THE GETTY VOCABULARIES:
USAGE EXAMPLES AND FUTURE INITIATIVES

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Who are our users? How do they access?

- Museums, archives, universities, libraries, governments

- Incorporated into collection management systems locally, or into products like TMS (The Museum System by Gallery Systems)

- Incorporated into local thesauri, for smaller collections, for those who don’t need the entire data set

- Online research tool, to populate catalog entries with Getty IDs

- Linked within online databases (standards: VIAF, Wikipedia)
Why Vocabularies?

There are many challenges and barriers to providing access to cultural heritage information.

The multilinguality and semantic links of the Getty vocabularies may aid breaking down some of these barriers.

E.g., different cultures may refer to the style of very similar vases by different terms.

Top of the AAT hierarchies

.... Styles and Periods Facet

......... Styles and Periods (hierarchy name)

........... <styles, periods, and cultures by region>

............ Asian

............. East Asian

................ Chinese (culture or style)

................ Chinese ceramics styles

..................... famille (ceramics style)

..................... famille rose

..................... fencai
### Category
- Intended for: Clothing & dress

### Place
- Made in: New Zealand

### Made of
- muka
- dogskin
- dog hair
- natural dye

### Type of
- kahu kuri
- cloaks

### Technique used
- weaving
- hand sewing

### Influenced by
- *Canis lupus familiaris*
- *Te Huringa T. 1800 - 1900*
- *Te Āti Awa [attributed]*

### People & Organisations
- Made by: Unknown
- Belonged to:
  - Sir Walter Buller
  - Walter Buller Estate
  - Walter Leopold Buller

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Te Papa Tongarewa museum  
Wellington, NZ  
AAT, TGN, ULAN linked terms
Europeana enriches its data with the AAT

By Valentine Charles and Cécile Devarenne, Europeana Foundation

The Getty Research Institute announced last March the release of their Art and Architecture Thesaurus (AAT) as Linked Open Data. This release opened many opportunities for Europeana.

AAT is a rich, structured and multilingual vocabulary including terms, descriptions, and other information for generic concepts related to art, architecture, other types of cultural heritage and conservation.

AAT has always been an important resource for Europeana’s data providers, especially museums. However, until now Europeana was not in the position to exploit it: firstly because the vocabulary was not openly available, secondly because Europeana didn’t have the technical means to exploit it.

The implementation of the Europeana Data Model (EDM) was the first step towards the re-use of widespread vocabularies such as AAT. EDM embraces the principles of the Semantic Web and therefore can be seamlessly integrated with a network of vocabularies at a semantic level. EDM gives support for contextual resources — the so-called ‘semantic layer’, including concepts from ‘value vocabularies’ like thesauri, authority lists, classifications, either coming from the network of Europeana’s providers or from third-party data sources. Since EDM is geared towards re-using existing semantic resources, the publication of AAT as Linked Open Data was an opportunity to seize.
<table>
<thead>
<tr>
<th>VIAF: Virtual International Authority File</th>
</tr>
</thead>
</table>

| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |
| 100 1 _ ta_Schnabel, Julian td 1951-      |

| Wikipedia, Authority Control |

Authority control

WorldCat Identities · VIAF: 66504730 · LCCN: n82243633 · ISNI: 0000 0001 1145 7128 ·
GND: 118609483 · SUDOC: 027869202 · BNF: cb12151051s (data) · ULAN: 500020477 ·
MusicBrainz: b1f73e44-0182-4b62-a8af-48d27c611c1d · NDL: 00474611 · NKC: nna2005261929 ·
RKD: 70766 · IATH: w6377jcc · PIC: 281471
International Translation Projects

AAT: Chile, Germany, Taiwan and Mainland China translations. Future agreements for substantial amounts of terms in Polish, Hebrew, and Portuguese. We hope for Russian, Arabic, Japanese, and of course Georgian contributions as well.

Terms are loaded in batches. Translators usually progress through a single hierarchy, and concentrate on their most needed terms.

New terms with no English equivalent are added.

Translators are sourced and credited.
Translations are loaded directly into existing records

Checked by editors
Published regularly
Coordinating contributions

• Advising re. mapping their existing data to format for loading into our editorial system

• Advising re. translation methodology and content issues

• Meetings and online conversations

The International Terminology Working Group (ITWG)—a collective of metadata and controlled vocabulary professionals and scholars from North America, Europe, Asia, and the Middle East—meet every year or so to discuss AAT translation Projects as well as new projects, the other vocabularies, and overall the challenges and opportunities in developing and maintaining multilingual electronic thesauri for use by cultural heritage institutions.
Provenance Index Remodel Project (PIR)

- Centuries of sales data of artworks, 1.7 million events, from ledgers and sales documents (sale events, artists, works, prices, locations, work types)
- Complete conceptual and technical overhaul of 30-year-old project
- Integration of Getty Vocabularies into data (ULAN: artists, TGN: places, AAT: work types and other data)
- All LOD
Sample record

**ID:** 1000085

**Names:**
- Avalokiteshvara
- Avalokiteśvara
- अवलोकितेश्वर
dröl ma tshogs khrigs

**AAT links**
- role/characteristic is ... bodhisattva
- symbolic attribute is ... lotus
- culture/religion is ... Mahayana (Buddhism)
- culture/religion is ... Theravada (Buddhism)

**Associative Relationships**
- associated with .... Krishna (Hindu iconography)
- counterpart is .... Guanyin (Buddhist iconography)

**Note**
The bodhisattva of infinite compassion and mercy; embodies the compassion of all Buddhas. This bodhisattva is portrayed in different cultures as either female or male...

