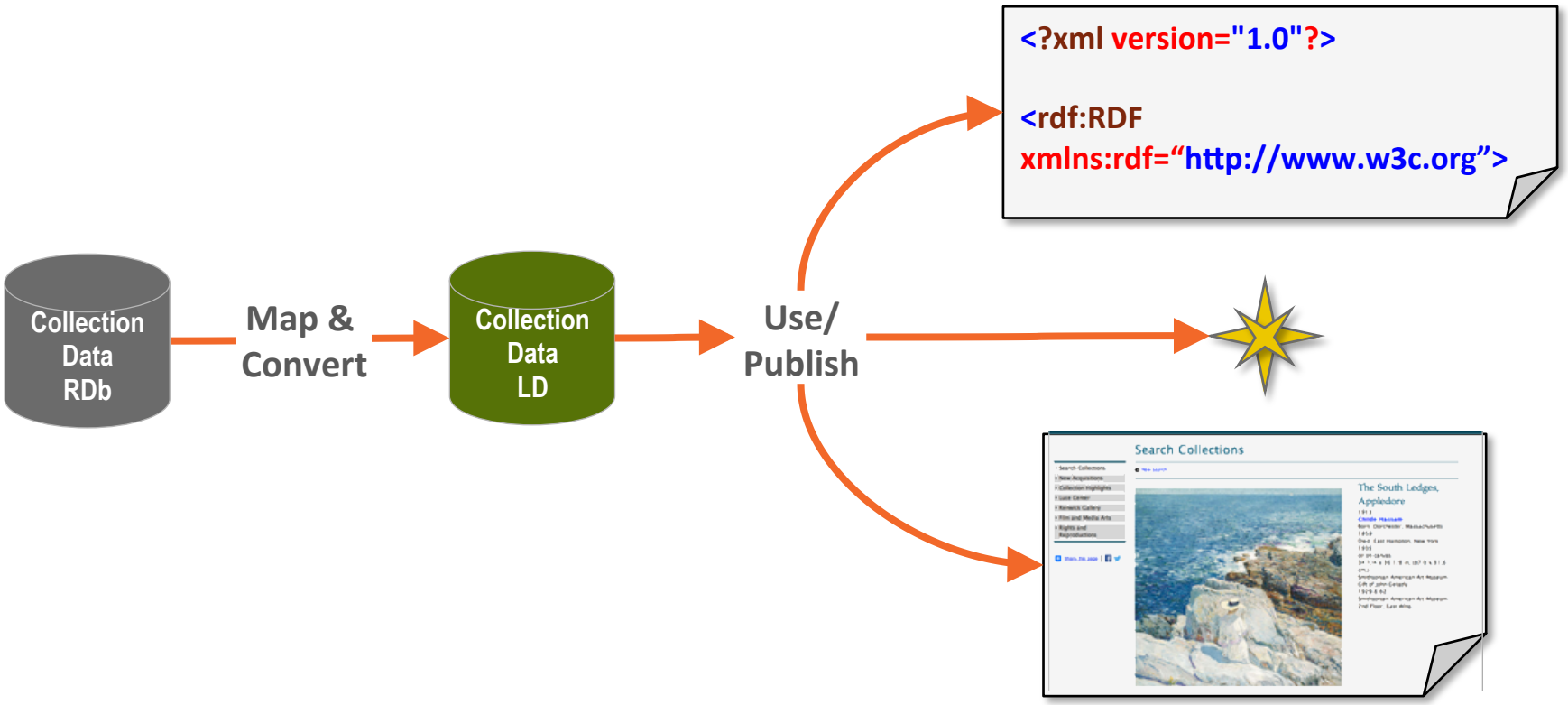


HAVING CONVERSATIONS W/COLLEAGUES

- Institutional strategies
  - Levels of potential influence and effect
  - The Holy Grail: *5-star linked (open) data*
  - Inclusion of a range of data sources

Most start with structured collection data/media

- Mapping & converting
- Publishing
- Maintaining



How broad a range of data is useful and feasible?

- Tombstone and broader collections data
- Other semi-structured and unstructured data
  - *Provenance*
  - *Constituents*
  - *Exhibitions*
  - *Conservation*
  - *Research files*
  - *Video, audio*
  - *Interviews*
  - *Manuscripts*

What else?

