

Linking the Getty Vocabularies:

The Content Perspective, Including an Update on CONA

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Find the Getty Vocab Online

- For information about the Getty vocabularies, see this site
- Search the data, access data releases, contribute, editorial guidelines, training materials (ITWG too), news
- Contact us: vocab@getty.edu

<http://www.getty.edu/research/tools/vocabularies/index.html>

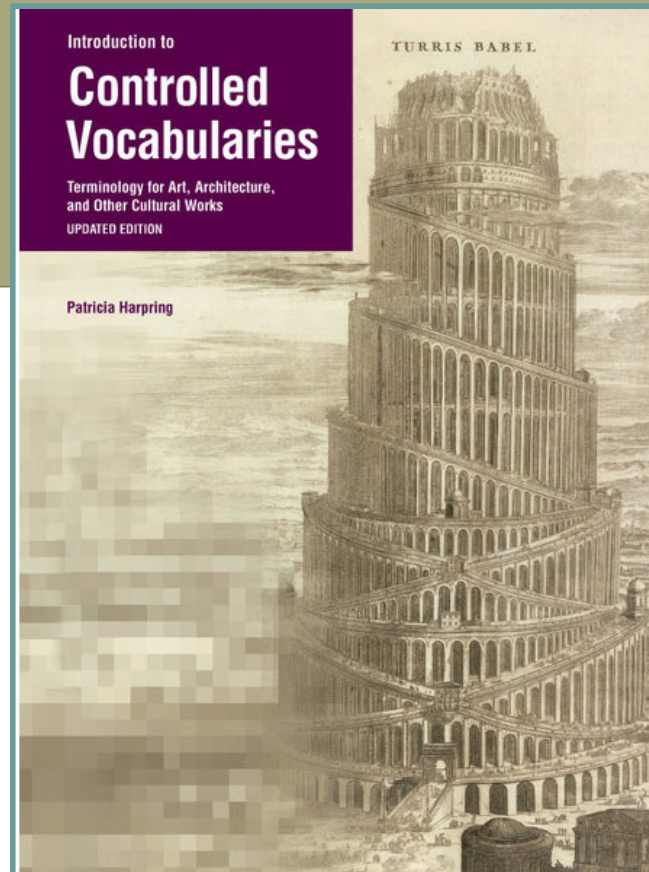
The screenshot shows the homepage of The Getty Research Institute. The main navigation bar includes: Exhibitions & Events, Special Collections, Library, Search Tools & Databases, Scholars & Projects, Publications, and About the GRI. The 'Search Tools & Databases' dropdown menu is open, listing options like Primo Search, Getty Research Portal, and various vocabularies. The 'Getty Vocabularies' section is highlighted, featuring a 'NEW' announcement that the vocabularies are now available as Linked Open Data. Below this, there are three featured vocabulary cards: 'The Art & Architecture Thesaurus (AAT)', 'The Getty Thesaurus of Geographic Names (TGN)', and 'The Cultural Objects Name Authority (CONA)'. Each card includes a brief description and a small icon. On the right side of the page, there is a 'Linked Open Data' logo and a 'See What's New' section listing multilingual support for AAT, TGN, and ULAN. At the bottom of the page, there is a copyright notice for Patricia Harpring © 2018 J. Paul Getty Trust.

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Introduction to Controlled Vocabularies

Patricia Harpring
Series edited by **Murtha Baca**

This primer on the characteristics, scope, uses, and methods for building and maintaining controlled vocabularies for art and cultural materials explains how vocabularies should be integrated in cataloging systems; utilized for indexing and retrieval; and structured to group synonyms and arrange concepts into categories.



www.getty.edu/research/publications/electronic_publications/intro_controlled_vocab/

The Way We Were
Where We Are Now

•Introduction

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The Way We Were

Researching art, architecture, cultural heritage

- How did art historians do research in the past?
- By hand, physical resources and card catalogs, bibliographic indexes such as BHA
- Printing, photocopying, taking photos of materials, note taking
- Traveling around the world, many months to find all data

- Needed better methods and tools for research and discovery
- Solutions would also address needs of repositories, other cataloging institutions with mission to disseminate their data
- The Getty vocabularies, CDWA, etc. were developed to allow consistency in cataloging and improvement of retrieval

My box of research materials for one project



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MAKING RELATIONSHIPS LINKING

- **Goal = data linked to other data, discoverable -**
Link, consensus across different disciplines;
repositories (archives, special collections, visual
resources, museums, bibliographic, scholars);
languages and cultures; current and historical

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Where We Are Now

The story that I will tell today

- Now we can begin to find materials for research and discovery online
- Getty vocabularies have been used for indexing
Now we can make actual links, discovery
- Ninety sample SPARQL queries, editable
(change dates or nationalities, e.g., *Chinese architects working in North America*)

Find artists who are not Italian and who worked in Italy and lived during a given time range

Select ULAN records

- Having event that took place in **tgn:1000080 Italy** or any of its descendants
- **Birth date between** 1250 and 1780
- Descendants of facet **ulan:50000002 "Persons, Artists"**
- Not having nationality **aat:30011198 Italian** or any of its descendants

- Then use this set of artists to search for works
- [More automated discovery using "big data" etc.]

The screenshot shows the 'Getty Vocabularies: LOD' interface. On the left, a list of queries is visible, with '5.9 Non-Italians Who Worked in Italy' highlighted. A red arrow points from this query to the SPARQL query editor on the right. The query editor contains the following SPARQL query:

```

select ?x ?name ?bio ?birth {
  {select distinct ?x
   {?x
    foaf:focus/bio:event/(schema:location){(schema:location/gvp
    :broaderExtended)) tgn:1000080-place}}
   ?x gvp:prefLabelGVP/xl:literalForm ?name;
    foaf:focus/gvp:biographyPreferred [
     schema:description ?bio;
     gvp:estStart ?birth].
   filter ("1250"^^xsd:gYear <= ?birth && ?birth <=
    "1780"^^xsd:gYear)
   filter exists {?x gvp:broaderExtended ?facet.
    filter (?facet in (ulan:50000002, ulan:50000002))}
   filter not exists {
    ?x
    foaf:focus/(schema:nationality){(schema:nationality/gvp:broa
    derExtended)) aat:30011198}}
  }
}

```

At the bottom of the query editor, there is a smaller version of the same query.

Where We Are Now

The story that I will tell today



AAT



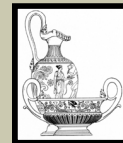
TGN



ULAN



IA



CONA

- This paper = from the content-creation point of view of the Getty Vocabulary Program
- Getty vocabularies represent over 35 years of continuing international collaborative scholarship
- Relationships and linking are built into and among the Getty vocabularies
- When LOD was under development, we adjusted data accuracy and integrity, editorial rules to meet the new requirements
- Looking to new ways to utilize the vocabularies for research and discovery

Scope of Each
Getty Vocabulary

User Statistics

- Context of
the Getty Vocabularies

Context of the Getty vocabularies

- Getty vocabularies are structured vocabularies that comply with national and international standards for thesaurus construction (NISO and ISO)
- Getty vocabularies grow through contributions from the user community
- Compiled and disseminated by the Getty Vocabulary Program at the Getty Research Institute and Getty Digital
- Released in online search (refreshed every month), XML, Relational Tables, Web Services, JSON, RDF, N3/Turtle, N-Triples; analysis going on now for other formats
- Linked Open Data allows the vocabularies to be released in formats that are designed for powerful linking to various data sets, and with open licensing to allow freer use without restrictions
- **Target audience:** The primary user communities and target audience of the Getty vocabularies include researchers in art and architectural history, art libraries, archives, visual resource collections, museums, special collections, other repositories of cultural heritage information, conservation specialists, archaeological projects, bibliographic indexing projects, and the information specialists who attend to the needs of these users

Batch loading of data
*From various contributors,
 In our prescribed format*

Processing Data
*Global edits, VCS system,
 Merging, editing/adding info
 Moving/adding links*

Releasing Data
*Release formats
 Web, LOD,
 XML, Rel Tables*

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Context of the Getty vocabularies

- Please see the full list of contributors to the Getty vocabularies here:
www.getty.edu/research/tools/vocabularies/contributors.html

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

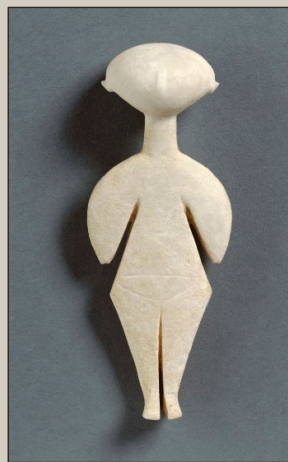
Brief Name	Full Name
A	
AS-Academia Sinica	Academia Sinica (Academia Sinica; Nankang, Taiwan)
AAM	Ackland Art Museum (Chapel Hill, North Carolina)
AKAG	Albright-Knox Art Gallery (Buffalo, New York)
AC	Allegheny College (Allegheny, Pennsylvania)
ACC	American Art Collection (United States)

User statistics for Getty vocabularies

- Getty vocabularies are valued as authorities because their quality is reliable and the data is linkable
- To ensure good quality, the Getty vocabularies are compiled by experts and sources are cited
- Use of the Getty vocabularies is very high for the domain
- Every year, the Getty vocabularies are used by thousands of individuals and institutions to index published or local materials about art and to provide access
- Online search page, there are on average around 100,000 searches per month, making the Getty vocabularies among the top resources accessed at the Getty Research Institute (GRI)
- Implemented in many collection management systems and Web sites around the world
- Linked Open Data (LOD) releases typical month in 2018 over 1,000,000 records (92.95 GB of data) were accessed and downloaded from the LOD site

How are the Getty vocabs used?

- Used for cataloging and for retrieval
- Fields controlled by Getty vocabularies
- Linking to vocabularies allow better access



Catalog Level item
Classification sculpture | antiquities
Work Type statuette AAT
Titles Female Figure of the Kilia Type
 Female Figure (Star Gazer)
Creator unknown Anatolian ULAN
Creation Date 2800/2200 BCE
Style/period: Chalcolithic
General Subject human figures
Specific Subject fertility | human female
Current Location J. Paul Getty Museum, Getty Villa
 Malibu (Los Angeles, California, USA) ULAN
Repository Number 88.AA.122 TGN
Dimensions 14.3 cm height (5 5/8 inches)
Mat & Tech carved marble **Index:** marble AAT
Style Kilia type

AAT record

[Semantic View \(JSON, RDF, N3/Turtle, N-Triples\)](#)

ID: 300011443

Page Link: <http://vocab.getty.edu/page/aat/300011443>

marble (rock) (metamorphic rock, rock (inorganic material)) ... Materials (hierar

marble (rock) (**preferred**, C,U,LC,English)
marbles (rocks) (C,U,English,AD,U,N)
marmor (C,U,English,UF,U,N)
 大理石 (C,U,Chinese (traditional)-P,D,U,U)
 大理岩 (C,U,Chinese (traditional),UF,U,U)
 dà lǐ shí (C,U,Chinese (transliterated Han)
 da li shi (C,U,Chinese (transliterated Pin)
 ta li shih (C,U,Chinese (transliterated W)
marmmer (C,U,Dutch-P,D,U,U)
marmmerplaat (C,U,Dutch,UF,U,U)
marmmerplaten (C,U,Dutch,UF,U,U)
marbre (roche) (C,U,French-P,D,U,N)
marbres (roche) (C,U,French,AD,U,N)
marmo (C,U,Italian-P,D,U,N)
mármol (C,U,Spanish-P,D,U,U)
Marmor (C,U,German-P,D,U,N)