**Hierarchical Relationships**
- Legend, Religion, Mythology
- Buddhist iconography
- Buddhist characters
- Avalokiteshvara (Buddhist iconography)

**Contributors & sources**
- [VP] Encyclopedia Britannica Online (2002-)
- Bowker, Oxford Dictionary of World Religions (1997)
- Huntington, Art of Ancient India (1985)
- LC: LC control no.: sh85010492
Getty Vocabularies and Contributing

Presentations describing the history, scope, and characteristics of the Getty Vocabularies and how to contribute to them. For more details on contributions, see Contributing to the Getty Vocabularies. For detailed editorial rules for contributing, see the Editorial Guidelines. For comprehensive information on controlled vocabularies, see Introduction to Controlled Vocabularies.

- Introduction to Controlled Vocabularies: Companion Presentation (revised 2015) (PDF, 7 MB, 92pp)
- Overview of the Getty Vocabularies (revised 2016) (PDF, 5.8 MB, 103pp)
- Abridged Overview of the Getty Vocabularies (revised 2016) (PDF, 5.5 MB, 48pp)
- Multilinguality and Translating the Getty Vocabularies (PDF, 6.8 MB, 109pp)
- Contributing to the Getty Vocabularies (revised 2016) (PDF, 9.9 MB, 190pp)
- Indexing Using the Getty Vocabularies (revised 2016) (PDF, 9.9 MB, 115pp)
- AAT: Introduction and Overview (revised 2016) (PDF, 11.3 MB, 228pp)
- TGN: Introduction and Overview (revised 2016) (PDF, 4.2 MB, 100pp)
- ULAN: Introduction and Overview (revised 2016) (PDF, 5.2 MB, 116pp)
- CONA: Introduction and Overview (revised 2016) (PDF, 13.9 MB, 261pp)
- Developing Authorities Workshop (PDF, 13 MB, 332pp)
- CONA and Subject Access (revised 2016) (PDF, 4.5 MB, 116pp)
- IA: Iconography Authority: Introduction and Overview (revised 2016) (PDF, 1.9 MB, 93pp)
- Glossary and Bibliography for Vocabularies (PDF, 219 KB, 47pp)
- Getty Vocabulary Program: Overview of Our Work (revised 2017) (PDF, 7.7 MB, 96pp)
Introdução aos
Vocabulários Controlados
Terminologia para arte, arquitetura e outras obras culturais
Patricia Harpring

COLEÇÃO GESTÃO E DOCUMENTAÇÃO DE ACERVOS:
TEXTOS DE REFERÊNCIA
Contributions

• Easy as X-M-L...or even Excel!

• Contributors of bulk data will sign a letter of agreement

• Contributions must meet the following criteria:
  • must be submitted by an authorized contributor
  • must be within scope of the vocabulary
  • must include the minimum information
  • must be submitted in the prescribed format

• By contributing data to the vocabulary, the contributor agrees to its contributed data becoming a permanent part of the vocabulary, which is licensed in various formats and made available as Linked Open Data

vocab@getty.edu
THE GETTY VOCABULARIES:
USAGE EXAMPLES AND FUTURE INITIATIVES
Data Usage Examples

International translation projects of the AAT

Counts by term:

<table>
<thead>
<tr>
<th>Term</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>145178</td>
</tr>
<tr>
<td>Dutch</td>
<td>60902</td>
</tr>
<tr>
<td>Spanish</td>
<td>55247</td>
</tr>
<tr>
<td>Chinese (traditional)</td>
<td>34932</td>
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<tr>
<td>German</td>
<td>20471</td>
</tr>
<tr>
<td>Chinese (transliterated Hanyu Pinyin)</td>
<td>19212</td>
</tr>
<tr>
<td>Chinese (transliterated Wade-Giles)</td>
<td>19180</td>
</tr>
<tr>
<td>Chinese (transliterated Pinyin without tones)</td>
<td>19131</td>
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<tr>
<td>French</td>
<td>6510</td>
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<td>American English</td>
<td>5450</td>
</tr>
<tr>
<td>British English</td>
<td>3012</td>
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<tr>
<td>Latin</td>
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<tr>
<td>Italian</td>
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<td>Swedish</td>
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<td>Portuguese</td>
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Counts by subject:

<table>
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<tbody>
<tr>
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<td>Dutch</td>
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<td>Spanish</td>
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<td>Swedish</td>
<td>432</td>
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<tr>
<td>Portuguese</td>
<td>177</td>
</tr>
</tbody>
</table>
Using the Vocabularies for Indexing

