LOUD: Linked Open Usable Data & linked.art

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2018 CIDOC Conference, October 3, 2018
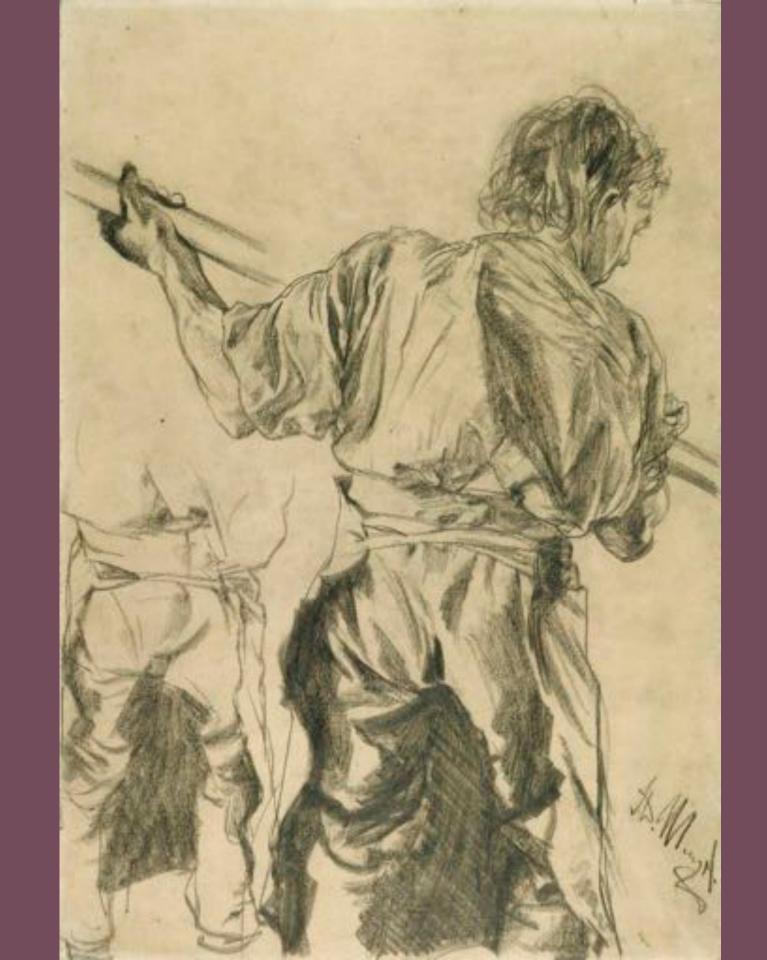
Why digital metadata?

Who are our users?

What do they *want*?

Adolf von Menzel (German, 1815 - 1905)
Figure Studies, 1872, Carpenter's pencil
The J. Paul Getty Museum, Los Angeles

Three user types:

- Cataloguers describing collections

- Researchers using digital methods

- Developers enabling access

Workshop of Rembrandt Harmensz. van Rijn
Young Scholar and his Tutor, 1629–1630, Oil on canvas
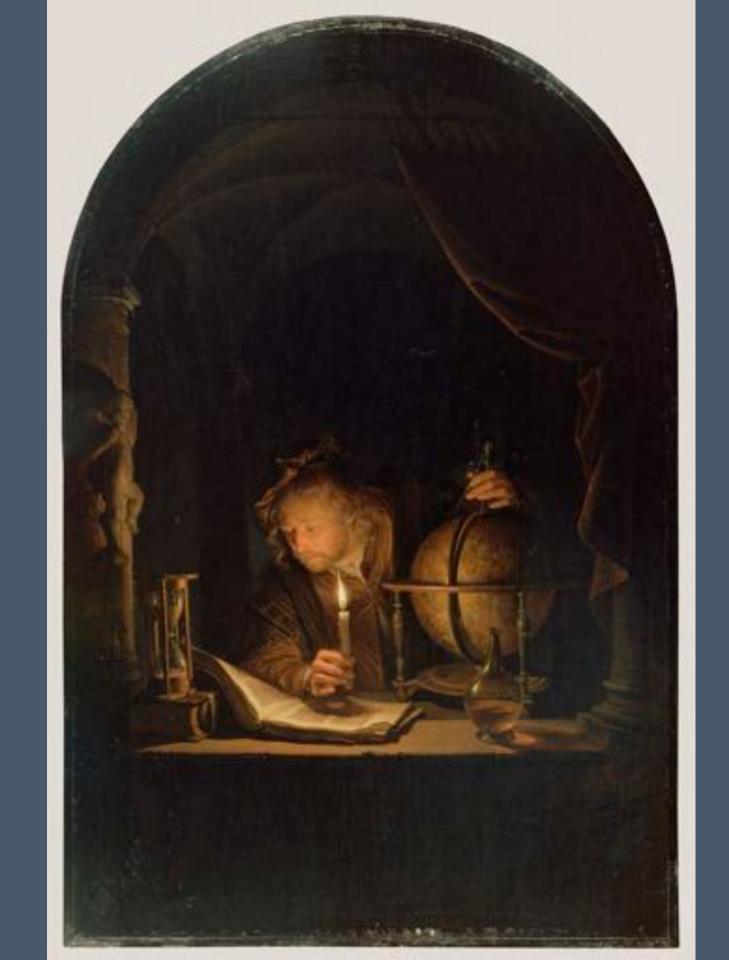*The J. Paul Getty Museum, Los Angeles*

