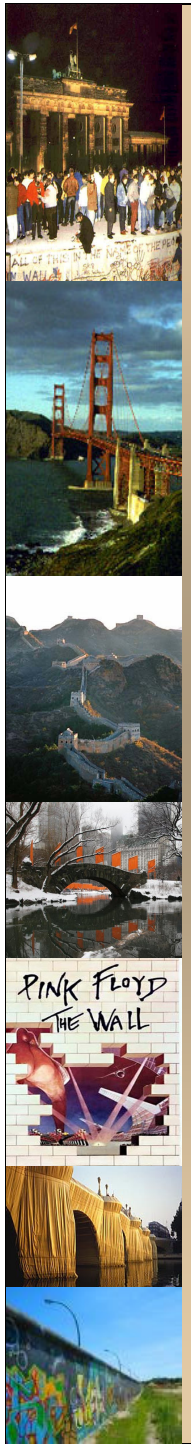
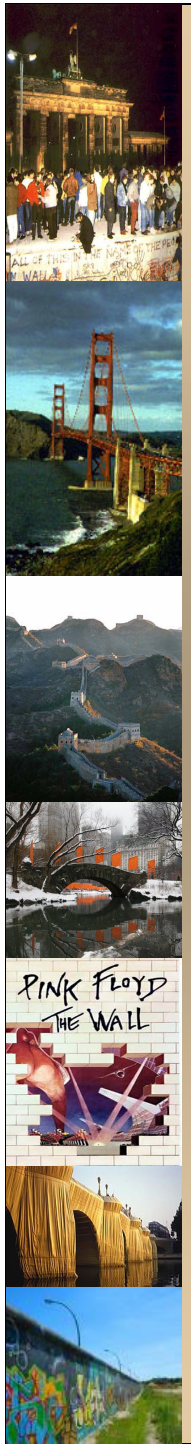
Steps towards a Culture Web

Tumbling Walls & Building Bridges

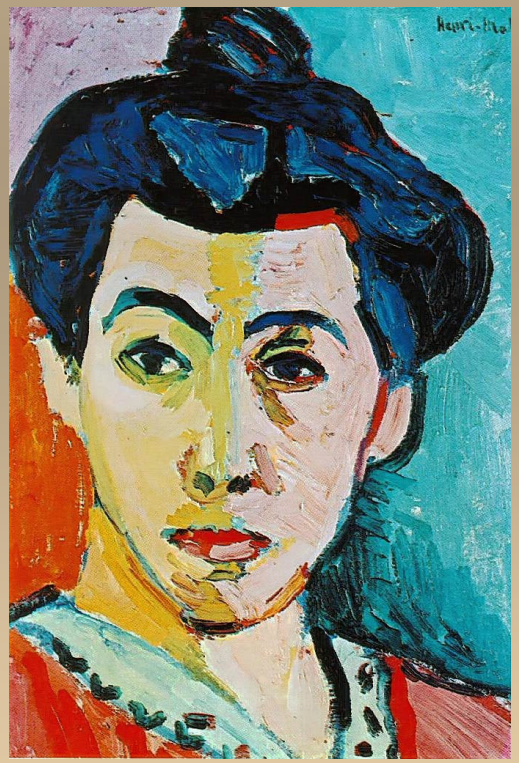


Interoperability: tearing down the walls between collections

- Musea have increasingly nice websites
- But: most of them are driven by stand-alone collection databases
- Data is isolated, both syntactically and semantically
- If users can do cross-collection search, the individual collections become more valuable!