<http://www.getty.edu/research/tools/vocabularies/index.html>

Scope of each Getty vocabulary



- **AAT: Art & Architecture Thesaurus** ®

Includes generic terms, dates, relationships, sources, and notes for work types, roles, materials, styles, cultures, techniques, and other concepts (e.g., *orthographic drawings, amphora, oil paint, olieverf, peintures à l'huile, acetolysis, sintering, 玉器, Jadekünste, Olmeca, Rinascimento, Chen-Yen (Buddhism), watercolors, and asa-no-ha-toji*)



- **TGN: Getty Thesaurus of Geographic Names** ®

Focuses on art, architecture, and related disciplines, recording names, relationships, place types, dates, notes, and coordinates for current and historical cities, nations, empires, archaeological sites, lost settlements, and physical features. Thesaurus, through LOD TGN may be linked to GIS and maps (e.g., *Diospolis, Acalán, Ottoman Empire, Mogao, Ch'ien-fu-tung, Ganges River, and गंगा नदी*)



- **ULAN: Union List of Artist Names** ®

Includes names, relationships, notes, sources, and biographical information for artists, architects, firms, studios, repositories, patrons, sitters, and other individuals and corporate bodies, both named and anonymous (e.g., *Charles Vandenhove et associés, Mark Rothko, Cai Xiang, 葵囊, Crevole Master, and Rajaraja Museum*)

<http://www.getty.edu/research/tools/vocabularies/index.html>

Scope of each Getty vocabulary



- *IA: Getty Iconography Authority*

IA is a new resource that focuses on subjects and topics relevant to art, architecture, and related disciplines. IA includes multilingual and multicultural proper names, relationships, and dates for iconographical narratives, religious or fictional characters, themes, historical events, and named literary works and performing arts (e.g., *French Revolution, Adoration of the Magi, Flood of Deucalion, Xibalba, Niflheim, शिव (Hindu deity), Shiva, and Bouddha couché*)



- *CONA: Cultural Objects Name Authority* ®

CONA is a new resource that compiles titles/names, as well as creator attribution, patron, materials, dates, and location for works of art, architecture, and other cultural works, current and historical, documented as items or in groups, whether works are extant, destroyed, or never built, with data compiled from documentation projects, repositories, and scholars. CONA could be of critical importance to those cataloging visual surrogates and other images, to researchers, and to many other users (e.g., *Chayasomesvara Temple, Mona Lisa, Livre de la Chasse, Hagia Sofia, Αγία Σοφία, and Le déjeuner sur l'herbe*)

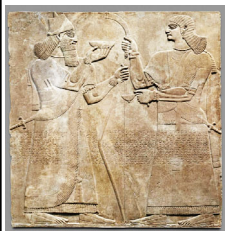
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AAT, the Art & Architecture Thesaurus®

Sample record

Partial record



preferred
is flagged,
but not
required
to use it;
based on
local rules

AAT_ID: 300011329

Terms:

bas-reliefs (pref, en, fr)
 bas-relief (en, fr)
 low reliefs (en)
 bas-reliëfs (nl)
 travertino (es)
 bassorilievo (it)
 bajos relieves (es)
 travertin (fr)
 Flachreliefs (de)
 淺浮雕 (雕塑)(zh; Chinese traditional)
 qiǎn fú diāo (Chinese (transliterated Hanyu Pinyin))
 qian fu diao (Chinese (transliterated Pinyin without tones))
 ch'ien fu tiao (Chinese (transliterated Wade-Giles))

Associative Relationships

produced by ...
 bas-relief (technique)
 [300053623]
 distinguished from ...
 high reliefs (sculpture)
 [300184782]

Hierarchical Relationships (poly)

Objects Facet
 .. Visual and Verbal Communication
 Visual Works
 <visual works by material or technique>
 sculpture (visual works)
 <sculpture by technique>
 reliefs (sculptures)
 bas-reliefs (sculpture)

Scope Notes:

- Refers to works executed in relatively shallow relief. (en)
- Beeldhouwwerken uitgevoerd in relatief laag reliëf. (nl)
- Úse para obras ejecutadas en relieve relativamente superficial. (es)
- 指浮雕圖案較淺的作品。 (zh)
- Bezeichnet eine Arbeit, die in relativ flachem Relief ausgeführt ist. (de)

Contributors: AS-Academia Sinica, CDBP-DIBAM, GCI, ICCD, IfM-SMB-PK, RKD, AAT-Ned, VP

Sources: AATA database (2002-) 120890; Avery Index (1963-); Grove Art Online; Oxford English Dictionary; Lucie-Smith, Thames & Hudson Dictionary of Art Terms (2006); Ching, Diccionario Visual de Arquitectura (1997); Preble and Preble, Artforms (1989); RIBA, Architectural Keywords (1982); Van Dale groot woordenboek (1994); IfM Berlin; TAA database (2000-); AAT-Ned (1994-)



ULAN, the Union List of Artist Names®

Sample record

Partial record



ID: 500014514

Names:

- Gaudí, Antoni
- Antoni Gaudí
- Cornet, Antoni Gaudí
- Cornet, Antonio Gaudí y
- Gaudí, Antoni
- Gaudí i Cornet, Antonio
- Gaudí Jornet, Antoni
- Gaudí y Cornet, Antoni
- Gaudí Jornet, Antoni
- Gaudi, Antoni
- Gaudi, Antonio
- גאודי, אנטוני

Nationalities:

- Spanish (pref)
- Catalan

Roles:

- artist (pref) AAT
- architect
- landscape architect
- furniture designer

Gender: male

Birth and Death Places:

Born: Reus (Tarragona province, Catalonia, Spain)) (inhab place)

Died: Barcelona (Barcelona province, Catalonia, Spain) (inhab place)

TGN

Associative Relationships:

collaborated with Torres-García, Joaquín (Uruguayan painter and theorist, 1874-1949) 1903-1904 [500031259]

worked with ... Martorell y Montells, Joan (Spanish architect, 1833-1906) [500072753]

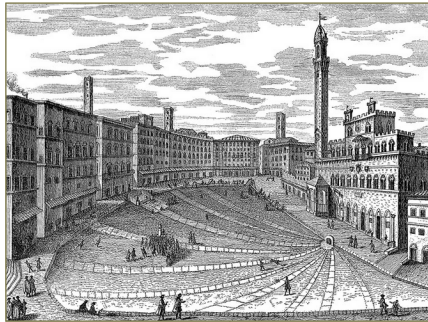
student of Sala Cortes, Emilio (Spanish architect, active late 19th century) [500287019]

Contributors:

VP,JPGM,Avery,FRICK, WCI,Prov,GRLPSC,BHA,CCA

Sources: Avery Authority files (1963-); Avery Index to Architectural Periodicals (1963-); Grove Art artist database (1989-); Grove Dictionary of Art online (1999-2002) accessed 13 August 2003; Harald Szeemann papers, Finding Aid, GRI Special Collections (2011-); Library of Congress Authorities database (n.d.) n 79079077

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TGN, the Getty Thesaurus of Geographic Names®

Sample record

Partial record

ID: 7011179

Names:

Siena
 (it,en,es,fr,nl,de)
 Σιένα (el)
 Siyenah
 锡耶纳 (zh)
 シエーナ (ja)
 Sienese (en-adj)
 Sienna (h-en)
 Sena Julia (h-la)
 Sanna (h)
 Saena (h)

Hierarchical Rels. (polyhierarchical)

World (facet)
 .. Europe (continent)
 ... Italy (nation)
 Tuscany (region)
 Siena (province)
 Siena (inhabited place)

World (facet)
 .. Europe (continent)
 ... Italian Peninsula (peninsula)
 Etruria (former confederation)
 Siena (inhabited place)
 Historical: Late Etruscan

Associative Rels

ally of Pisa ..(inhabited place) [7006082]
 Ghibelline allies, 13th-14th centuries

Contributors: BHA, FDA, GRLPSC, VP

Sources: *Annuario Generale* (1980); *Canby, Historic Places* (2007) 2/861; *Dizionario Corografico Toscana* (1977) 1508; *Library of Congress Subject Headings* (2002-); *Milanesi, Storia dell'Arte Senese* (1969) *passim*; *NGA/NIMA database* (2003-) -129709; *TCI: Toscana* (1984) 479 ff; *Times Atlas of the World* (1992) 183; *UNESCO World Heritage Centre [online]* (1992-) accessed 20 July 2010; *Webster's Geographical Dictionary* (2007) 1114

Place Types

inhabited place settled by Etruscans
 (flourished by 6th century BCE)
 city **AAT**
 archiepiscopal see
 commune (administrative) since 1125
 cultural center
 university center
 world heritage site

Lat: 43 19 07 N (43.3180)
Long: 011 19 50 E (11.3300)
Elevation: 1056.430 feet (322.0000 meters)

Note: Siena was founded as an Etruscan hill town; later was the Roman city of Sena Julia (3rd century BCE). It flourished under the Lombard kings (6th century CE) and was Medieval self-governing commune ...



IA, Getty Iconography Authority

Sample record

Partial record

ID: 1000085

Names:

Avalokiteshvara

Avalokiteśvara

अवलोकितेश्वर

ཡུན་རས་གཟིགས་

Spyan ras gzigs

AAT links

role/characteristic is ... bodhisattva

symbolic attribute is ... lotus

culture/religion is ... Mahayana (Buddhism)

culture/religion is ... Theravada (Buddhism)

AAT
TGN
ULAN
CONA

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

Top of the IA hierarchies

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.: sh 85010492

CONA, Cultural Objects Name Authority®



Sample record: Movable work

Partial record

CONA ID: 700001950

Titles:

Shiva (nl; en)
 Shiva met de maan in het haar (nl)
 Shiva with the Moon in his Hair (en)

Catalog Level: item

Work Types:
 sculpture (visual work) **AAT**

Classifications:
 sculpture (preferred)

Creation Date: 1000/1200

Creator Display:
 anoniem
 sculptor: unknown Chola **ULAN**

Locations: **ULAN** **TGN**

Current: Rijksmuseum (Amsterdam, North Holland, Netherlands) AK-MAK-1291; RM001.collect.910; Bruikleen van de Vereniging van Vrienden der Aziatische Kunst

Creation: Tamil Nādu (India)

Mat & Tech: bronze founding **AAT**

Dimensions: 40 cm (height) x 24cm (width) x 10.5 (depth)

Events: exhibition: Metamorfoze/Geheugenproject Willem Witsen **AAT**

Cultures:
 Indian Chola **AAT**

General Subject:
 human figures (preferred)
 religion and mythology

Specific Subjects:
 Shivá (Hindu iconography)
 mudrā (pose, <visual and representational concepts>)

[link to Iconclass]

Contributors & Sources: [Rijksmuseum;VP]; Rijksmuseum XML file

AAT
TGN
ULAN
CONA
IA



CONA, Cultural Objects Name Authority®

Sample record: Built work

Partial record

CONA ID 700000141

Titles/Names:

Hagia Sophia (en,de,nl)
 Ayasofya (tr)
 Αγία Σοφία (el)
 Agia Sofia
 Haghia Sophia
 Sainte-Sophie (fr)
 Santa Sofía (es)
 Santa Sofia (it)
 Sancta Sophia (la)
 Sancta Sapientia (la)
 Holy Wisdom (en)
 Saint Sophia (en)
 聖蘇菲亞大教堂 (zh)

Work Types: church; mosque;
 museum

AAT

Date: original structure dated from 4th century CE; present structure built 532-537 CE; rebuilt in 12th century

ULAN

Creators: Anthemios of Tralles (Byzantine architect, ca. 474-ca. 534) and Isidoros of Meletus, the Elder (Byzantine architect, active mid-6th century);
Patron: Justinian I (Byzantine emperor, ca. 482-565)

Built Work
 ... Hagia Sophia
Associative Relationship depicted in *View of the Hagia Sophia in Constantinople*; Eduard Hildebrandt; watercolor; ca. 1852; Hermitage Museum (Saint Petersburg, Russia) [700008345]

Location: Istanbul (Marmara, Turkey)
Address Note: 41.008548°N; 28.979938°E

TGN

Materials: system bearing masonry, centralized plan; interior surfaces are sheathed with polychrome marble, porphyry, and mosaics
Dimensions: central dome: diameter 31 m (102 feet); height 56 m (184 feet)

AAT

General Subject: architecture
Specific Subject: Holy Wisdom Religion/Mythology

AAT
 TGN
 ULAN
 CONA
 IA

Note: Domed basilica was completed by the Emperor Justinian; built in Constantinople in 6th century...

