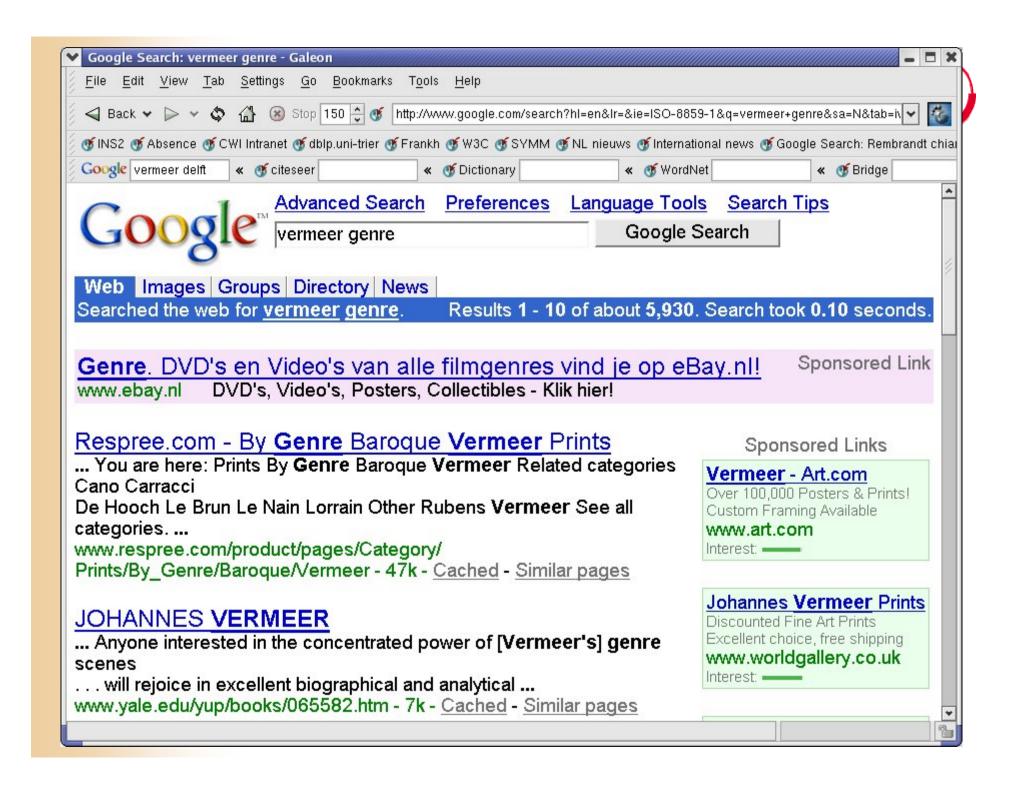
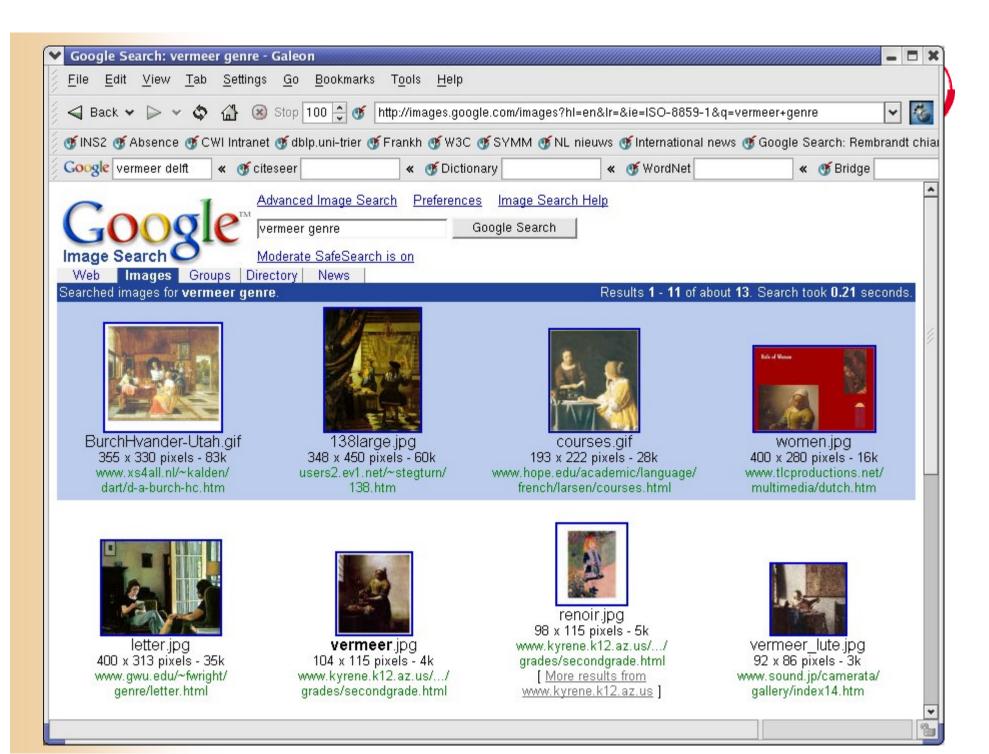