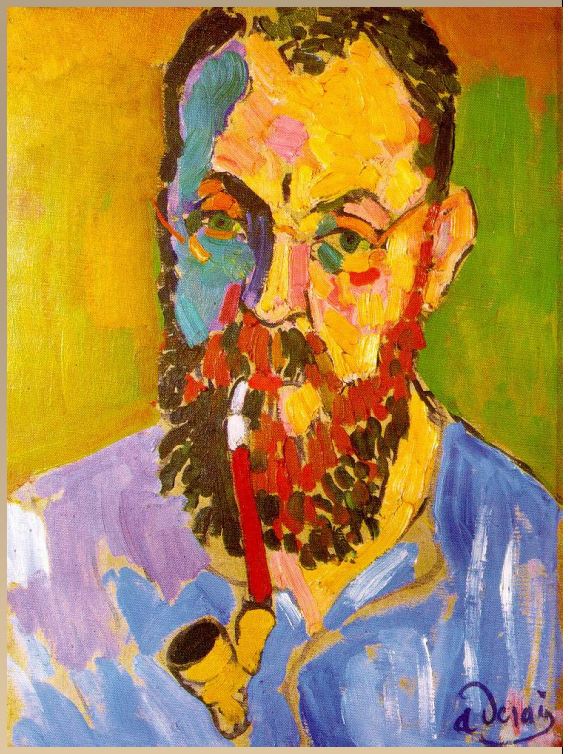


The Web: "open" documents and links



URL

Web link



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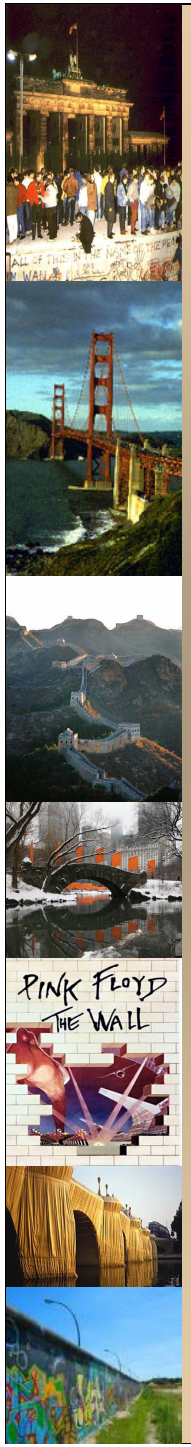
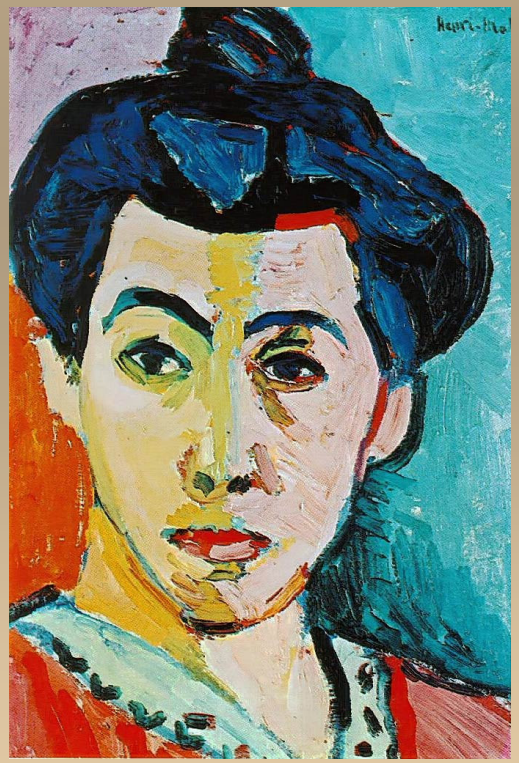


The Semantic Web: "open" data and links

Painting
"Green Stripe (M^me^ Matisse)"
Royal Museum of Fine Arts, Copenhagen



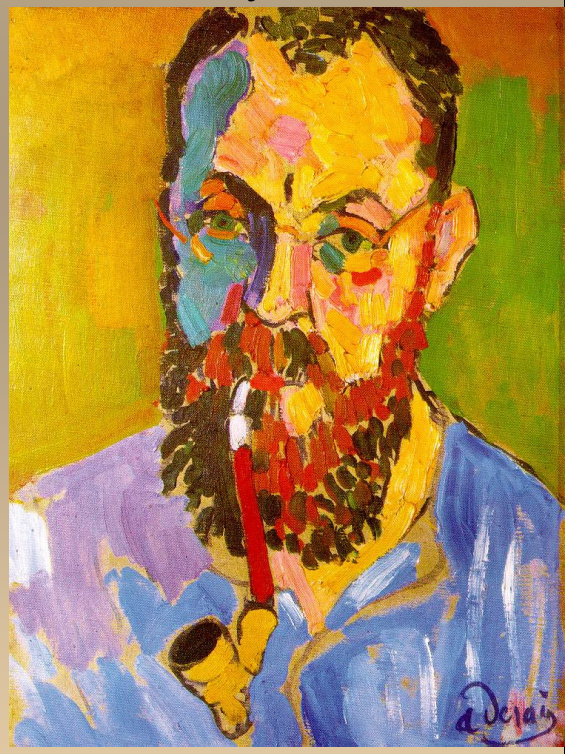
URL

creator

Dublin Core

Web link

Painter
"Henri Matisse"
Getty ULAN



URL

http://www.getty.edu/vow/ULANFullDisplay?find=matisse&role=&nation=&prev_page=1&subjectid=5000173

Research

Research Home ▸ Conducting Research ▸ Union List of Artist Names ▸ Full Record Display

Union List of Artist Names® Online
Full Record Displa

New Search Previous Page

Click the icon to view th

ID: 500017300

Matisse, Henri (Frenc

Names:
Matis
Henr
Matis
Matis

Nationa:
Frenc

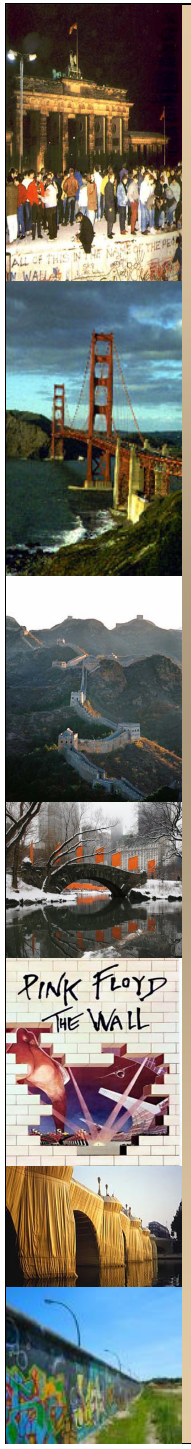
Roles:
artist
painte
printn
sculpt
desig
writer

Related People or Corporate Bodies:
apprentice was .... Jolin, Einar 1911-1913
..... (Swedish painter, 1890-1990) [500014093]
parent of .... Duthuit, Marguerite Matisse
..... (French painter, born ca. 1900) [500075813]
patron was .... Barnes, Dr. Albert C.
..... (American collector, 1872-1951) [500057478]
student of .... Cormon, Fernand
..... (French painter and teacher, 1845-1924) [500115385]
student of .... Moreau, Gustave
..... (French painter, 1826-1898) [500115776]