— Catalogers interpret and structure the **real world**.

— Researchers ask **novel questions** using the dataset.

— Developers **consume data** and enable users.

These use cases are in conflict.

How do we provide semantic data to lazy developers?

Gerrit Dou (Dutch, 1613 - 1675)
Astronomer by Candlelight, late 1650s, Oil on panel
The J. Paul Getty Museum, Los Angeles

The CIDOC-CRM is write-only.

```
<?xml version="1.0"?>
<rdf:RDF
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:foaf="http://xmlns.com/foaf/0.1/"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
    xmlns:j.0="http://erlangen-crm.org/current/"
    xmlns:j.1="http://collection.britishmuseum.org/id/ontology/">
  <j.0:E22_Man-Made_Object rdf:about="http://collection.britishart.yale.edu/id/object/499">
    <j.1:PX_display_wrap>Subject Concept :: Bible</j.1:PX_display_wrap>
    <j.0:P138i_has_representation rdf:resource="http://scale.ydc2.yale.edu/iiif/ea66759c-d381-4bee-8a6b-8333c8506886"/>
    <j.0:P62_depicts rdf:resource="http://collection.britishart.yale.edu/id/thesauri/subject/bible"/>
    <j.1:PX_display_wrap>Subject Concept :: bishop (prelate)</j.1:PX_display_wrap>
    <j.0:P48_has_preferred_identifier rdf:resource="http://collection.britishart.yale.edu/id/object/499/inventory-number"/>
    <j.1:PX_display_wrap>Subject Concept :: scrap ... artifact</j.1:PX_display_wrap>
    <j.0:P62_depicts rdf:resource="http://collection.britishart.yale.edu/id/thesauri/subject/key"/>
    <j.0:P62_depicts rdf:resource="http://..."/>
    <j.1:PX_display_wrap>Subject Concept :: blood (animal material)</j.1:PX_display_wrap>
    <j.0:P138i_has_representation rdf:resource="http://deliver.odai.yale.edu/content/id/26b6447b-f2cc-4946-bf..-928220496dab/format/3"/>
    <j.0:P55_has_current_location rdf:resource="http://collection.britishart.yale.edu/id/object/499"/>
    <j.1:PX_display_wrap>Subject Concept :: New Testament</j.1:PX_display_wrap>
    <j.0:P1_is_identified_by rdf:resource="http://collection.britishart.yale.edu/id/object/499"/>
    <j.0:P62_depicts rdf:resource="http://vocab.getty.edu/aat/300189568"/>
    <j.1:PX_display_wrap>Subject Concept :: religious and mythological subject</j.1:PX_display_wrap>
    <j.0:P62_depicts rdf:resource="http://vocab.getty.edu/aat/300216741"/>
    <j.0:P138i_has_representation rdf:resource="http://scale.ydc2.yale.edu/iiif/2ddbdeb2-bae2-4230-9855-c4449b099674"/>
    <j.1:PX_display_wrap>Subject Concept :: nude</j.1:PX_display_wrap>
    <j.0:P67_refers_to rdf:resource="http://collection.britishart.yale.edu/id/getty/tgn/7008171"/>
    <j.0:P1_is_identified_by rdf:resource="http://collection.britishart.yale.edu/id/object/499/inventory-number"/>
    <j.0:P45_consists_of rdf:resource="http://vocab.getty.edu/aat/300014078"/>
    <j.0:P50_has_current_keeper rdf:resource="http://collection.britishart.yale.edu/id/thesauri/department"/>
    <j.1:PX_has_credit_line>Yale Center for British Art, Paul Mellon Fund</j.1:PX_has_credit_line>
    <j.0:P138i_has_representation rdf:resource="http://deliver.odai.yale.edu/content/id/ea66759c-d381-4bee-8a6b-8333c8506886/format/3"/>
    <j.0:P62_depicts rdf:resource="http://collection.britishart.yale.edu/id/thesauri/subject/pity"/>
```

You need to try to use the data.