Benefits for sourcing data of all types

- *Break down silos*
  - Simplified access across data collections
  - Visibility into the sum total of "meaning" you've created
- *Enable structural consistency*
  - Ease of construction and inspection when creating or updating the data
  - Conform to industry standards
  - Ease of reuse in publishing
- *Normalize entities (people, organizations, etc.) and dates*
  - Standardize vocabularies across your data contains entities
  - Use dates in calculations, information visualization
- *Add depth to your LD holdings*
  - More resources you can search across and publish to the world

Supplementing technologies

- Enhancing data
  - Annotation
  - Inferencing and semantic search engines
- Converting unstructured data to structured data
  - Natural language processing and text parsers
  - Artificial intelligence, machine learning and automated analysis
  - Entity and concept extraction to support vocabulary enhancement

Supplementing technologies

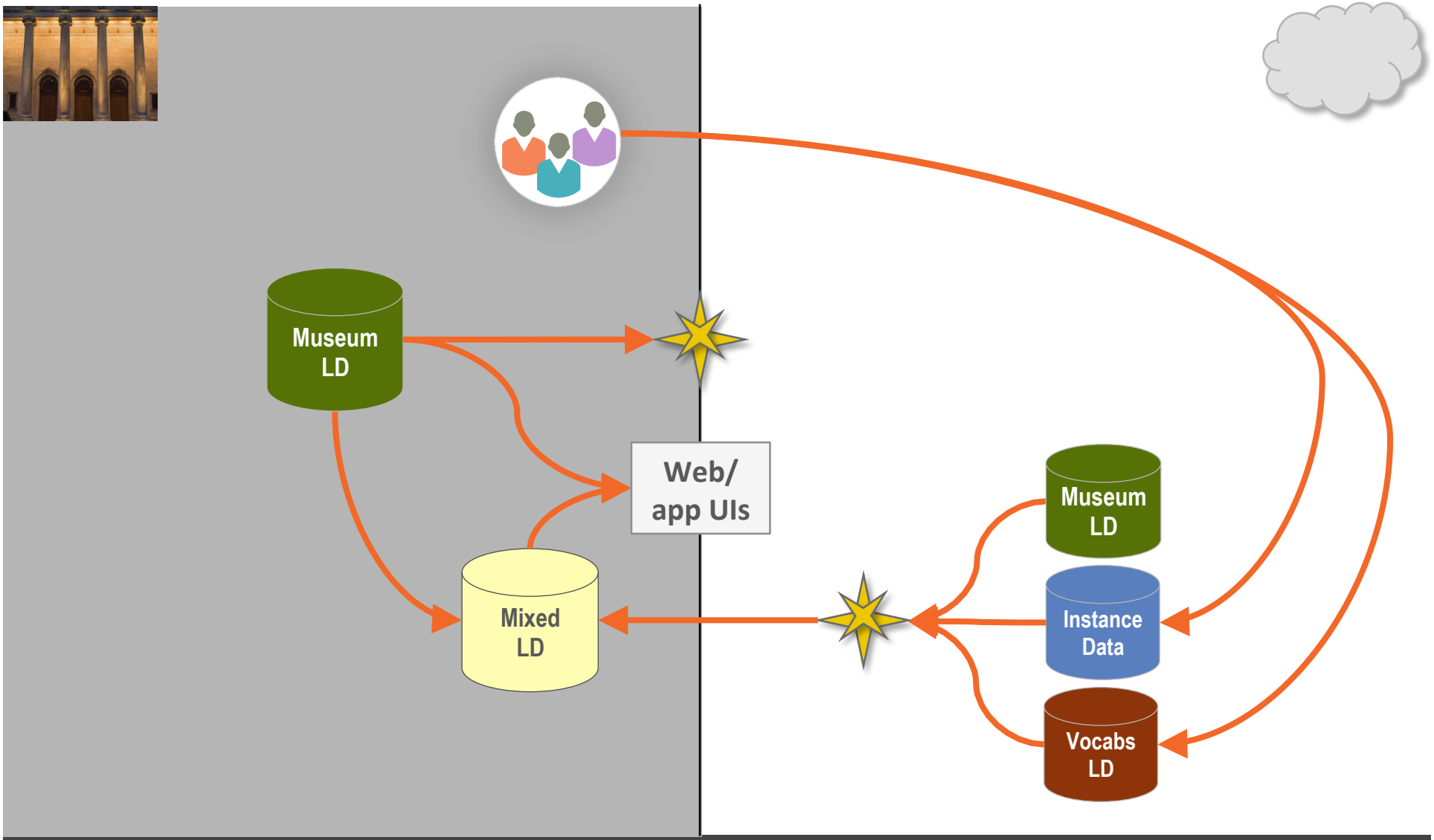
- Managing
  - Content management
  - Content presentation
  - Persistent URL formats and management services
  - Image management and addressing
  - Terminology management and shared vocabularies/libraries
- Visualizing data
  - Information visualization
  - Interface and application frameworks

HAVING CONVERSATIONS W/COLLEAGUES

- Institutional strategies
  - Levels of potential influence and effect
  - The Holy Grail: *5-star linked (open) data*
  - Inclusion of a range of data sources
  - Institutional role in LD production, consumption, collaboration