Roles:
artist (preferred)
painter
printmaker
sculptor
designer
writer

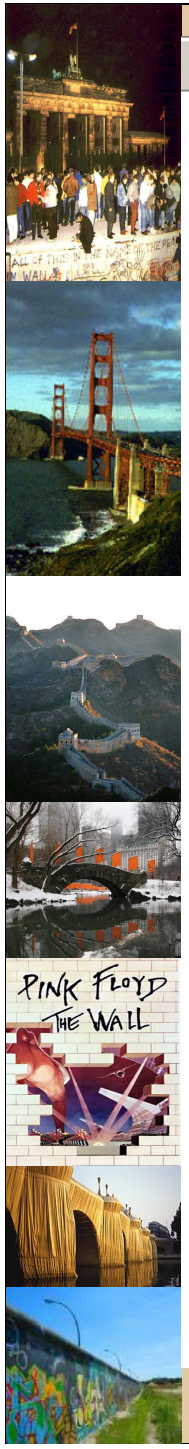
Gender: male

Birth and Death Places:
Born: Le Cateau-Cambrésis (Nord, Nord-Pas-de-Calais, France) (inhabited place)
Died: Nice (Alpes-Maritimes, Provence-Alpes-Côte d'Azur, France) (inhabited place)



Levels of interoperability

- Syntactic interoperability
  - using data formats that you can share
  - XML family is the preferred option
- Semantic interoperability
  - How to share meaning / concepts
  - Technology for finding and representing semantic links



http://www.w3.org/2004/02/skos/

W3C Technology and Society domain | Semantic Web Activity | RDF

Simple Knowledge Organisation System (SKOS)

SKOS Core | **SKOS Mapping** | **SKOS Extensions**

This page: Specifications | RDF Vocabularies | Development

Nearby: SkosDev Wiki | Semantic Web Best Practices | Semantic Web Advanced Development | SemWeb IG | RDF | OWL

SKOS is an area of work developing specifications and standards to support the use of knowledge organisation systems (KOS) such as thesauri, classification schemes, subject heading lists, taxonomies, other types of controlled vocabulary, and perhaps also terminologies and glossaries, within the framework of the Semantic Web.

There are three RDF vocabularies under active development: SKOS Core | SKOS Mapping | SKOS Extensions. There is also the SKOS API, a web service API for interacting with a KOS datasource.

SKOS Specification Development

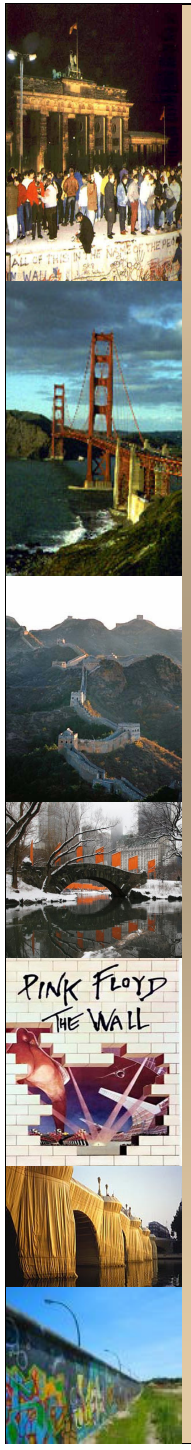
The following specifications are under development within the W3C Semantic Web Best Practices and Deployment Working Group:

- SKOS Core Guide
  2nd W3C Public Working Draft 2 November 2005. Alistair Miles and Dan Brickley eds. [press release]