— Consistent modeling patterns are needed

— Semantic correctness is **not** sufficient

— Structure is as important as semantics

Lessons Learned

— Our tasks are Search, Browse, & Display

— There is no primary entity
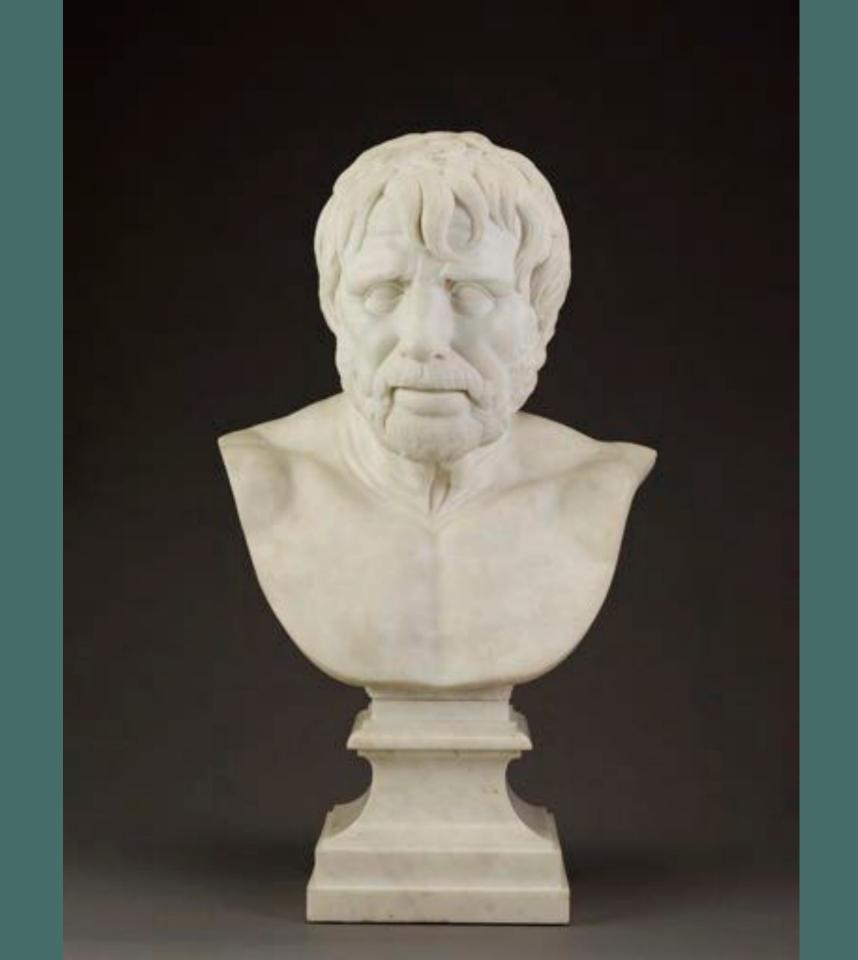
— Reconciliation is essential

http://linked.art

Linked.art is a RDF profile of the CIDOC-CRM that uses JSON-LD and the Getty Vocabularies to describe object-based cultural heritage in an event-based framework for consumption by software applications.

It uses a subset of classes from the CIDOC-CRM along with other commonly-used RDF ontologies to provide interoperable patterns and models that can be interpreted either as JSON or as RDF.

LOUD:
Linked Open Usable Data

Semanatically modeled
cultural heritage data
for web developers.

Joseph Wilton (English, 1722 - 1803)
Bust of Pseudo-Seneca (after the antique)
1755 - 1765, Marble
The J. Paul Getty Museum, Los Angeles

Balancing complexity and usability

RDF Graphs as
JSON-LD documents.

Complexity is hidden,
not eliminated.