Contributors: Avery, BHA, FDA, VP
Sources: Fleming, *Penguin Dictionary of Architecture* (1999); Herrin, *Judith, Byzantium* (2007); Maidstone, *Hagia Sophia* (2002); Theoharidou, *Architecture of Hagia Sophia* (1988); Xydis, *Chancel Barrier of Hagia Sophia* (1947)

Coordinating
Contributed
Records

• Linking or Merging?

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Relationships and linking are built into and among the Getty vocabularies

Merging data in one record

- As compiled resources, multiple contributors may submit to a vocabulary separate records containing information for the same entity
- Critical that processing of contributions results in unified records for each entity, presented clearly for the end-users
- Preferences, languages, editorial oversight may be established for data about the entity
- Rather than clustering contributed records together (linking), Getty vocabularies merge the data into a homogenous whole
- The attribution to the contributor and sources are retained

Getty vocabularies merge contributed records

JPGM: tmsid_3041
Guardi, Francesco

Witt: WCI_20934875
Guardi, Francesco

Avery: avery_49856
Guardi, Francesco

BHA: bha_8476
Guardi, Francesco

GRIPA: pa_3874665
Guardi, Francesco



detail of portrait, by Pietro Longhi, in Ca' Rezzonico, Venice

ULAN_500017409

Names:

Guardi, Francesco
Francesco Guardi
Gardi, Francesco
Garde, Francesco
Gardis, Francesco
François Guardi

Nationalities:

Italian
Venetian

Roles:

artist
painter
landscapist

[Links to images](http://www.getty.edu/art/collection/objects/226196)



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Merging data in one record


ULAN ID	Matching name	Display biography	Roles (AAT-controlled)	Nationality (AAT-controlled)	Estimated birth date	Estimated death date
500017409	Guardi, Francesco	Venetian painter, 1712-1793	artist painter landscapist	Venetian Italian	1712	1793
500312969	Guardi, Francesco	Italian noble, born 1514	<u>noble</u>	Italian	<u>1514</u>	<u>1614</u>
500412666	Guardi, Francesco	Italian artist, ca. 1712-1793	artist	Italian	1707	1793

- Example of ULAN records that are candidates for merging
- If there are enough matching data, the records may be automatically merged or rejected for merging
- If the match is deemed possible but not enough firm data are available, the records are passed to human editors for processing and approval
- Long experience and algorithms → Reconciliation API is under development

A name matches exactly; role matches; a nationality matches; dates within range?


ULAN record is a merged homogenous entity

Research Home / Tools / Union List of Artist Names / Full Record Display




Union List of Artist Names® Online Full Record Display

[New Search](#) [Previous Page](#)

Click the  icon to view the hierarchy.

[Semantic View \(JSON, JSONLD, RDF, N3/Turtle, N-Triples\)](#) [Representative](#)

 **Guardi, Francesco** (Italian painter, 1712-1793)

Note: Venetian painter, during the first half of his life on decorations and church paintings; later became a vedutista (view painter) of Venetian urban life.

Names:

- Guardi, Francesco** ([preferred](#), [V](#), [index](#), [LC](#))
- Francesco Guardi** ([V](#), [display](#))
- Gardi, Francesco** ([V](#))
- Garde, Francesco** ([V](#))
- Gardis, Francesco** ([V](#))
- Gauda, Francesco** ([V](#))
- Guada, Francesco** ([V](#))
- Guarde, Francesco** ([V](#))
- Guardet, Francesco** ([V](#))
- Gvardi, Franchesko** ([V](#))
- Guardi, François** ([V](#))
- Guardi, Francisco** ([V](#))



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Guardi, Francesco [[AVERY Preferred](#), [BHA Preferred](#), [GRISC Preferred](#), [GRL Preferred](#), [GRLPA Preferred](#), [preferred](#)]

...

...

List/Hierarchical Position:

-  [Persons, Artists](#)
-  [Guardi, Francesco](#) (I)

Biographies

- (Venetian painter, 1712-1793) [[VP Preferred](#)]
- (Venetian painter, 1712-1793) [[BHA](#)]
- (Italian painter, ca. 1712-1793) [[GRIPA](#)]
- (Italian painter, ca. 1712-1793) [[PROV](#)]
- (Italian artist, 18th century) [[WCP](#)]
- (Italian artist, 18th century) [[WCI](#)]
- (Italian artist, 1712-1793) [[WL-Courtauld](#)]
- (Italian painter, 1712-1793) [[AVERY](#)]
- (artist, 1712-1793) [[GRL](#)]


Note:


- English [[AVERY](#)]
- [LCNAF Library of Congress Name Authority File \[n.d.\]](#)
- [Provenance Index Databases, Authority file \(1985-\)](#)


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Attribution to contributor and source is maintained, but merged, unified, and "preferred" is flagged

Example of a clustered display with separate entities

Guardi, Francesco, 1712-1793 


















Francesco Guardi 


Guardi, Francesco 


Guardi, Francesco (Italian painter, 1712-1793) 


VIAF ID: 27073465 (Personal)
Permalink: <http://viaf.org/viaf/27073465>


Preferred Forms


-  100 0 _ [ta Francesco Guardi](#)
-  200 _ | [ta Guardi tb Francesco tf 1712-1793](#)
-  100 1 _ [ta Guardi, Francesco](#)
-  100 1 _ [ta Guardi, Francesco](#)
-  B 100 1 _ [ta Guardi, Francesco](#)
-  100 1 _ [ta Guardi, Francesco td \(1712-1793\)](#)
-   100 1 _ [ta Guardi, Francesco td \(1712-1793\)](#)
-   100 1 _ [ta Guardi, Francesco td 1712-1793](#)
-  100 1 _ [ta Guardi, Francesco td 1712-1793](#)
-  100 1 0 [ta Guardi, Francesco td 1712-1793](#)
-  100 1 _ [ta Guardi, Francesco tg Italian painter,](#)
-  100 1 _ [ta Guardi, Francesco, td 1712-1793](#)
-  100 1 _ [ta Guardi, Francesco, td 1712-1793](#)
-  100 1 _ [ta Guardi, Francesco, td 1712-1793](#)
-  100 1 0 [ta Guardi, Francesco, td 1712-1793](#)


 100 0 _ [ta Francesco Guardi](#)


 200 _ | [ta Guardi tb Francesco tf 1712-1793](#)

 100 1 _ [ta Guardi, Francesco](#)

 100 1 _ [ta Guardi, Francesco](#)

 B 100 1 _ [ta Guardi, Francesco](#)

 100 1 _ [ta Guardi, Francesco td \(1712-1793\)](#)

 100 1 _ [ta Guardi, Francesco td \(1712-1793\)](#)

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Equivalence
Relationships

Hierarchical
Relationships

Associative
Relationships

- Thesaural Relationships

www.getty.edu/research/tools/vocabularies/index.html

The Getty Vocabularies Are Thesauri

- Thesaurus: A semantic network of unique concepts
- Thesauri may be monolingual or multilingual
- Thesauri may have the following three relationships:
 - Equivalence Relationships
 - Hierarchical Relationships
 - Associative Relationships

associative

triumphal processions
 triumphal procession
 Triumphzug
 procession triomphale
 processione trionfale
 procesion triunfal

Objects Facet

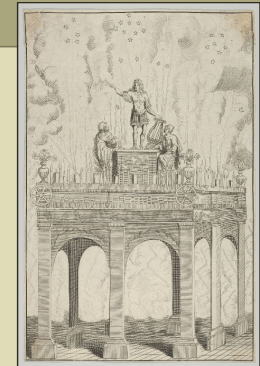
hierarchical

.. Built Environment
 Single Built Works
 <single built works by function>
 monuments
 memorial arches
 triumphal arches

triumphal arches
 triumphal arch
 凱旋門 (紀念性拱門)
 kǎi xuán mén
 triomfbogen
 Triumphbögen
 archi trionfali
 arcos de triunfo

equivalence

locus/setting for



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Sample AAT record display (partial data)

AAT_ID: 300132869

Terms:

- **triumphal arches** [1000007003] **Qual:** (memorial arches)
Pref: pref **Type:** D **Lang:** (en) **Con.:** FDA, GCI, VP
- **triumphal arch** [1000290974] **Qual:** (memorial arch)
Type: ALT **Lang:** (en) **Con.:** FDA, VP
- **凱旋門** **Qual:** (紀念性拱門) [1000545314]
Type: D **Lang:** (zh, Chinese (traditional)) **Con.:** AS
- **kǎi xuán mén** [1000545316] **Lang:** (zh, Chinese (transliterated Hanyu Pinyin)) **Con.:** AS
- **kai xuan men** [1000545315] **Lang:** (zh, Chinese (transliterated Pinyin without tones)) **Con.:** AS
- **k'ai hsüan men** [1000545317]
Lang: (zh, Chinese (transliterated Wade-Giles)) **Con.:** AS
- **trionfbogen** [1000467730] **Type:** D **Lang:** (nl) **Con.:** RKD, AAT-Ned
- **trionfboog** [1000467731] **Lang:** (nl) **Con.:** RKD, AAT-Ned
- **Triumphbögen** [1000603579] **Qual:** (Ehrenbögen)
Type: D **Lang:** (de) **Con.:** IfM-SMB-PK
- **Triumphbogen** [1000603580] **Qual:** (Ehrenbögen)
Lang: (de) **Con.:** IfM-SMB-PK
- **archi trionfali** [1000131380]
Type: D **Lang:** (it) **Con.:** ICCD
- **arcos de triunfo** [1000415271]
Type: D **Lang:** (es) **Con.:** CDBP-DIBAM
- **arco de triunfo** [1000415272] **Lang:** (es) **Con.:** CDBP-DIBAM
- **arcs de triomphe** [1000777382] **Type:** D **Lang:** (fr) **Con.:** AAT-AD
- **arc de triomphe** [1000777381] **Lang:** (fr) **Con.:** AAT-AD

Associative Relationships

Type: locus/setting for

triumphal processions [300379150]

Hierarchical Relationships (polyhierarchical)

Objects Facet

- .. Built Environment (hierarchy name) (G)
- Single Built Works (hierarchy name) (G)
- single built works (built environment) (G)
- <single built works by specific type> (G)
- <single built works by function> (G)
- monuments (G)
- <monuments by form> (G)
- memorial arches (G)
- triumphal arches (memorial arches) (G)

Contributors: CDBP-DIBAM, FDA, GCI, IfM-SMB-PK, TELDAP, RKD AAT-Ned, VP, AAT-AD

Sources: AATA database (2002-) 129984; Avery Index (1963-); Library of Congress Authorities online (2002-) sh 85006535; Brilliant, Roman Art (1974) index; RIBA, Architectural Keywords (1982); Van Dale groot woordenboek (1994); Duden [online] (2011-); dtv-Atlas Baukunst (1982) 211; GND - Gemeinsame Normdatei <http://d-nb.info/gnd/4186247-8>; IfM Berlin; Van Dale groot woordenboek (1994); TELDAP database (2009-); Sear, Roman Architecture (1983); RCHME, Revised Thesaurus of Architectural Terms (1989); Harris, Illustrated Dictionary of Historic Architecture (2013); 世界建築經典圖鑑 338; 智慧藏百科全書網 May 2, 2012 [etc.]