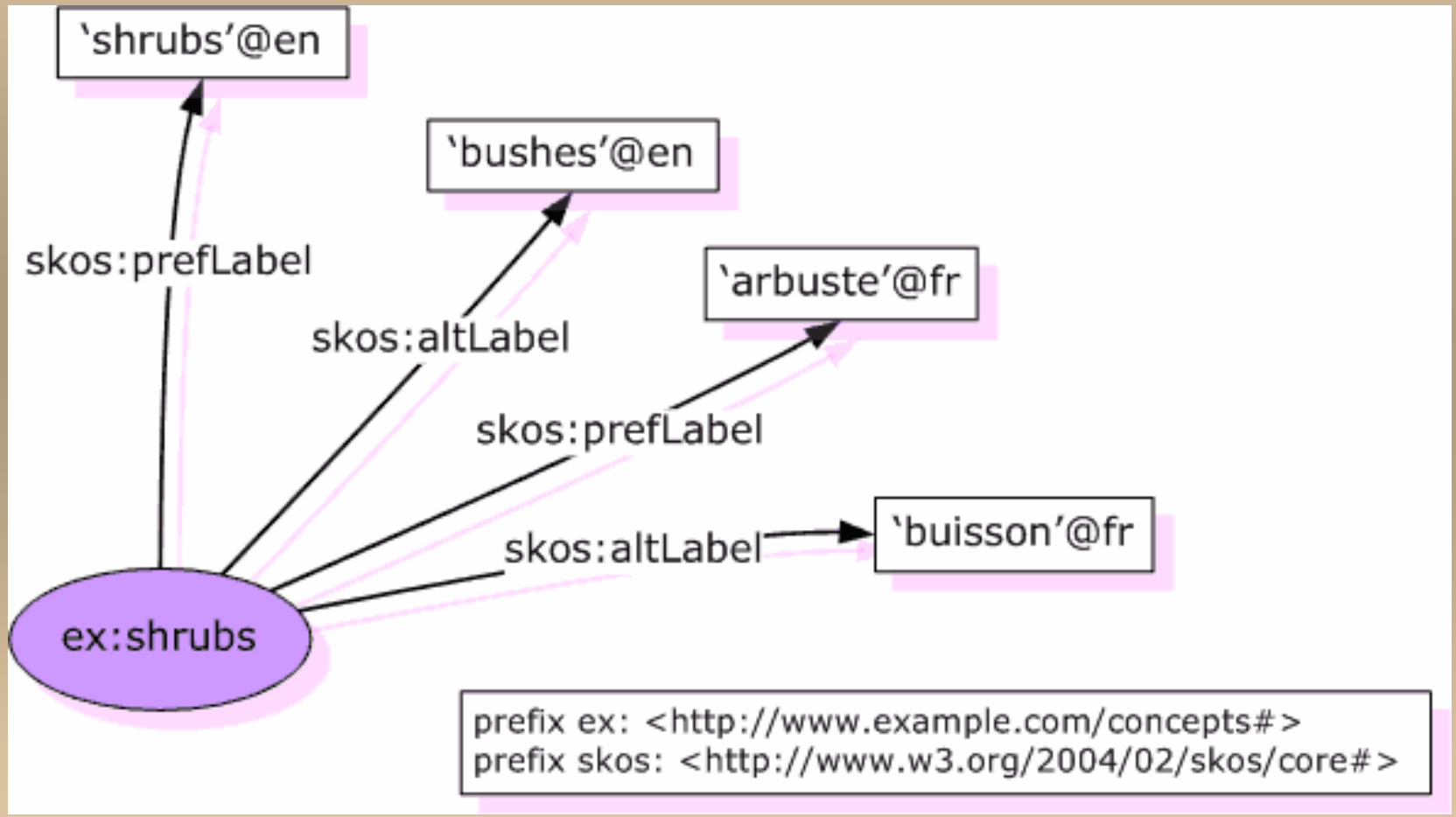
  This document is a guide using the SKOS Core Vocabulary, for readers who already have a basic understanding of RDF concepts. It is the authoritative guide to recommended usage of the SKOS Core Vocabulary at the time of publication.

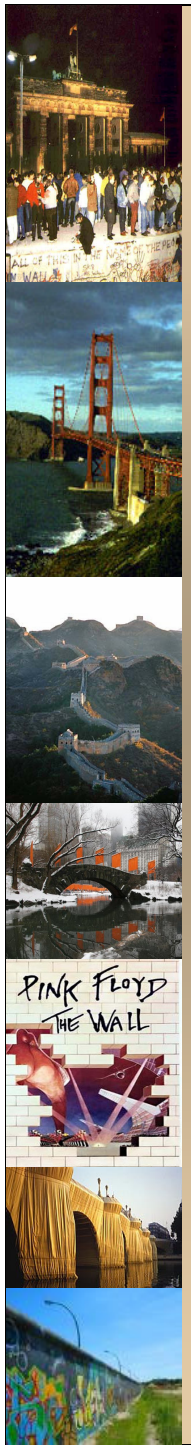
- SKOS Core Vocabulary Specification
  2nd W3C Public Working Draft 2 November 2005. Alistair Miles and Dan Brickley eds. [press release]

  This document gives a reference-style overview of the SKOS Core Vocabulary as it stands at the time of publication. It is the authoritative human-readable account of the SKOS Core Vocabulary at the time of publication. It also describes the policies for ownership, naming, persistence and change by which the SKOS Core Vocabulary is managed



Multi-lingual labels for concepts





http://nasataxonomy.jpl.nasa.gov/xm

Google

NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

+ Visit NASA.gov
+ Contact the NASA Curator

+ TAXONOMY TOP LEVEL FACETS | + FAQs | + NASA METADATA | – NASA TAXONOMY XML | + NASA XML PROJECT

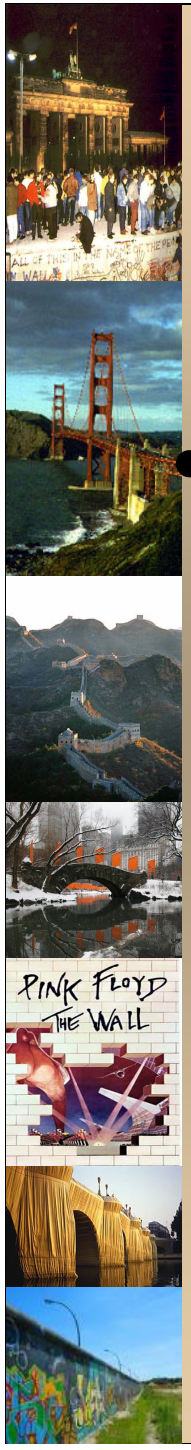
NASA Taxonomy - XML DTDs for Use with the NASA Taxonomy

Important Update Regarding the XML format of the NASA Taxonomy - Jan 9, 2007

The next version of the NASA taxonomy will be in the SKOS format.

The SKOS Core is a model and an RDF vocabulary proposed by the W3C for expressing the basic structure and content of concept schemes such as thesauri, classification schemes, subject heading lists, taxonomies, other types of controlled vocabulary.