Roles to play in the LD community

Producer – Consumer – Collaborator



HAVING CONVERSATIONS W/COLLEAGUES

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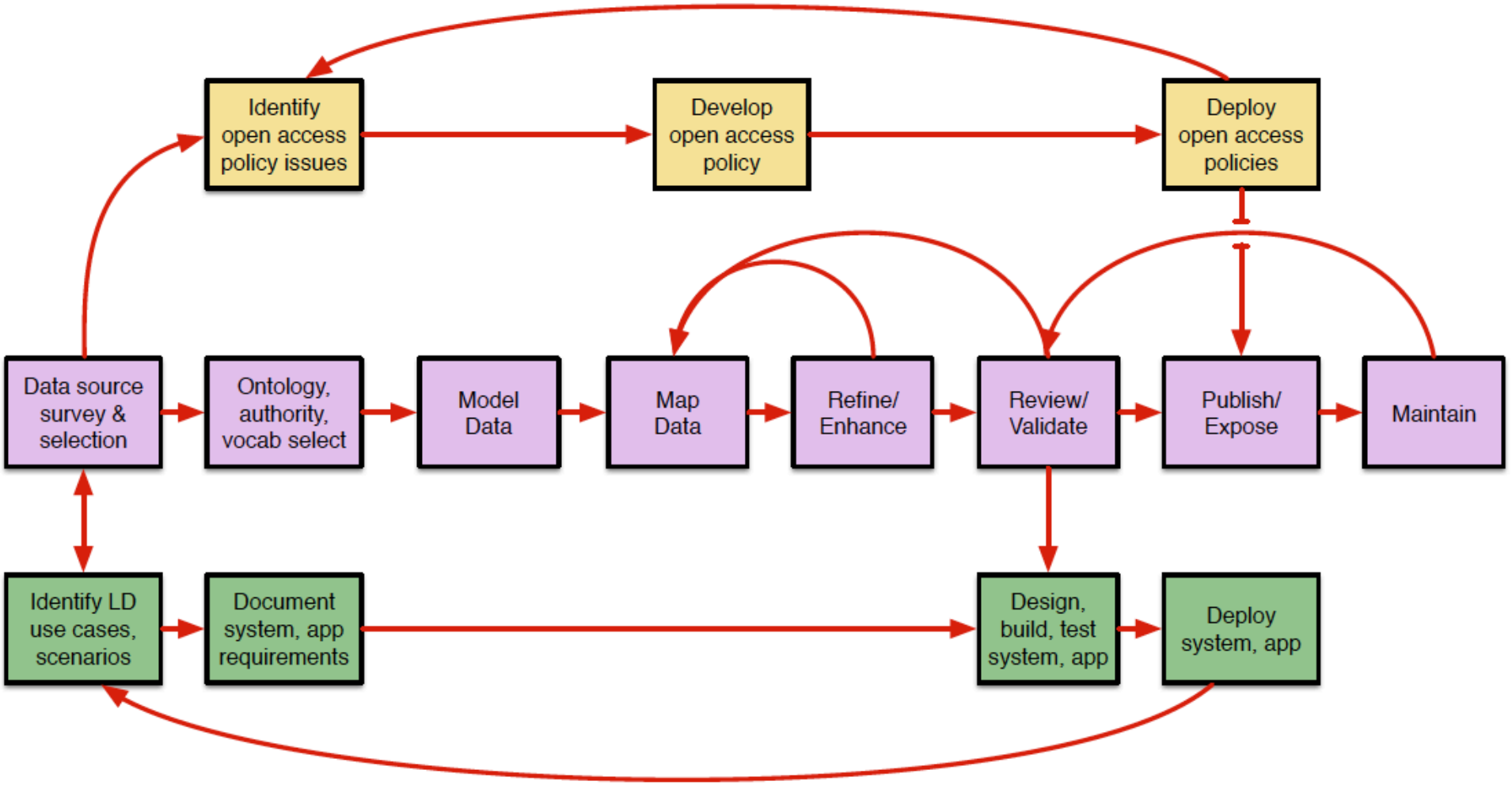
  - LD Lifecycle: *A process, not a project*

Linked Data Lifecycle



HAVING CONVERSATIONS W/COLLEAGUES

- Institutional strategies
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  - Institutional role in LD production, consumption, collaboration
  - LD Lifecycle: *A process, not a project*
  - LD design and implementation requirements

LD design and implementation requirements

- **Discovery & Serendipity**
  - Discover relevant information objects – known and unknown – through search/browse (and foster that serendipitous, "A-ha!" moment)
- **Extend use**
  - Take away information objects relevant to my interest
  - Conveniently re-use information in my own work products
- **Persistence**
  - Conveniently link/reference my work and source information objects
  - Trust that information objects to which I link/reference will remain available
- **Sustainability**
  - Flexibility in design and data modeling to adapt to future capabilities and topics
- **Scalability**
  - Comfortably adapt to ever-growing collections and different working styles across institutions