Scope Note:

Monumental structures containing at least one arched passageway and erected to honor an important person or to commemorate a significant event. The basic form consisted of two piers connected by an arch ... **Lang:** (en)
Contrib: GCI; VP **Source:** RCHME, Revised Thesaurus of Architectural Terms (1989); Sear, Roman Architecture (1983); Encyclopedia Britannica Online (2002-) accessed 30 April 2017

具有一個以上拱形通道的紀念性建築物 · 用於向偉人致敬或紀念重大事件 · ...

Lang: (zh, Chinese (traditional)) **Contrib:** AS **Source:** TELDAP database (2009-)

Oorspronkelijk in de Romeinse tijd vrijstaande poorten of bogen... **Lang:** (nl)
Contrib: RKD, AAT-Ned **Source:** Van Dale groot woordenboek (1994); AAT-Ned (1994-)

Monumentalbau, der mindestens einen bogenförmigen Durchgang... **Lang:** (de)
Contrib: IfM-SMB-PK **Source:** IfM Berlin

Equivalence Relationship

- The Equivalence Relationship refers to the links between terms in the same record
- The Getty vocabularies strive for *true synonymy*, which is the characteristic of terms or names having meanings that are identical or as nearly identical as is possible
- Enforcing true synonymy increases precision in indexing and retrieval
- Terms or names that refer to a similar or related concept are recorded in separate records, and linked through associative or hierarchical relationships
- In the AAT example for *triumphal arches*, the related concept *memorial arches* is recorded in a broader context record, linked to the record for *triumphal arches* rather than being included in the same record

AAT_ID: 300132869

Terms:

- **triumphal arches** [1000007003] **Qual:** (memorial arches)
Pref: pref **Type:** D **Lang:** (en) **Con.:** FDA, GCI, VP
- **triumphal arch** [1000290974] **Qual:** (memorial arch)
Type: ALT **Lang:** (en) **Con.:** FDA, VP
- **凱旋門** **Qual:** (紀念性拱門) [1000545314]
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Con.: AS
- **kai xuan men** [1000545315] **Lang:** (zh, Chinese (transliterated Pinyin without tones)) **Con.:** AS
- **k'ai hsüan men** [1000545317]
Lang: (zh, Chinese (transliterated Wade-Giles)) **Con.:** AS
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Type: D **Lang:** (de) **Con.:** IfM-SMB-PK
- **Triumphbogen** [1000603580] **Qual:** (Ehrenbögen)
Lang: (de) **Con.:** IfM-SMB-PK
- **archi trionfali** [1000131380]
Type: D **Lang:** (it) **Con.:** ICCD
- **arcos de triunfo** [1000415271]
Type: D **Lang:** (es) **Con.:** CDBP-DIBAM
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- **arcs de triomphe** [1000777382] **Type:** D **Lang:** (fr) **Con.:** AAT-AD
- **arc de triomphe** [1000777381] **Lang:** (fr) **Con.:** AAT-AD

Equivalence Relationship

- Information associated with the terms

AAT_ID and Term IDs

Term

Term type (D,ALT, UF)

Qualifier

Language

Contributor

Sources

Term preferences: for record,
contributor, language, source

AAT_ID: 300132869

Terms:

· **triumphal arches** [1000007003] **Qual:** (memorial arches)

Pref: pref **Type:** D **Lang:** (en) **Con.:** FDA, GCI, VP

· **triumphal arch** [1000290974] **Qual:** (memorial arch)

Type: ALT **Lang:** (en) **Con.:** FDA, VP

· **凱旋門** **Qual:** (紀念性拱門) [1000545314]

Type: D **Lang:** (zh, Chinese (traditional)) **Con.:** AS

Equivalence Relationship

AAT_ID: 300132869

Terms:

- **triumphal arches** [1000007003] **Qual:** (memorial arches)
Pref: pref **Type:** D **Lang:** (en) **Con.:** FDA, GCI, VP
- **triumphal arch** [1000290974] **Qual:** (memorial arch)
Type: ALT **Lang:** (en) **Con.:** FDA, VP

- Links via the Record ID, Term ID
- Also to outside resources
 E.g., AATA and LOC



Contributors and Sources

triumphal arches (memorial arches).....	[GCI Preferred, FDA Preferred, VP Preferred]
.....	AATA database (2002-) 129984 checked 26 January 2012
.....	Brilliant, Roman Art (1974) Index
.....	Candidate term Candidate term - ADAG - 10/1985
.....	CDMARC Subjects: LCSH (1988-)
.....	Cobblestone, ed., World Architecture (1966) Glossary
.....	Harris, Historic Architecture Sourcebook (1977)
.....	Library of Congress Authorities online (2002-) sh 85006535
.....	RCHME, Revised Thesaurus of Architectural Terms (1989)
.....	RILA, Subject Headings (1975-1990)
.....	Roberts, Construction Industry Thesaurus (1976)
.....	Webster's Third New International Dictionary (1961)

Equivalence Relationship

- In order to retain true synonymy
Homographs are recorded in separate records
- Distinguished by Qualifiers in displays

  **chancel arches**
(<arches by location or context>, arches, ... Components (hierarchy name)) [300001093]
arches, triumphal (church components)
triumphal arches (church components)

  **triumphal arches (memorial arches)**
(memorial arches, <monuments by form>, ... Built Environment (hierarchy name)) [300007003]
arches, triumphal (memorial arches)

Equivalence Relationship

- Authoritativeness of the Getty vocabularies is warranted by their accuracy and basis in scholarship: **Rembrandt van Rijn**
- Preferred = most commonly used names in published, scholarly or expert resources
- common names, historical names, nicknames commonly published misspellings, signatures, etc. are welcome variants
- Usually avoid misspellings or archival variants that are used in only one source and not relevant to searching outside the one resource
- In order to make them relevant and up-to-date in Linked Open Data, we experimented with the *Local Use* flag, newly employed in ULAN for contributions from the Getty's Provenance Index
- But not a scalable solution; better to retain a local authority and contribute to ULAN the names useful to a broader community

Rheinbrand (LU,U)
 Rhembrant (LU,U)
 Rhembrant van Rhyn (LU,U)
 Rhembrant Van-Rhyn (LU,U)
 Rhynbrandt (LU,U)
 Rienbraut (LU,U)

Rimbrans (LU,U)
Rimbrant (LU,U)
Rimbrant Van-Rhein (LU,U)
Rinbrant (LU,U)
Rinbraut (LU,U)
Rinebrand (LU,U)
Riombrach (LU,U)

LU = Local Use

Rinbraut (LU,U)
 Rinebrand (LU,U)
 Riombrach (LU,U)
 R. Rhyn (LU,U)
 R. van Ryn (LU,U)
 Rymbrand (LU,U)
 Rymbrandt (LU,U)
 Rymbrand Van Ryn (LU,U)
 Rymbrant (LU,U)
 Rymbrants (LU,U)
 Rymbrants Van Ryn (LU,U)
 Rynbrandt (LU,U)
 Rynbrand van Ryn (LU,U)
 Van Rhyn Rembrant (LU,U)
 Van-Ryn, dit Rembrandt (LU,U)
 Van-Ryn Rembrandt (LU,U)
 Van-Ryn Rembrant Fiammingo (LU,U)
 V. Rembrants (LU,U)
 Wan Rhin, o Rembrandt (LU,U)

For some ULAN records, there are hundreds of variants, many found in only one original inventory

Positioned at the bottom of displays and implementers are advised to ignore them

Hierarchical Relationship

- Hierarchical relationships are the broader and narrower (parent/child) relationships between two entities in a thesaurus
- genus/species = AAT *triumphal arches* is a **type of memorial arches**, under *monuments*, up the hierarchical tree to the *Objects Facet*
- whole/part = TGN *Machupicchu* is **part of Cuzco (region)**, which is **part of Peru**
- instance relationship = IA *Penance of Indra* is an **instance of <Hindu narratives>**

Hierarchical Relationships (polyhierarchical)

Objects Facet

- .. Built Environment (hierarchy name) (G)
- Single Built Works (hierarchy name) (G)
- single built works (built environment) (G)
- <single built works by specific type> (G)
- <single built works by function> (G)
- monuments (G)
- <monuments by form> (G)
- memorial arches (G)
- triumphal arches (memorial arches) (G)



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Hierarchical Relationship

- Links are maintained through preferred parents and also through non-preferred parents
- E.g., linking *triumphal arches* to *p'ai-lous* as siblings under *ceremonial gates*, as well as *memorial arches*



In Hanzhong, Shaanxi Province, China



In Munich, Germany

Hierarchical Relationships (polyhierarchical)

Objects Facet

Built Environment (hierarchy name)

Single Built Works (hierarchy name)

single built works (built environment)

<single built works by specific type>

<single built works by function>

gate structures

ceremonial gates

hongsalmuns

p'ai-lous

propylaea

toranas

torii

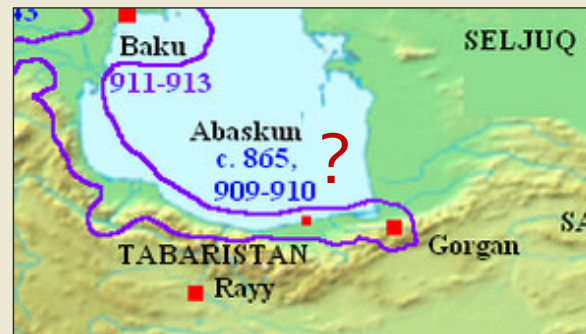
triumphal arches (memorial arches) [N]



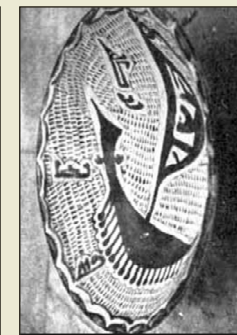
Hierarchical Relationship

- How to allow publication of data not fully resolved, due to incomplete information or state of scholarship?
- Hierarchical levels are also used to separate records for entities that are not fully identified
- Specific applicable level is not known = placed under broader context, lost & found
- E.g., *Abaskūn*, a trading port city on the Caspian Sea, known from 9th-century literary sources and believed to have been located somewhere in the area occupied by modern-day Iran, but scholars are not certain of exact location and which province

- [World](#) (facet)
- [Asia](#) (continent)
- [Iran](#) (nation)
- [<lost & found/Iran>](#) (miscellaneous)
- [Abaskūn](#) (lost settlement)



Map of documented Rus raids on Caspian Sea area



Artifact from northern Iran depicting probably a Rus ship

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Hierarchical Relationship

- *Unidentified named* ... levels are used in ULAN and CONA for entities that are not yet identified in full
- Example, in ULAN, people and firms contributed by Provenance Index, Witt, Getty Special Collections finding aids, etc.
- Some or many may be resolved and fully identified with research, expert crowd sourcing in future