The SKOS Core Vocabulary is an application of the Resource Description Framework (RDF), that can be used to express a

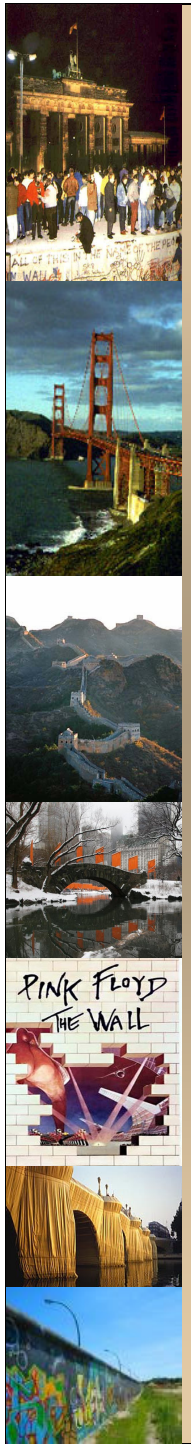


Principle 1: semantic annotation

- Description of web objects with “concepts” from a shared vocabulary

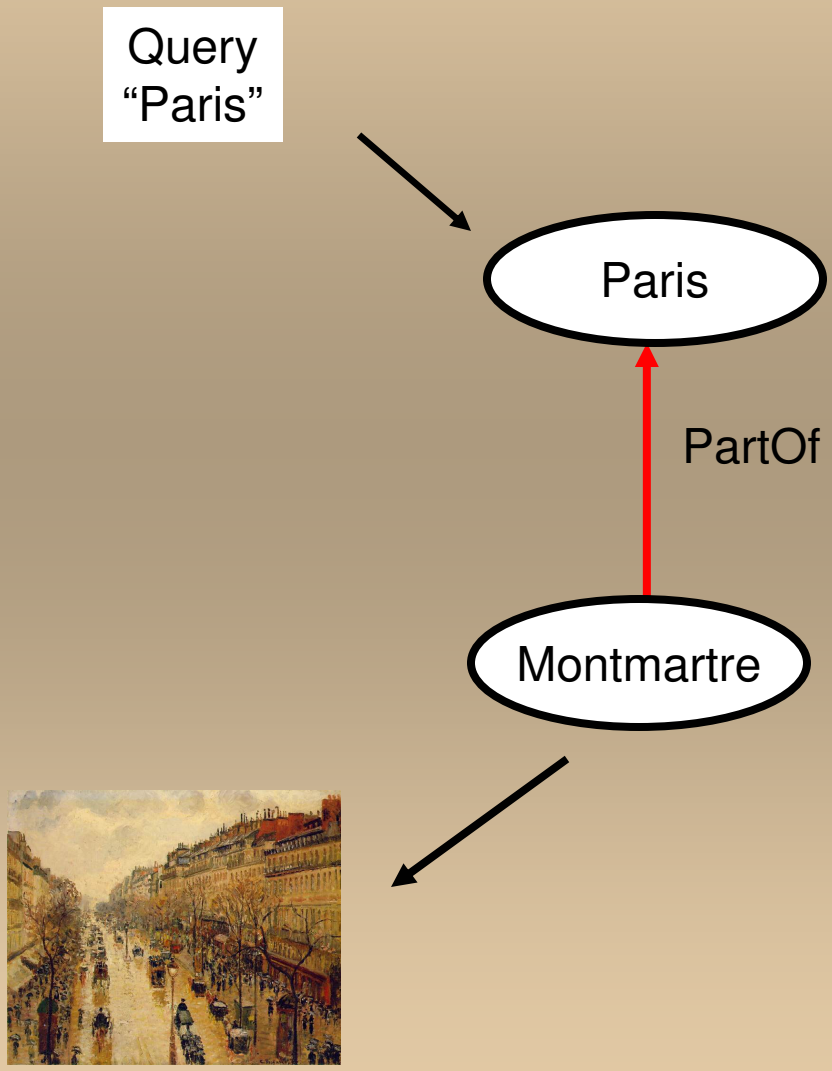
Description:

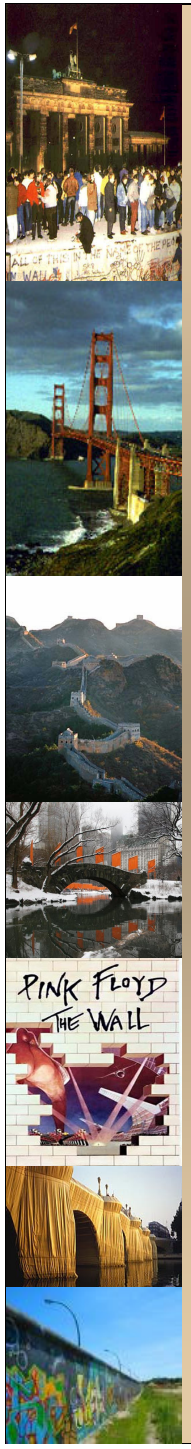
recordnumber	23727;
timestamp	2001-06-22;
type	cultural;original;
collector	Johannes Frederik van Ov Zeldzaamheden; Utagawa
series	360;
Culture	Japans;
Date	1800-1829;
Description	1883 JAPAN aankoop;
Identifier in Current Repository	360-4564;
Creation Site	Japan;
Current Repository	RMV;
Material	papier;
Measurements.Format	oban, 25.5 cm x 37.5 cm;
Style/Period.Period	Edo;
Title	Edo junisho;
Type	prenten;
type	Work;