HAVING CONVERSATIONS W/COLLEAGUES

- Institutional strategies
  - Levels of potential influence and effect
  - The Holy Grail: *5-star linked (open) data*
  - Inclusion of a range of data sources
  - Institutional role in LD production, consumption, collaboration
  - LD Lifecycle: *A process, not a project*
  - LD design and implementation requirements

Exercise

- Jot down basic ideas for a programmatic use of linked data in your own institution.
  - Presume no constraints… you have all the data, money, personnel, and time you need
  - Don't over elaborate or get hung up on question of medium/platform
  - Focus on one of: Internal, partnership/public program, blue sky
  - What data would be required?
  - What problems would it solve?
- Get into groups and share your ideas. The group discusses and enriches the idea.

HAVING CONVERSATIONS W/MANAGEMENT

Reliability

Efficiency

Legacy

Reach

Bartholomeus van der Helst, *The Governors of the Kloveniersdoelen*, Amsterdam Museum http://www.amsterdammuseum.nl/

HAVING CONVERSATIONS W/MANAGEMENT

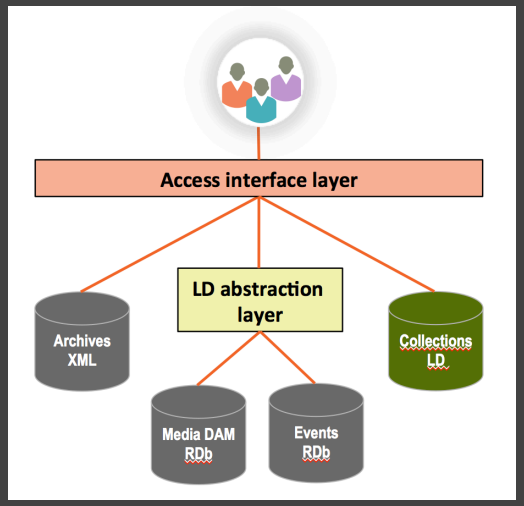
- Maturity, flexibility, and a critical mass of participants
  - A next-generation data standard

HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
  - A next-generation data standard
  - An active, world-spanning community

HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
  - A next-generation data standard
  - An active, world-spanning community
  - Flexibility in adoption, integration, change management



HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
- Do more with your content
  - Eliminate silos
  - Avoid one-off single-use content and applications, encourage re-use
  - Manage content more effectively
  - Improve analytical capability

HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
- Do more with your content
- Enhance the museum experience
  - Increase discoverability and serendipity (e.g., enhance scholarship)
  - Push the boundaries on interaction
  - Serve existing audiences better and attract new ones
  - Bridge the physical and digital realms

HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
- Do more with your content
- Enhance the museum experience
- A pioneering opportunity
  - Demonstrate leadership, define a legacy
  - Exercise a spirit of adventure and discovery

HAVING CONVERSATIONS W/MANAGEMENT

- Maturity, flexibility, and a critical mass of participants
- Do more with your content
- Enhance the museum experience
- A pioneering opportunity
- Increase your reach
  - The promise and challenge of “openness”
  - Visibility and authority in your community and at web scale
  - Enhance and extend institutional relationships

INSTITUTION

INFORMATION PARTNERSHIPS

CULTURAL ECOSYSTEM

Create

Effectively manage and use your data

Extend

Share data seamlessly among partners

Enrich

Integrate with broader humanities and societal data

The value propositions for linked data

- **Maturity, flexibility, and a critical mass of participants**
  - A next-generation data standard
  - An active, world-spanning community
  - Flexibility in adoption, integration, change management
- **Do more with your content**
  - Eliminate silos
  - Avoid one-off single-use content and applications
  - Manage content more effectively
  - Improve analytical capability
- **Enhance the museum experience**
  - Increase discoverability and serendipity
  - Push the boundaries on interaction
  - Serve existing audiences better, attract new ones
  - Bridge the physical and digital realms
- **A pioneering opportunity**
  - Demonstrate leadership, define a legacy
  - Exercise a spirit of adventure and discovery
- **Increase your reach**
  - The promise and challenge of “openness”
  - Visibility and authority in your community and at web scale
  - Enhance/extend institutional partnerships

LET'S GET TO WORK!

Please fill out your evaluations

Please contact us with questions

Workshop resources will be made available online

Pierre Puvis de Chavannes, "Work", c 1863, National Gallery of Art http://www.nga.gov/content/ngaweb/Collection/art-object-page.1194.html

How, When, and Why to use Linked Data

Starting and Sustaining an Institutional Conversation

Museums and the Web: 8 April 2015

Design for **Context**

Making software applications and web sites easy to use

www.designforcontext.com

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