Top of the ULAN list / hierarchy

- Unidentified Named People and Firms (ULAN facet)
- Aalen, V. (unknown artist)
- Aalst, C.J.K. van, Dr. (Dutch owner, fl. 1917-1953)
- Aalst, N.J. van (Dutch owner, fl. 1950s-1960s)
- Aalst, van (Unknown artist, Sale at Dordrecht, 1 November 1802)
- Aaron (British owner)
- Aaron et Cie. (French owner, fl. 1960s -1980s)
- Aav (artist, active 20th century)
- Aa, van der (Owner)
- A. Bacon (Unknown artist)
- Abady, Sheila (artist)

Associative Relationship

- Relationships between records that are closely related conceptually, but the relationship is not hierarchical because it is not whole/part, genus/species, or instance (RT for related term)
- In the Getty vocabularies, the relationship type is defined

	activity/ event/	attributes/	field/discipline [in Activities- Disciplines]	genus/ species [others, Living Organisms]	language [in Assoc Con]	locus/ setting [built work, settlement, feature, Built Environ-ment]	material [Mater- ials]	role [people, organizations in Agents; excluding living organisms]	style/ culture [religion, ideology, AC]
things/ [equi- ment, Object also art genre from AC]	<p>2427- 2428 things – produced by – activity/ event</p> <p>vase paintings (visual works) are produced by vase painting (image making); forgeries are produced by forging (copying)</p> <p>2431- 2432 things – are required for – activity/ event</p> <p>painting equipment is required for painting (image</p>	<p>5</p> <p>g</p> <p>in</p> <p>;</p>	<p>2418- 2419 field/ discipline – uses – things astronomy uses astronomical instruments; divination [discipline] uses divination objects</p>	<p>2836- 2837 things - [are] derived/made from - genus/species [or its parts] kākaku are derived/made from Phormium tenax (species); ostrich- egg cups are derived/made from Struthio camelus (species) 2852- 2853 genus/species -</p>	<p>2881- 2882 language - [is] reflected in – things Greek (language) is reflected in Greek alphabet; Sanskrit is reflected in Vedas</p>	<p>2208-2209 locus/ setting – locus setting for – things on-demand printing causes/ is required for on-demand publishing; preserving causes/is required for preservation</p>	<p>2501- 2502 things – made of/ require – material obsidian mirrors are made of/require obsidian; ivories (sculptures) are made of/require ivory 2507- 2508 things – produce/ process – material cotton (fiber) is produced/processed by cotton gins; groundwater is produced/processed by</p>	<p>2321- 2322 things – used by – role violoncellos are used by violoncellists; surveying instruments are used by surveyors 2325- 2326 things – created by – role drawings are created by craftsmen;</p>	<p>2551- things are pr – style Nasca I reflect, produc [culture reflects by Juda</p>

Associative Relationship

- E.g., AAT, reciprocal relationships
2427 things – **produced by** – activity/event
2428 activity/event – **produces** – things

AAT 300007868 suspension bridges
2427 [are] produced by
AAT 300418008 suspension construction (technique)

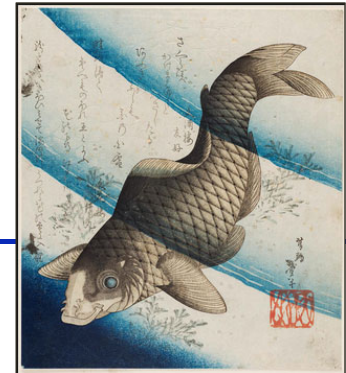
- In preparation for LOD releases, relationships that had been maintained by hand had to be corrected if logic was off or wrong relationship types were used



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Associative Relationship




- E.g., ULAN,
1101 person – *teacher of* – person
1102 person – *student of* – person

Japanese printmaker *Katsushika Hokusai* [was] **teacher of** *Katsushika Taito II*

- As with other relationships in vocabulary records, the relationship may be circumscribed with dates

ID: 500060426

Page Link: <http://vocab.getty.edu/page/ulan/500060426>

 **Katsushika Hokusai** (Japanese printmaker and painter, 1760-1849)

Relationship Type	Record Type	Name	Display Date	Start	End
1101 - teacher of	Person	Taito, Katsushika, II	ca. 1820-before 1830	1819	1830
1102 - student of	Person	Shunshō, Katsukawa	ca. 1778-1793	1777	1793

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The Getty
vocabularies are
linked to each other

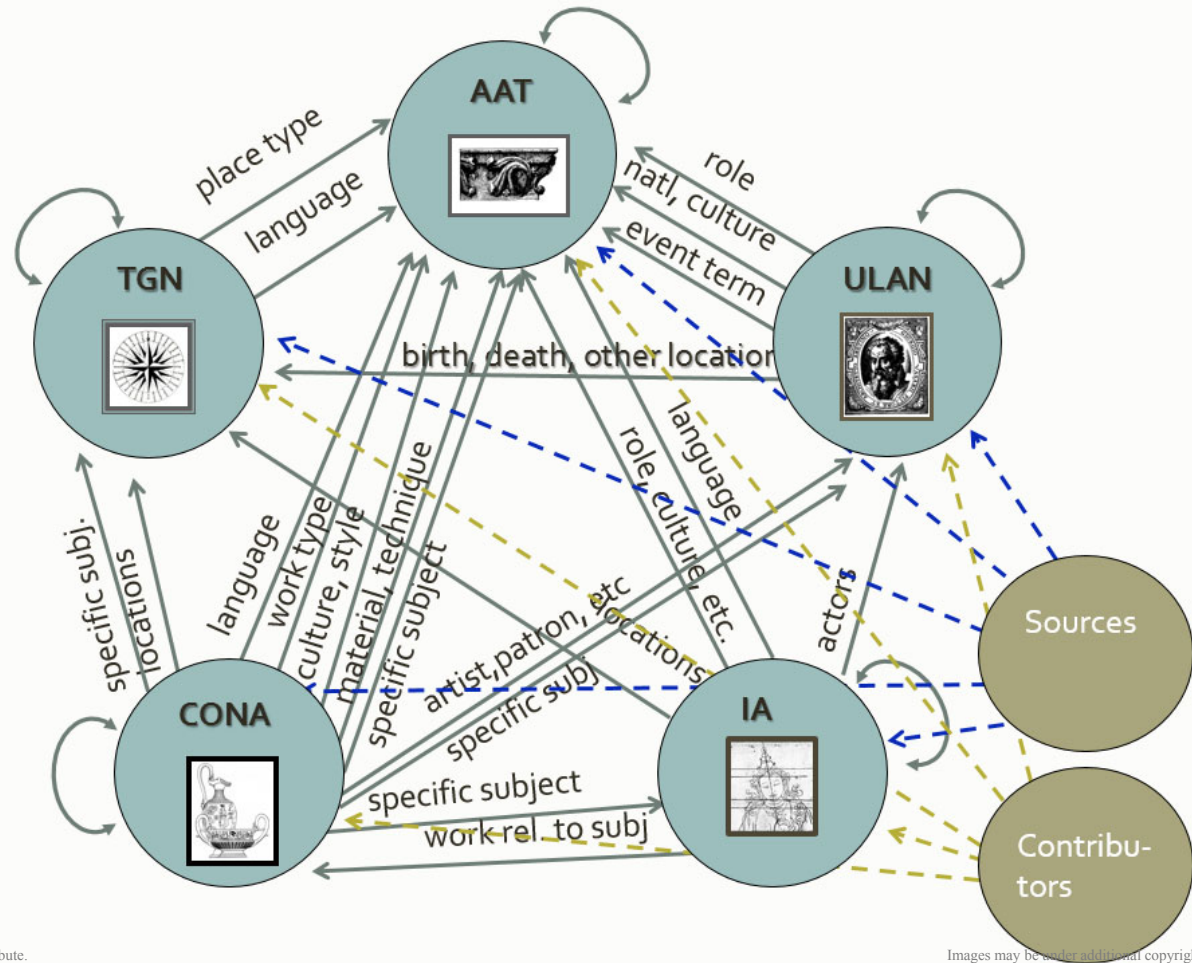
- Links between
Vocabularies

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Links between vocabularies

- Certain data within each Getty vocabulary record are controlled through links to values in other vocabularies
- From the beginning, even before linking between vocabularies was technically practical, fields were controlled by extensible lists drawn from the pertinent other vocabulary

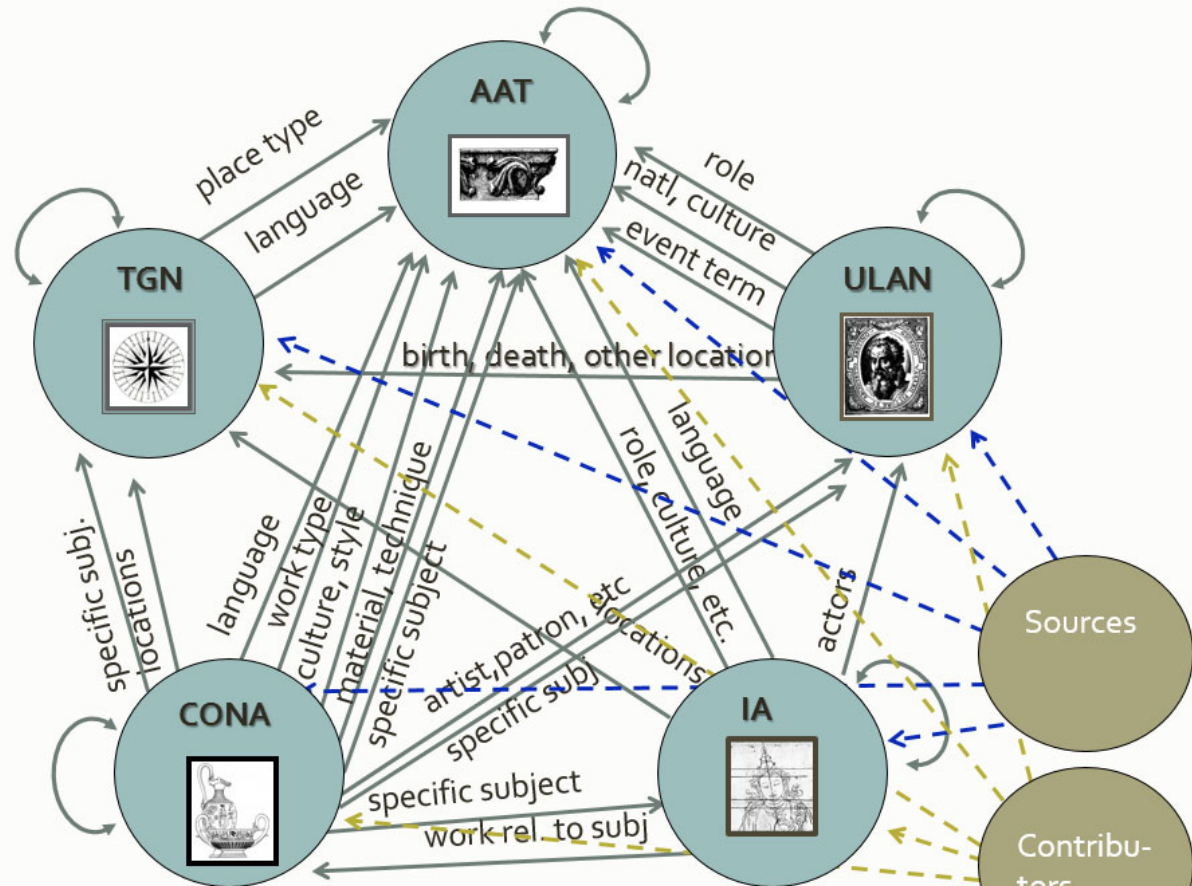


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Links between vocabularies

- E.g., roles within ULAN (e.g., *artist, watercolorist, portraitist, patron, emperor*) were controlled by lists containing terms from the *Agents Facet* in AAT
- Going from hand-made lists to LOD required cleaning up inconsistencies
- Links between vocabularies had to be logical and correct in LOD.