Principle 2: semantic search

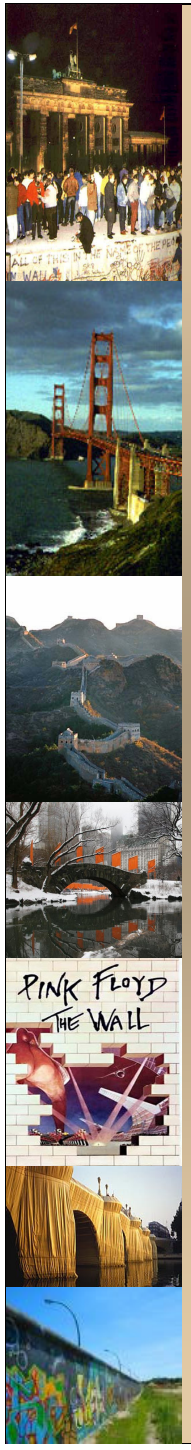
- Search for objects which are linked via concepts (semantic link)
- Use the type of semantic link to provide meaningful presentation of the search results





Term disambiguation is key issue in semantic search

- Post-query
  - Sort search results based on different meanings of the search term
  - Mimics Google-type search
- Pre-query
  - Ask user to disambiguate by displaying list of possible meanings
  - Interface is more complex, but more search functionality can be offered



Principle 3: vocabulary alignment

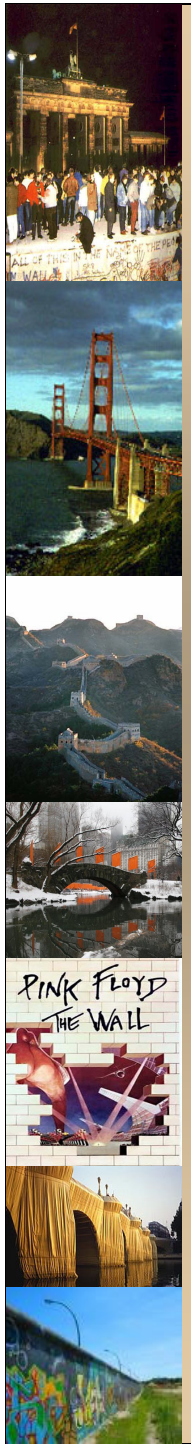
"Tokugawa"

AAT style/period
Edo (Japanese period)
Tokugawa

AAT is Getty's Art & Architecture Thesaurus

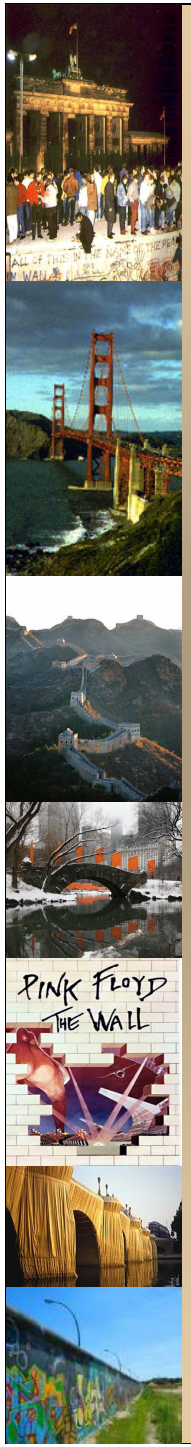
SVCN period
Edo

SVCN is local in-house ethnology thesaurus



The myth of a unified vocabulary

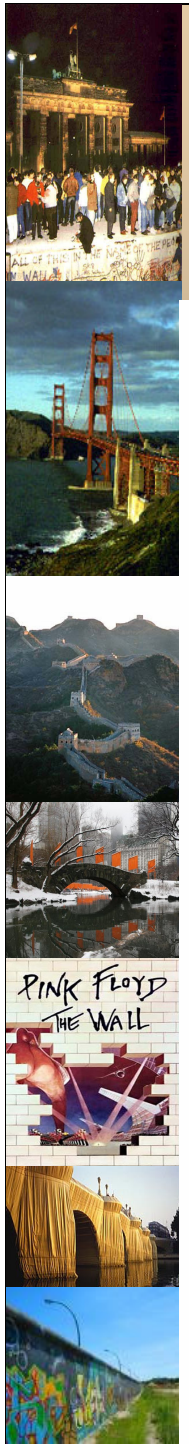
- In large virtual collections there are always multiple vocabularies
  - In multiple languages
- Every vocabulary has its own perspective
  - You can't just merge them
- But you can use vocabularies jointly by defining a limited set of links
  - "Vocabulary alignment"
- It is surprising what you can do with just a few links



Learning alignments

- Learning relations between art styles in AAT and artists in ULAN through NLP of art historic texts
  - "Who are Impressionist painters?"