- Europeana classifications linked to AAT ([http://www.europeana.eu](http://www.europeana.eu))
AAT used as “Hub” vocabulary in ARIADNE cross search for archaeological resources (http://ariadne-portal.dcu.gr/)
Landscape with Sunset Reflecting in Sky / Albert Bierstadt

From Gilcrease Museum:
Creator: Albert Bierstadt
Role(s): Artist

From Getty's Union List of Artist Names:
Names (all): Bierstadt, Albert
Birth Date: 1830
Death Date: 1902
Nationalities: American (North American)
Roles: American painter, 1830-1902
Gender: male

Note: Bierstadt was one of the most important landscape painters of the American West, producing large, romantic canvases of the Rocky Mountains, the Yosemite Valley, and the Native American tribes of the West. He also owned a successful photography business with his brothers, Charles and Edward, that operated in New York City from 1860 to 1866.

Related People:
- Bierstadt, Charles, partner of - person
  American photographer, 1819-1903
- Bierstadt, Edward, partner of - person
  American photographer, 1824 - ca. 1907
- Bierstadt, Charles, sibling of - person
  American photographer, 1819-1903
- Bierstadt, Edward, sibling of - person
  American photographer, 1824 - ca. 1907
Data Visualization Examples

Visualize a graph using lodlive (http://en.lodlive.it/?http://vocab.getty.edu/aat/300198841)
Collapsible dendrogram of AAT hierarchy by Matthew Lincoln using D3.js

https://matthewlincoln.net/2014/02/21/hierarchies-of-the-getty.html

Source:
An interactive visualization interface created by M. Lincoln
Captured 2017-09-19 from
https://matthewlincoln.net/pages/dendrogram-fullscreen
Visualization and exploration of graphs and networks using Gephi (https://gephi.org)

Teacher-student relationship among French artists born between 1800 and 1850.

Foreword
This is a small test to explain the process following an email request after this "test" by Antoine Courtois (@seeksacrewmate).

Legend:
- student_disappearance
- occurrences_Count
- teachers
- students

How?
- 1st step: In SPARQL Endpoint at query.getty.edu, use a query like this (example): and download json.
- 2nd step: Insert the json file in OpenRefine and extract data (nationality, date, etc.) using split function and regex if needed.
- 3rd step: Export csv data with comma-seperated value and use Tableau to create a gephi file (use bipartite Network).
- 4th step: Open gephi file in Gephi and play with classification and partition to adjust edges before using Force atlas 2 as spatialization.
- 5th step: In the preview, change the settings as you like.
- 6th step: After downloading the plugin sigma, export your project and put on a local server to try.

This example is based on requests by Vladimir Alexiev, available on the Getty's website. Thanks.

Search:
Search by name
The Future of the Getty Vocabularies LOD

• Current effort underway at the Getty to bring together all institutional data sets under one semantic architecture online

• ULAN data model / ontology first to be changed with standards such as CIDOC-CRM and Schema.org being evaluated

• AAT ontology definition will likely not change significantly

• TGN ontology definition will most likely change, but options have yet to be evaluated

• Focus will shift to providing the data in forms that are easier to understand and use, and services for both humans and machines on top of the data to help with discovery and reconciliation
API: Application Programming Interface

The same data can be exposed in different ways to different audiences simultaneously.

- Need to understand how to access the data
- APIs can provide different functionality
- Fewer ways with more users is more sustainable
- Web provides HTTP protocol for data transport
Data Profiles

Need the shape of the data to be consistent and easy to use. Different audiences thus need different shapes.

- Current profile (SKOS-XL, custom GVP) for Researchers
- Add Linked Art profile for Museum audience
- Add schema.org profile for Web/SEO Audience

Different representations or descriptions of the same entity, not different entities.
Developer-Friendly Format

```json
{
   "@context": "https://lod.museum/ns/context/1/full.jsonld",
   "id": "https://lod.museum/example/object/1",
   "type": "ManMadeObject",
   "classified_as": "aat:300033618", # by reference
   "label": "Example Painting",
   "made_of": {
      "id": "aat:300015045", # by (minimal) value
      "type": "Material",
      "label": "watercolor"
   }
}
```
Applications

Developers that can rely on consistent format, shape and interactions, can build robust and innovative applications.

- Need many such applications to validate usability
- Notifications of updates to remain synchronized
- Notifications of contributions to dataset
  - ... via reference to external entities?

Translations provide easy internationalization
Contributing to the Getty Vocabularies

• Contact Getty Vocabulary Program and sign contributor agreement
• Input format is XML, but other formats are considered
• Required fields for each Vocabulary
• Custom merging algorithms combine data for concepts/people/places that already exist in data set

http://www.getty.edu/research/tools/vocabularies/contribute.html
Future Challenges for Community Integration

• Data synchronization between Vocabularies and contributors
• Timely notifications of updates to user community
• New approach to data loads in order to simplify and speed up contributions
• Co-referencing of data repositories that aligned with the Vocabularies
Thank you!

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