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Links between vocabularies

E.g, TGN *place types* were normalized and linked to AAT terms with release of LOD

TGN List Name: Place Types
 Search Method: New Search

Place Type ID	Place Type
84202	section
84203	barriada
84205	bidonville
84211	Chinatown
84214	Bezirk
84215	contrada
84216	sestiere
84217	rione
84218	urban district
84219	urban division
84221	frazione

AAT record

ID: 300108469
 Page Link: <http://vocab.getty.edu/page/aat/300108469>

Chinatowns (neighborhoods, residential)

Note: Chinese sections of large towns or cities

Terms:

- Chinatowns (**preferred**, C,U,English-P,D,U)
- Chinatown (C,U,LC,English,AD,U,SN)
- 中國城 (C,U,Chinese (traditional)-P,D,U,U)
- 唐人街 (C,U,Chinese (traditional),UF,U,U)
- 華埠 (C,U,Chinese (traditional),UF,U,U)
- zhōng guó chéng (C,U,Chinese (transliteration))
- zhong guo cheng (C,U,Chinese (transliteration))
- chung kuo ch'eng (C,U,Chinese (transliteration))
- chinezewijken (C,U,Dutch-P,D,U,U)
- chinezewijk (C,U,Dutch,AD,U,U)
- barrios chinos (residentes de ascendencia china)
- barrio chino (residentes de ascendencia china)



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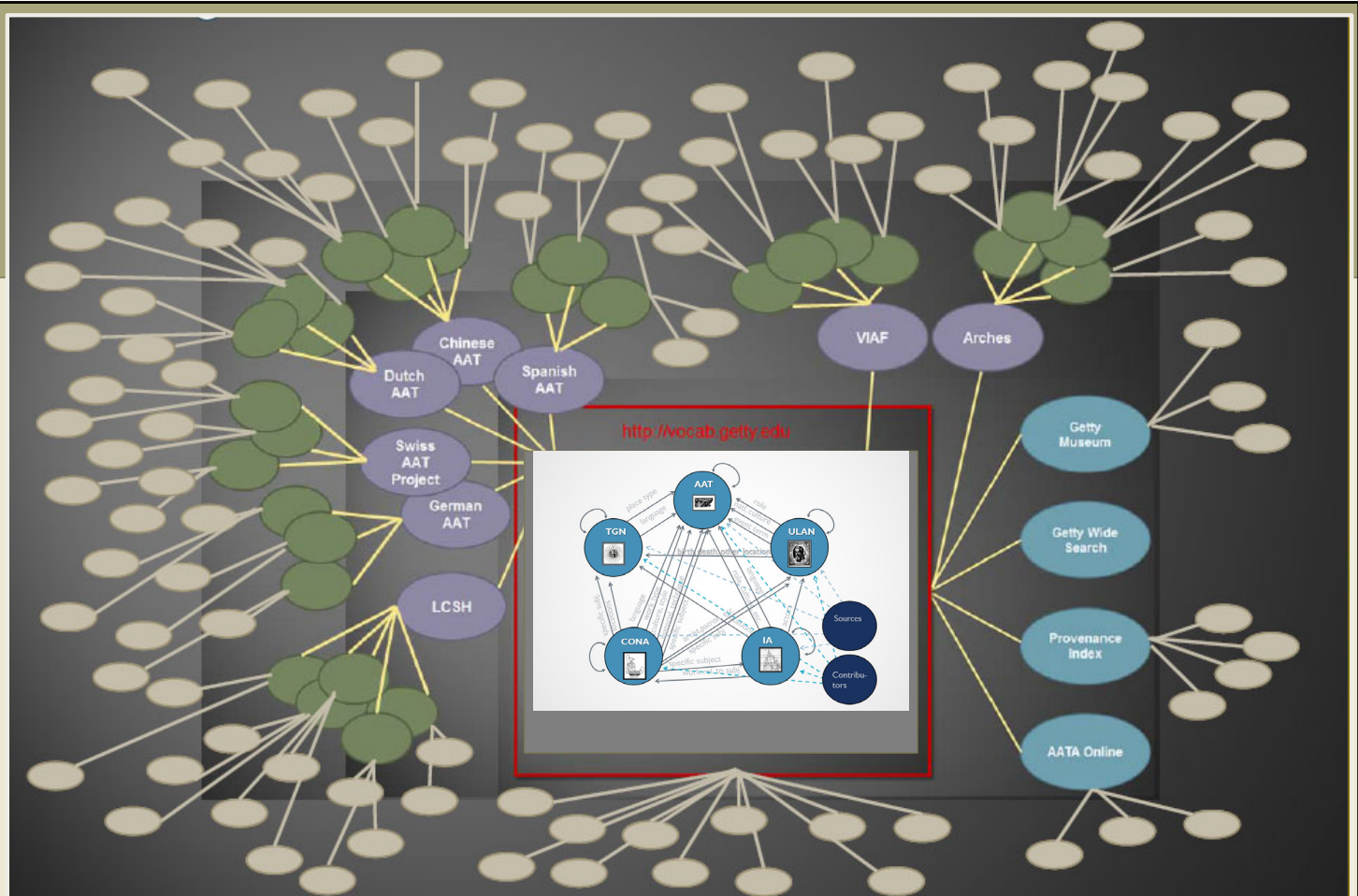
Images may be under additional copyright

Links to outside

- Links within each vocab and between vocabs

Goal:

- Relationships from the Getty vocabularies to other resources within the Getty and outside



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Background
on CONA

Update on CONA

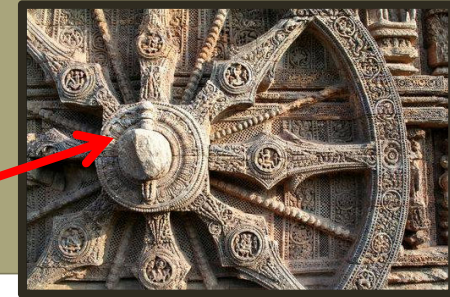
- About CONA

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CONA as Linchpin

linchpins
SN: Pins inserted through the end of an axletree to secure the wheel or other part from sliding off the axle

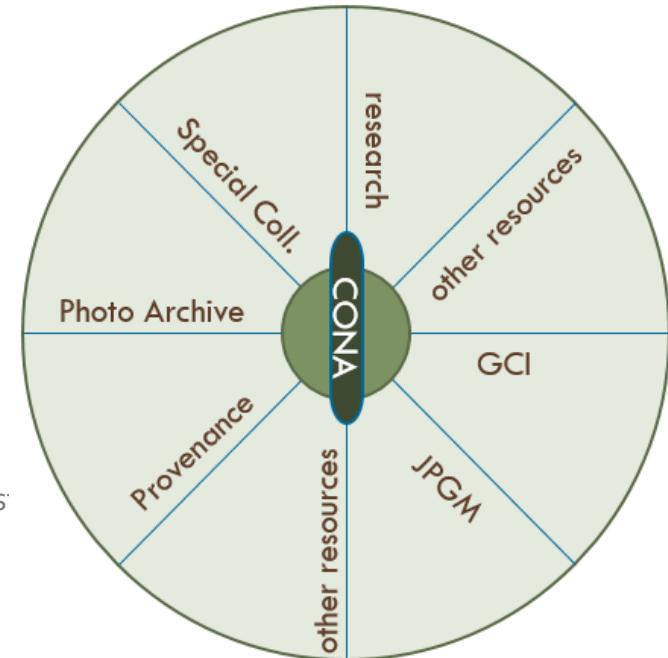


LINKS and RELATIONSHIPS

- **Thesaural relationships**, equivalence relationship (for titles and names), associative relationship (for links between works), and hierarchical relationship (for links between a whole work and its parts)
- **Powerful links and relationships** within a CONA record, between CONA records, and to the other Getty vocabularies are among the most attractive characteristics of the CONA model
- **Scope can include many types of works, built and unbuilt, historical and current, extant and destroyed**

How will CONA be used? Ideas for Getty use, and beyond

- During the last few years, we have been compiling in CONA thousands of records to represent many types of works and relationships in order to test hypotheses about content, required fields, and editorial guidelines
- Now it is time to analyze lessons learned and move forward



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Broadened Scope of CONA: Major subdivisions

Built Works

- **Structures or parts of structures** that are the result of conscious construction, are of practical use, are relatively stable and permanent, and are of a size and scale appropriate for—but not limited to—habitable buildings

Movable Works

- The **visual arts and other cultural works** that are of the type collected by art museums and special collections, or by an ethnographic, anthropological, or other museum, or owned by a private collector; Examples **include paintings, sculpture, prints, drawings, manuscripts, photographs, ceramics**, textiles, furniture, and other visual media such as frescoes and architectural sculpture, performance art, archaeological artifacts, and various functional objects that are from the realm of material culture and of the type collected by museums

Visual Surrogates

- **Images and three-dimensional works intended to be surrogates for the works depicted**, for example *study photographs*; does not include works considered themselves works of art (e.g., Julius Shulman)

Conceptual Works

- **Multiples: records for series as a concept**, conceptual records for multiples (made from same plate, negative, mold, etc.), and other similar records; physical works, such as prints that belong to a series, may be linked to conceptual record for the series (similar to FRBR “work”)

Unidentified Named Works

- **Works described in archival inventories or other sources**, but their identity is not established (e.g., Provenance Index inventories, or named architecture in finding aids)

At Getty: Possible implementations of CONA

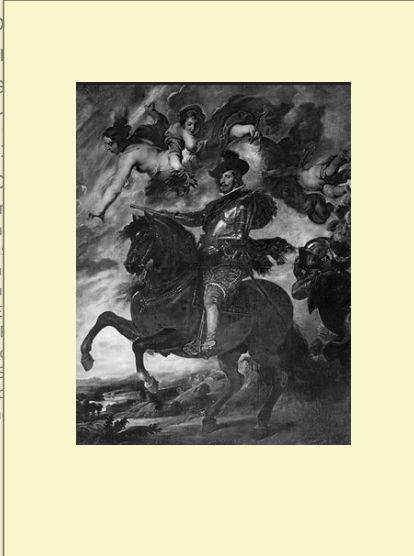
Works depicted in visual surrogates

- Relationship for subjects may be one way
- Associative Relationships are reciprocal

Surrogate in GRI Photo Archive

Velázquez et al copy in the Uffizi after Rubens

CONA_ID: 700008701 Class.: visual surrogate
 Titles: Equestrian Portrait of Philip IV
 Work Types: study photograph [300403973]
 Creation
 Creator
 a
 painter
 [50000
 Locati
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 General Su
 Specific Su
 E
 copy after
 List/Hierar
 Visual S
 Stud
 Sources an
 [VP]
 GRI Photo



specific
subject

CONA_ID: 700008694 Class.: paintings
 Titles: Equestrian Portrait of Philip IV
 starts;
 Firenze
 82775]
 00008695]
 st; 1628-

- Potential CONA project**
- CONA as resource for works depicted in visual surrogates or in other works
 - GRI Photo Archive is beginning a project to capture information about our massive Photo Archive collection
 - investigate possibly Pharos application ?
 (pharosartresearch.org, an international photo archive project)

lázquez et al copy in the Uffizi after Rubens

CONA_ID: 700008694 Class.: paintings
Titles: Equestrian Portrait of Philip IV

specific subject

stants;
Firenze

82775]

00008695]
st; 1628-

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Images may be under additional copyright

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 - GRI Photo Archive is beginning a project to capture information about our massive Photo Archive collection
 - investigate possibly Pharos application ?
(pharosartresearch.org, an international photo archive project)