Artist Name	*IS*	*In GS*
edgar degas	0.0699	1
edouard manet	0.0548	1
pierre-auguste renoir	0.0539	1
morisot, berthe	0.0393	1
gogh, vincent van	0.0337	0
cassatt, mary	0.0318	1
cezanne, paul	0.0302	1



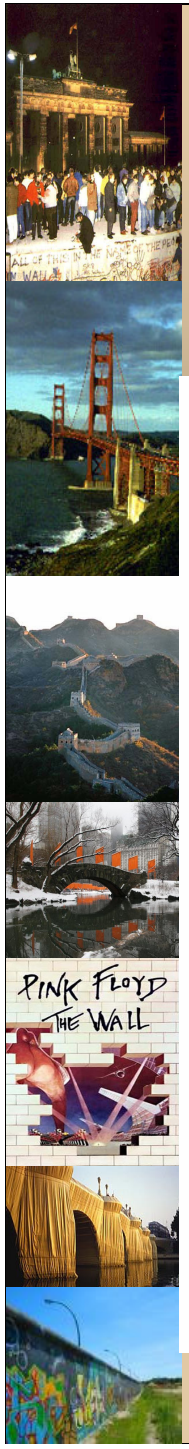
From metadata to semantic metadata

Thesaurus
schema mapping

Meta-Data
schema mapping

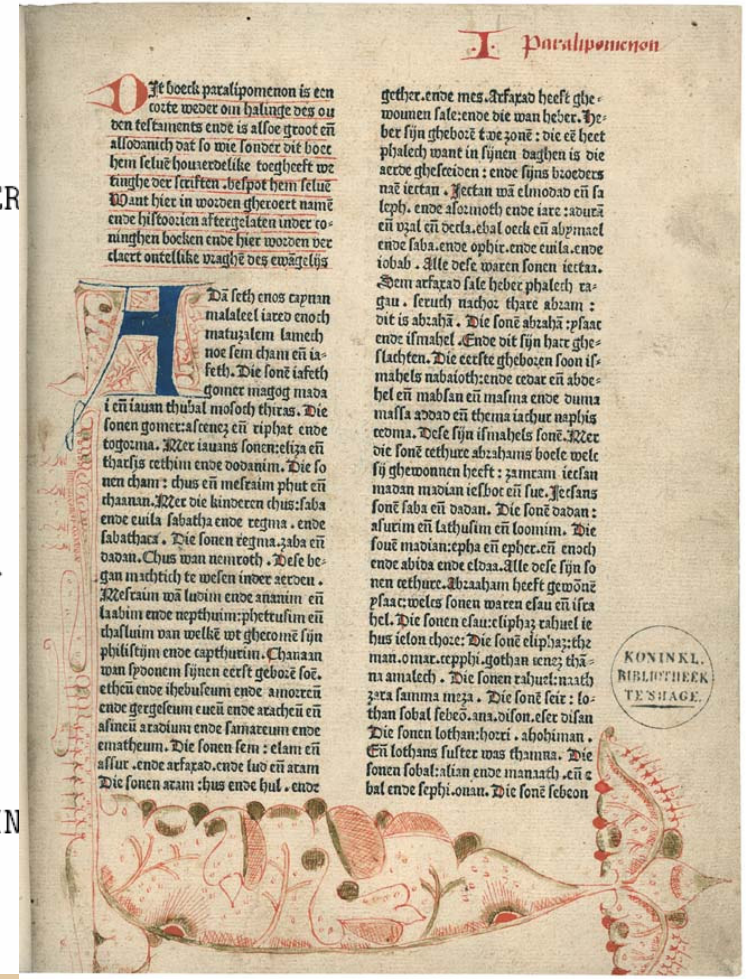
Meta-Data
mapping

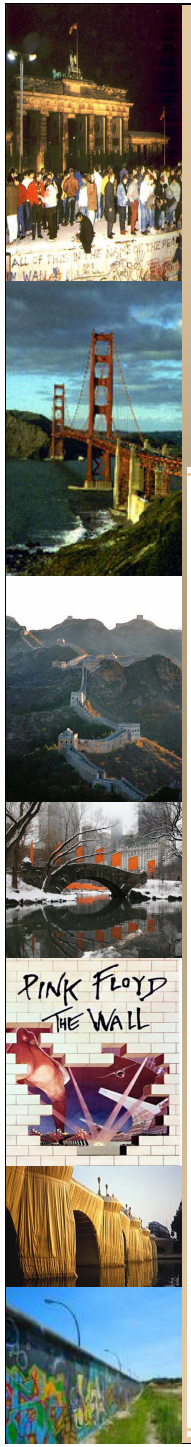
Thesaurus
alignment



Example textual annotation

```
<inm:Record>
    <inm:NUMMER>6</inm:NUMMER>
    <inm:TITEL>Delftse Bijbel...</inm:TITEL>
    <inm:TITEL_EN>Delft Bible...</inm:TITEL_EN>
    <inm:MAKER>Yemantszoon, Mauricius : d</inm:MAKER
    <inm:OBJECT>tekstbladzijde</inm:OBJECT>
    <inm:TECHNIEK>boekdruk</inm:TECHNIEK>
    <inm:DATERING>10 jan. 1477</inm:DATERING>
    <inm:CLASSIFICATIE>D</inm:CLASSIFICATIE>
    <inm:ORIGINEEL>Bijbel. Oude
        Testament...</inm:ORIGINEEL>
    </inm:REPRODUCTIE>
    <inm:TWNAAM/>
    <inm:TWOND>typografische vormgeving</inm:TWOND>
    <inm:TWOND>bijbels</inm:TWOND>
    <inm:TWGEO>Delft</inm:TWGEO>
    <inm:OMSCHRIJVING>Eerste bijbel die in het
        Nederlands verscheen...</inm:OMSCHRIJVING>
    <inm:OMSCHRIJVING_EN>The first Bible to
    appear in the Dutch language...</inm:OMSCHRIJVIN
    <inm:AFMETINGEN>27 x 20 cm</inm:AFMETINGEN>
    ...
</inm:Record>
```