VS.

```
{
    "@context": "https://linked.art/ns/v1/linked-art.json",
    "id": "https://linked.art/example/object/45",
    "type": "ManMadeObject",
    "label": "Simple Example Painting",
    "classified_as": [
        {"id": "aat:300033618","type": "Type","label": "Painting"},
        {"id": "aat:300133025","type": "Type","label": "Artwork"}
    ]
}
```

```
<http://vocab.getty.edu/aat/300033618>
    <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
    <http://www.cidoc-crm.org/cidoc-crm/E55_Type> .
<http://vocab.getty.edu/aat/300033618>
    <http://www.w3.org/2000/01/rdf-schema#label> "Painting" .
<http://vocab.getty.edu/aat/300133025>
    <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
    <http://www.cidoc-crm.org/cidoc-crm/E55_Type> .
<http://vocab.getty.edu/aat/300133025>
    <http://www.w3.org/2000/01/rdf-schema#label> "Artwork" .
<https://linked.art/example/object/45>
    <http://www.cidoc-crm.org/cidoc-crm/P2_has_type>
    <http://vocab.getty.edu/aat/300033618> .
<https://linked.art/example/object/45>
    <http://www.cidoc-crm.org/cidoc-crm/P2_has_type>
    <http://vocab.getty.edu/aat/300133025> .
<https://linked.art/example/object/45>
    <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
    <http://www.cidoc-crm.org/cidoc-crm/E22_Man-Made_Object> .
<https://linked.art/example/object/45>
    <http://www.w3.org/2000/01/rdf-schema#label> "Simple Example Painting" .
```

Four Patterns

Class Specificity and Classifications

Strings, Things,
and Linguistic Objects

Partitioning and Membership

Conceptual Groupings

Three Problems

The Problem of Complexity

Making complex
models simple.

Friedrich Winter (Polish (Silesian)
Covered Goblet, about 1691 - 1694
Colorless glass with wheel-engraved decoration
The J. Paul Getty Museum, Los Angeles

The Problem of Context
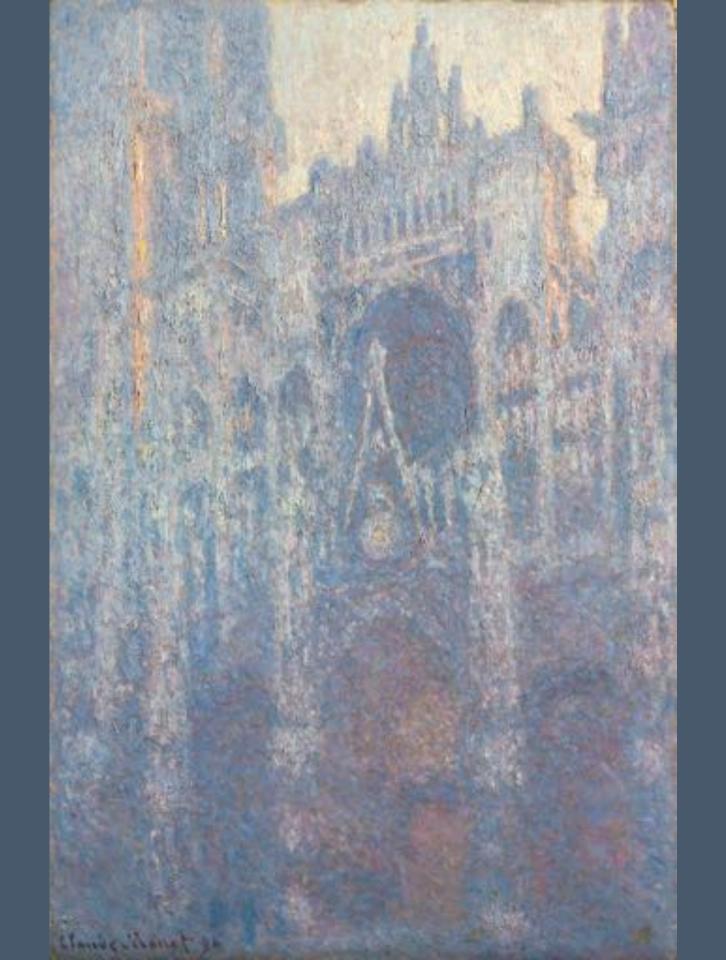
Querying data with a point of view.

Albrecht Dürer (German, 1471 - 1528)
Stag Beetle, 1505, Watercolor and gouache;
upper left corner of paper added, with tip of left antenna
painted in by a later hand
The J. Paul Getty Museum, Los Angeles

The Problem of Change

changing records about changing things.

Claude Monet (French, 1840 - 1926)
The Portal of Rouen Cathedral in Morning Light, 1894
Oil on canvas
The J. Paul Getty Museum, Los Angeles

Next steps

LINKED ART COLLABORATION

Getty

Rijksmuseum

Louvre

Metropolitan Museum of Art

Smithsonian

MoMA

National Gallery of Art

Philadelphia Art Museum

Indianapolis Art Museum

Harvard University

Princeton University

Yale Centre for British Art

Oxford University

Academica Sinica

ETH Zurich

FORTH

Zeri Foundation (U. Bologna)

Canadian Heritage Info.

Network

American Numismatics Society

http://linked.art

Thanks to:

— Rob Sanderson

— The linked.art community

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