Works depicted in visual surrogates

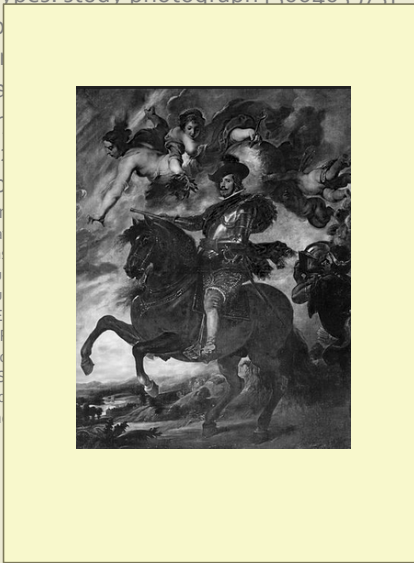
- Photograph in Photo Archive depicts a painting, which in turn is a copy after a lost painting
- Rubens' original painting was destroyed in the fire at the Royal Alcázar of Madrid in 1734

Surrogate in GRI Photo Archive

Velázquez et al copy in the Uffizi after Rubens

lost painting by Rubens

CONA_ID: 700008701 Class.: visual surrogate
 Titles: Equestrian Portrait of Philip IV
 Work Types: study photograph [300403973]
 Creation
 Creator
 a
 painter
 [50000
 Location
 Repository
 Display Ma
 Dimension
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 Specific Su
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 copy after
 List/Hierar
 Visual S
 Stud
 Sources an
 [VP]
 GRI Photo



specific
subject

CONA_ID: 700008694 Class.: paintings
 Titles: Equestrian Portrait of Philip IV
 [VP]
 Fossi, Uffizi Gallery (2001)
 GRI Photo Archives database (1974-)

depicts
depicted in

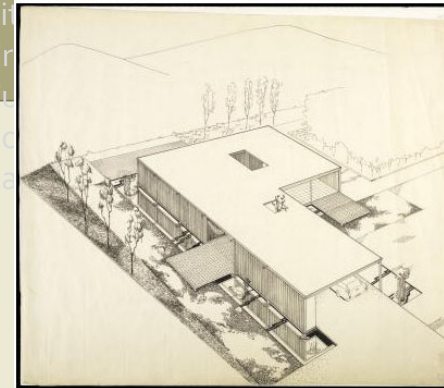
CONA_ID: 700008695 Class.: paintings
 Titles: Equestrian Portrait of Philip IV
 Filippo IV, re di Spagna
 Fossi, Uffizi Gallery (2001)
 Filippo IV, re di Spagna [VP]
 Fossi, Uffizi Gallery (2001)

Movable works are linked to architecture



CONA ID 70000090 Class. architecture
Work Type: house
 Title: Case Study House No. 21
 Title: Bailey House Title: CSH #21
 Creator: architect: Pierre Koenig
 Creation Date: 1956-1958; renovated 1998
 Dimensions: 1 story, 1320 square feet, 4 rooms and 2 baths, on a 110 x 160 foot lot
 Mat & Tech: steel frame and flat roof deck
 Current Location: Los Angeles (California, USA)
 Address Note: 34.116634 -118.391623; 038 Wonderland Park Avenue, Hollywood Hills, Los Angeles, 90046

preparatory for
 based on



CONA ID 700000120
 Work Type: architectural drawing

depicts
 depicted in



CONA ID 700008539 Work Type:

Movable works are linked to lost work

Lost or destroyed works
(ephemeral works)

Destroyed, ephemeral triumphal arch

CONA ID 700001288 Class.: architecture
Work Type: triumphal arch
 (memorial arch)
Title: Arc de Triomphe du Trône
 Location: Paris (France)
 Creator: based on designs by Charles Perrault (French architect, 1613-1688), built by Claude Perrault (French architect, physician, scientist, 1613-1688)
 Date: begun 1670, demolished 1716)
 Materials: stone and plaster
 Dimensions: unavailable
 General subject: architecture Type: isness
 Specific Subject: Louis XIV Extent: honoree ephemeral structure Extent: purpose

depicts
 depicted in

CONA ID 700001650
 Title: Arc de triomphe de Louïs XIV a la



CONA ID 700001650
 Title: Arc de Triomphe élevé à la Barrière

depicts
 depicted in

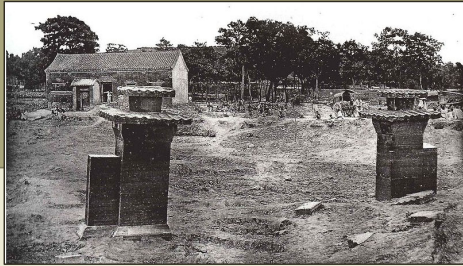


- Print from GRI and drawing from Paris linked to a record for the now-destroyed ephemeral work

Outside Getty: Possible implementations of CONA

Movable works are linked to lost work

- If leveraged as a research tool, CONA could link works that are not in the Getty collections



CONA_ID: 700009114 **Class.:** architecture | sculptures
Title: Wu Family Shrine
 武氏祠
Work Type: assemblage | shrines | pictorial stones
Location: Shandong province, China
Creator: various artists
Style/Period: Han Dynasty
Date: 206 BCE-211 CE
Materials: carved and engraved stone; masonry construction **Dimensions:** various dimensions
General Subject: history and legend | funerary
Specific Subject:
 Wu family (Chinese family) **Extent:** theme memorial **Extent:** purpose

specific subject

CONA_ID: 700009113 **Class.:** graphic arts
Title: Rubbing of stone relief from the offering shrines of Wuliangci **Flag:** exhibition
 Rubbing of stone relief from the offering shrines of Wuliangci of the Han dynasty: Traditional grouping Wu Liang Group 3
Flag: repository
Work Type: rubbing
Location: Art Gallery of New South Wales (Sydney, Australia)
Type: current **Rep.No.:** 163.1979.17
 Shandong province, China **Type:** creation
Creator: unknown Chinese **Date:** 1850
Materials: ink on paper, rubbing
General Subject: another work | history and legend
Specific: Wu Family Shrine **Extent:** work depicted | pavilion
Note: This scene occurs on the south wall of the Wu Liang shrine. The focal scene of this slab is the pavilion with

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Virtually reconstructing disassembled works

- Reconstructed disassembled works held in different repositories or locations
- Common with manuscripts, paintings, sculpture, architecture, etc.
- May be varying opinions on reconstructions

..... Asciano Altarpiece
..... Archangel Gabriel [N]
..... Assumption of the Virgin [N]
..... Saint Agatha and Saint Lucy [N]
..... Saint Augustine [N]
..... Saint Jerome [N]
..... Saint Michael the Archangel [N]
..... Saint Monica praying for the conversion of her son Augustine [N]
..... Saint Nicholas of Bari [N]
..... Virgin Annunciate [N]

Proposed reconstruction of Asciano Altarpiece



CONA ID 700008554 Proposed reconstruction of Matteo di Giovanni's Asciano Altarpiece by Rachel Billinge. Extant panels are now in National Gallery London, Siena, Asciano, Villa I Tatti, Esztergom, Altenburg, Rhode Island, and Private Collections.

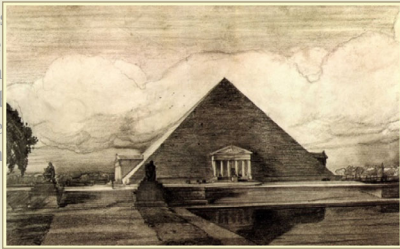
Designs linked to unrealized work

- Group of drawings and other documents linked to the work they describe, but which was never built

JR Pope's designs for pyramidal Lincoln Memorial

CONA ID 700008523

Class:
Title:
Creation
Attribution:
Date:
Location:



designs for



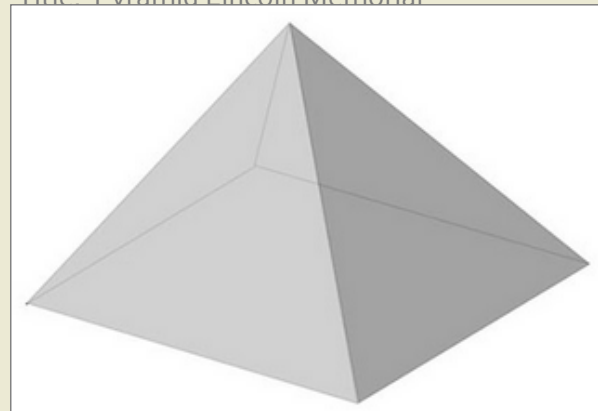
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Architecture never built

CONA ID 7000xxxx

Class: architecture Work Type: unrealized work

Title: Pvramid Lincoln Memorial



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Linking for conceptual relationships

Conceptual works

Multiples, Series of works

CONA ID 700000091 Cat. Level: Item Class:
prints Work Type: color woodcut
Title: G...
Katsusi...
publishe...
century...
Mat & T...
on pape...
Dimens...
inches)...
Subject...
wave...
Current...
New Yo...

Single print cataloged as an item



- Print at a museum or special collection is cataloged as an item
- Unique physical item is linked to conceptual record = print as a concept, which in turn is linked to a series

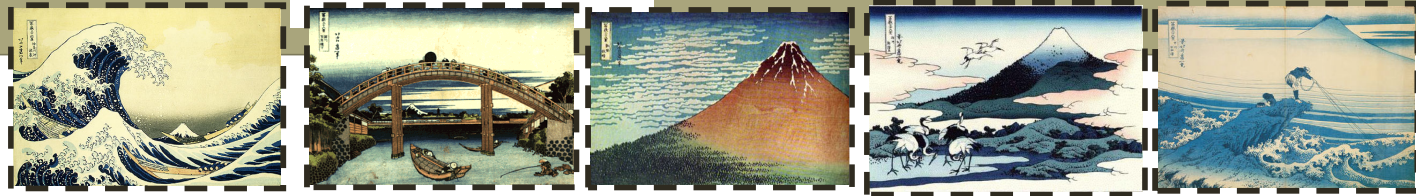
Linking for conceptual relationships

Conceptual works

Multiples, Series of works

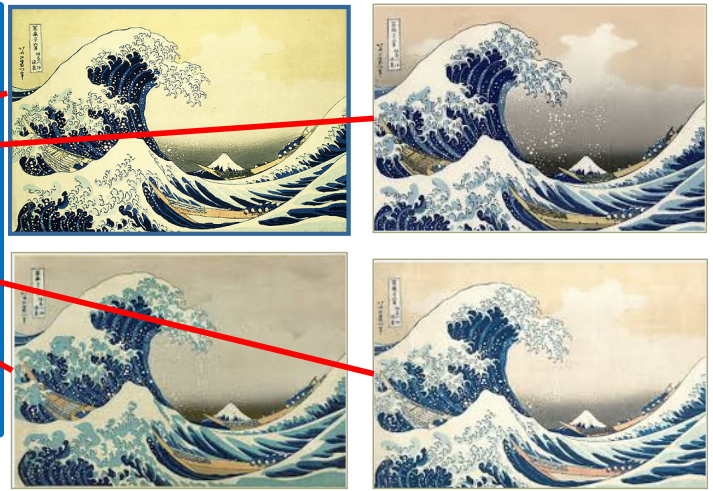
Other items were made from the same blocks; a conceptual record for the print may link them all together; and to a series

--- series ---



- Thirty-six Views of Mount Fuji (First Series)
- Great Wave off Kanagawa (multiple)
- L'arc de la vague au large de Kanagawa [N]
- The Great Wave [N]
- The Great Wave off Kanagawa [N]
- The Great Wave off Kanagawa [N]
- Under the Wave off Kanagawa [N]
- Under the Wave off Kanagawa [N]
- Under the Wave off Kanagawa [N]
- Under the Wave off Kanagawa [N]

Current Location: Metropolitan Museum of Art, New York, New York, USA, JP1547



Unique physical item is linked to conceptual record for the print as a concept, which in turn is linked to a series

CONA can link the work record to Getty vocabularies

CONA links work records to the Getty vocabularies



CONA ID: 70002850
Catalog Level item
Classification vessels
Work Type vase
Title Blue and White Glazed Globular Vase
 明 永樂 青花龍紋天球瓶
Creator unknown Chinese
Creation Date 1403/1424 CE
General Subject utilitarian objects
Specific | animal | dragon
Current Location National Palace
 Museum (Taipei, Taiwan)
Repository Number: 012547N000000000
Dimensions 42.9 cm high and 9.7 cm
 diameter; foot diameter 15.8 cm
Mat & Tech: blue and white porcelain
 | porcelain (material) | blue-and-white (ceramic glaze)

AAT

ULAN

AAT
TGN
ULAN
CONA
IA

ULAN

AAT

AAT record

ID: 300132254

vases (vessels (containers), <containers by form>, ... Furnishings and Eq

Note: Vessels of varying shape and size but which are usually taller than they form and use. In modern usage, typically refers to vessels for displaying flowers. Often refers to any ceramic or metal vessel in a range of shapes and used to hold substances.