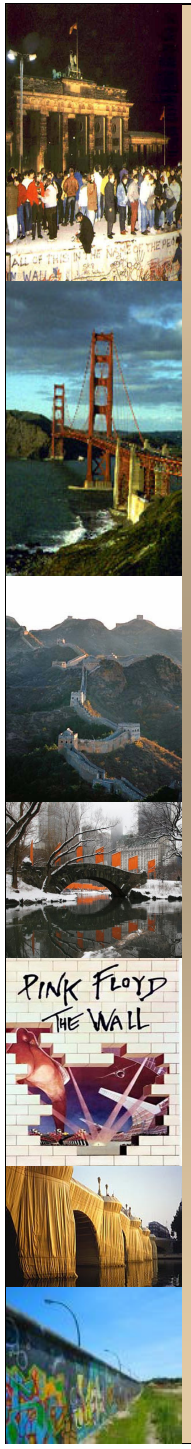
Resulting semantic annotation (rendered as HTML with RDFa)

Description:

classificatie	Geschiedenis van de boekdrukkunst;
drukker	Meer, Jacob Jacobszoon van der; Yemantszoon, Mauricius;
origineel	Bijbel. Oude Testament. - Delft: Jacob Jacobszoon van der Meer en Mauricius Yemantszoon, 10 jan. 1477, dl. 2, p. 1;
Date	10 jan. 1477;
Description	The first Bible to appear in the Dutch language, known as the Delft Bible. It consists of the Old Testament only and is an anonymous adaptation of the - again anonymous - History Bible of 1360. It is an example of an incunabulum where the hand-written book still served as an example for lay-out and design. Contrary to many other incunabula, the place of origin, the names of the printers and even the day of its completion are mentioned in the colophon.;
Measurements.Dimensions	27 x 20 cm;
rights.copyright	Den Haag Koninklijke Bibliotheek;
Source	Bibliopolis;
Subject	bibles; incunabula; initials; ornamental borders; rubrications; typographical design;
subject.geographicPlace	Delft;
Technique	letterpress printing;
Title	Delft Bible, printed in Delft by Jacob Jacobszoon van der Meer and Mauricius Yemantszoon, 1477;
Type	tekstbladzijde;
type	Work;

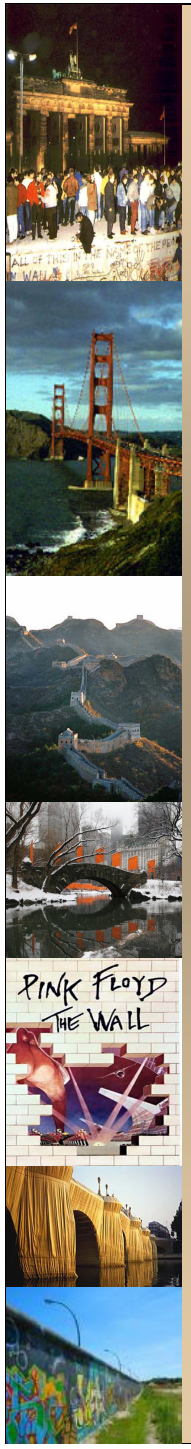
Used as value to describe other resources:

BBB_169E56_1477_P1.JPG;	relation.depicts



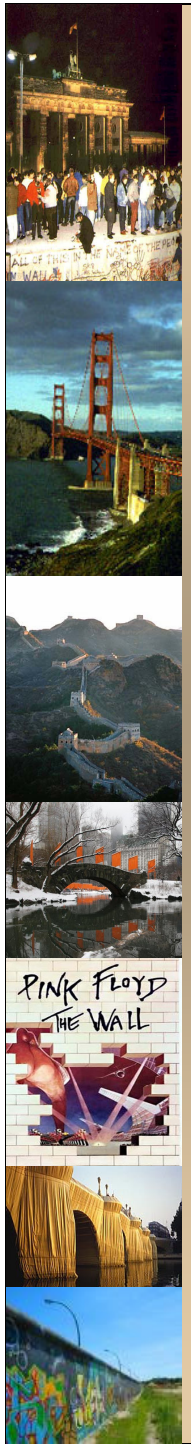
Perspectives

- Basic Semantic Web technology is ready for deployment
- Web 2.0 facilities fit well:
  - Involving community experts in annotation
  - Personalization, myArt
- Social barriers have to be overcome!
  - "open door" policy
  - Involvement of general public => issues of "quality"



Caveats for museum software

- Be wary of Flash
  - Accessibility
- Make sure you can connect others and other can connect to you
  - "Don't buy software which does not support standard open API's"
- Export facilities to common formats (XML, …)



http://e-culture.multimedian.nl

- Part of the Dutch knowledge-economy project **MultimediaN**
- Partners: VU, CWI, UvA, DEN, ICN
- People:
  Alia Amin, Lora Aroyo, Mark van Assem, Victor de Boer, Lynda Hardman, Michiel Hildebrand, Laura Hollink, Marco de Niet, Borys Omelayenko, Marie-France van Orsouw, Jacco van Ossenbruggen, Guus Schreiber Jos Taekema, Annemiek Teesing, Anna Tordai, Jan Wielemaker, Bob Wielinga
- Artchive.com, Rijksmuseum Amsterdam, Dutch ethnology musea (Amsterdam, Leiden), National Library (Bibliopolis)