Terms:

vases (preferred, C, U, English, AD, U, S) (French-P, D, S)

vase (C, U, English, AD, U, S) (French, AD, U, S)

花瓶 (C, U, Chinese (Simplified)-P, UF, U, U) (Pinyin)-P, UF, U, U)

陶瓶 (C, U, Chinese (Simplified)-P, UF, U, U) (S)-P, UF, U, U)

huā píng (C, U, Chinese (Simplified)-P, UF, U, U)

hua ping (C, U, Chinese (Simplified)-P, UF, U, U)

hua p'ing (C, U, Chinese (Simplified)-P, UF, U, U)

vazen (C, U, Dutch-French)

vaas (C, U, Dutch, AD, U, S)

vasos (C, U, Spanish (S)-P, UF, U, U) (Name) (G)

vaso (C, U, Spanish, AD, U, S)

CONA merges information from multiple sources in one record

CONA ID: [700002923](#)

Catalog Level item Classification architecture

Work Type building complex | temple

Title/Name Temple of Heaven (en)

Tian Tan (zh-tr) | T'ien-t'an (zh-tr) | 天坛 (zh)
| 天壇 (zh) | 천단 (ko)

Creator [display] first built by Ming Chengzu (1360-1424);
extended by Ming Shizong (1507-1567); renovated by Qianlong
(1711-1799)

Creation Date [display]: 1530, during Ming dynasty

General Subject architecture **Type:** isness

Specific Earth [TGN 7030638] **Extent:** dedication

Current Location Beijing (Beijing Shi (municipality), China)
(nation) **Address Note:** 39°57'05"N 116°24'36"E

Dimensions [display] entire complex: 237 hectares

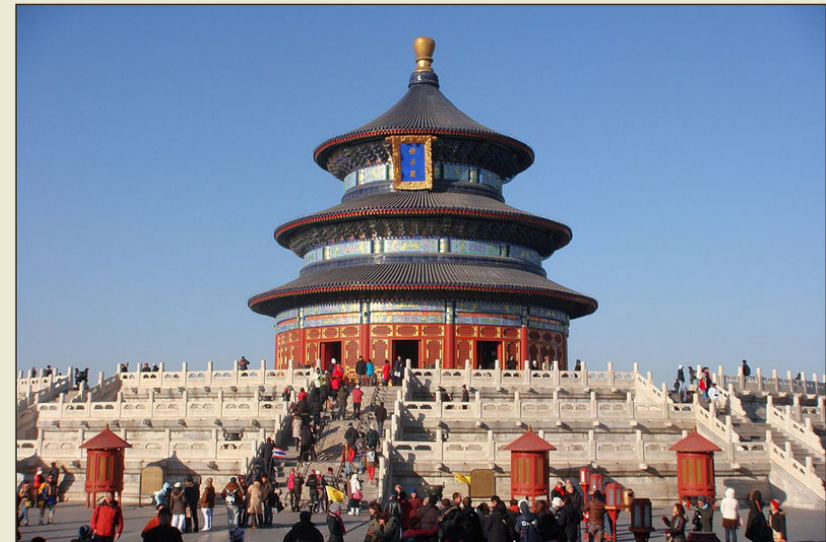
Mat & Tech [display] wood and stone [wood AAT 300011914 |
stone AAT 300011176]

Style: Chinese [AAT 300018322] | Taoist [AAT 300143666]

Contributors [JPGM](#) [VP](#) [GRIPSC](#) [BWR](#)

Sources Built Works Registry [BWR3792244](#); Library of Congress
Authorities online (2002-) [n2011019454](#); Fodor's Travel (2016); J.
Paul Getty Museum, collections online (2000-); Great Buildings
Online (1997-)

- Multiple contributors data merged in one record
- CONA ID uniquely identifies the work in CONA
- Links to other IDs, such as LOC, VIAF, BWR



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CONA captures multiple opinions

CONA ID: [70000178](#)

Catalog Level item

Classification paintings

Work Type panel painting | altarpiece

Title Adoration of the Magi

[Adorazione dei Magi \(repository title\)](#)

Creator Bartolo di Fredi (Sienese painter, active by 1353, died 1410)

Creation Date [display]

[1380s/1390s; some scholars date it ca. 1400 or later](#)

execution Start Date 1380 End Date 1399

alternative date Start Date 1395 End Date 1409

General Subject religion and mythology | human figures

Specific | Adoration of the Magi **Extent:** foreground | Siena | horses | Holy Family | gold | frankincense | myrrh | Journey of the Magi **Extent:** background | king | deity | death | Epiphany | Three Ages of Man

Current Location Pinacoteca Nazionale di Siena (Siena, Italy);

Repository No [no. 104](#)

Dimensions 195 x 158 cm (76 x 61 5/8 inches)

Mat & Tech tempera on panel

Contributors BHA VP CD PNS GRI-PA

Sources Pinacoteca Nazionale di Siena (2002-); Boucher and Fiorini, Magi Reconstructed (2012); Cole, Sienese Painting (1985); Freuler, Bartolo di Fredi (1994); Harpring, Bartolo di Fredi (1992)

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- E.g., Date assigned by the repository is not agreed upon by all scholars, both are recorded in CONA



Images may be under additional copyright

Links back to repository, if any

CONA ID: [700000178](#)

Catalog Level item

Classification paintings

Work Type panel painting | altarpiece

Title Adoration of the Magi

[Adorazione dei Magi \(repository title\)](#)

Creator Bartolo di Fredi (Sienese painter, active by 1353, died 1410)

Creation Date [display]

[1380s/1390s; some scholars date it ca. 1400 or later](#)

execution Start Date 1380 End Date 1399

alternative date Start Date 1395 End Date 1409

General Subject religion and mythology | human figures

Specific | Adoration of the Magi **Extent:** foreground |

Siena | horses | Holy Family | gold | frankincense | myrrh |

Journey of the Magi **Extent:** background | king | deity |

death | Epiphany | Three Ages of Man

Current Location Pinacoteca Nazionale di Siena (Siena, Italy);

Repository No [no. 104](#)

Dimensions 195 x 158 cm (76 x 61 5/8 inches)

Mat & Tech tempera and gold leaf on panel

Contributors BHA VP CD PNS GRI-PA

Sources Pinacoteca Nazionale di Siena (2002-); Boucher and Fiorini, Magi

Reconstructed (2012); Cole, Sienese Painting (1985); Freuler, Bartolo di Fredi (1994);

- Collocates IDs for this unique work
- Link back to site, to LOD, or other resource for the same work



PNS PINACOTECA NAZIONALE DI SIENA

Bartolo di Fredi - noto a Siena dal 1353 al 1410
(Pala d'altare) Adorazione dei Magi
Ottavo/nono decennio del Trecento
tempera e foglia d'oro su tavola

Like

Patricia Harpring

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CONA links to depicted subject

CONA adds subject access to work records
Controlled by AAT, ULAN, TGN, CONA, and IA

- As known and verified in a recent survey by OCLC, subject access is a) missing from most museum records, and b) one of the most important fields for retrieval by users
- CONA could fill that gap by providing subject indexing
- Automated plus editor vetted; mining titles, etc.; experts and expert crowd sourcing

IA ID **1000045**
Names
• Xibalba
• Place of Fear

ULAN ID **500329587**
Names
• Unen Bahlam
• Baby Jaguar

AAT ID **300191778**
Terms
• skeleton [English]
• beendergestel [Dutch]
• esqueleto [Spanish]
• squelette [Italian]
• 骨架 [Chinese]

CONA ID **70000012** Class: Pre-Columbian art

General Subject:
• religion and mythology [General Subject ID 31801]

Specific Subjects:
• Xibalba (Mayan underworld) [IA 1000045]
• Baby Jaguar (Mayan king, ruled ca. 317 BCE) [ULAN 500329587]
• man (male human) [AAT 300025928]
• skeleton (animal component) [AAT 300191778]
• ax (weapon) [AAT 300024664]
• altar [AAT 300003725]
• death [AAT 300151836]
• celebration [AAT 300152441]



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CONA links parts to whole & context

- Whole/Part Relationships
- E.g., individual caves in the complex of caves and built recessions; also linked to TGN site
- Work inside each cave could be cataloged separately and linked



Title: Mogao Caves Complex
Title: Grottes de Mogao
Title: 莫高窟
Record Type: built work **Catalog Level:** complete
Classification: architecture
Work Type: complexes (buildings)
Creator: various artists
Date: 4th to the 14th century TGN
Location: Mogao caves (ancient site) (Dunhuang, China)
Desc. Note: 492 cells and cave sanctuaries in Mogao are famous for statues and wall paintings, spanning 1,000 years of Buddhist art.

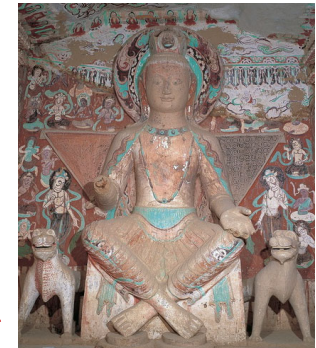


Broader Context: Mogao Caves Complex
Relationship Type: Whole/part



Title: Mogao Cave 275
 a Built Work?

architectural context is
 Associative Relationship



Title: Buddha from Cave 275
 a sculpture ("Movable" Work)?

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CONA can record deaccessioned works Works in exhibitions

Works deaccessioned and deleted from repository database

Works in exhibitions, not owned by repository hosting the exhibition

**JPGM could record deaccessioned works in CONA
No longer in their collections management system**

Can also record works at a repository for exhibitions

formerly at the J. Paul Getty Museum

CONA
Title: C
Current
Locati
Discov
Date: 8
Materi
Dimen



loaned to JPGM from Kröller-Müller Stichting (Otterlo, Netherlands)

CONA
ID: 70
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What comes next?

• Conclusion

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Conclusion

- The Getty vocabularies are constructed to allow their use in linked data
- Releasing the Getty vocabularies as Linked Open Data can have a transformative effect on the discipline of art and architectural history in general
- **Digitizing data does not necessarily ensure that it will be usable or used**
- We will continue to investigate methods of optimizing and exploiting the power of the Getty vocabularies, working with the broader user community to improve possibilities for research and discovery of visual arts information across disciplines



THE GETTY

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Getty Vocabulary Program

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