# Presenting Knowledge on the Semantic Web

Lynda Hardman TU/e universiteit eindhoven Semantic Media Interfaces









## Long-term goal

 Develop knowledge-intensive models and document processing technologies that are able to:

generate coherent multimedia presentations tailored to an individual user

taking into account their preferences, abilities, device capabilities and environment.



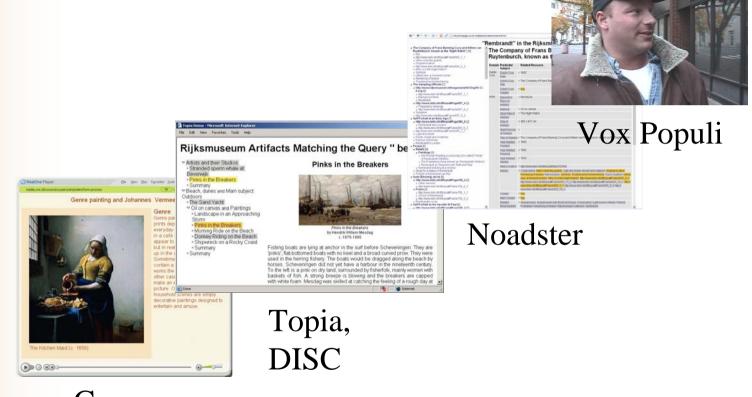


### Goals of research

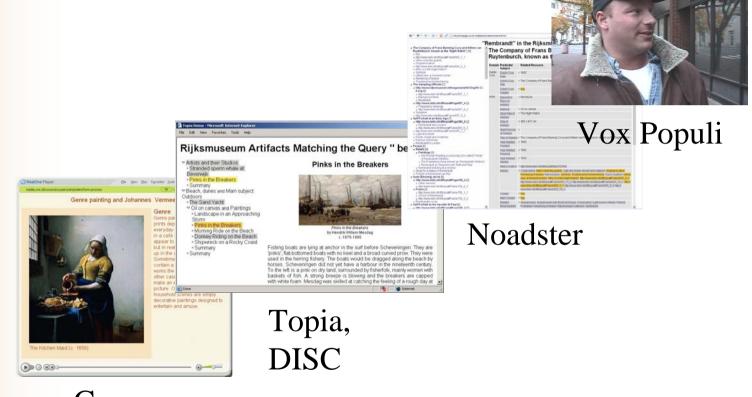


- Understand how to
  - incorporate design and discourse knowledge into multimedia presentations
  - represent this knowledge in Web and Semantic Web technologies
- Semantic Web provides
  - source content for inclusion in presentations
  - a means of expressing knowledge needed



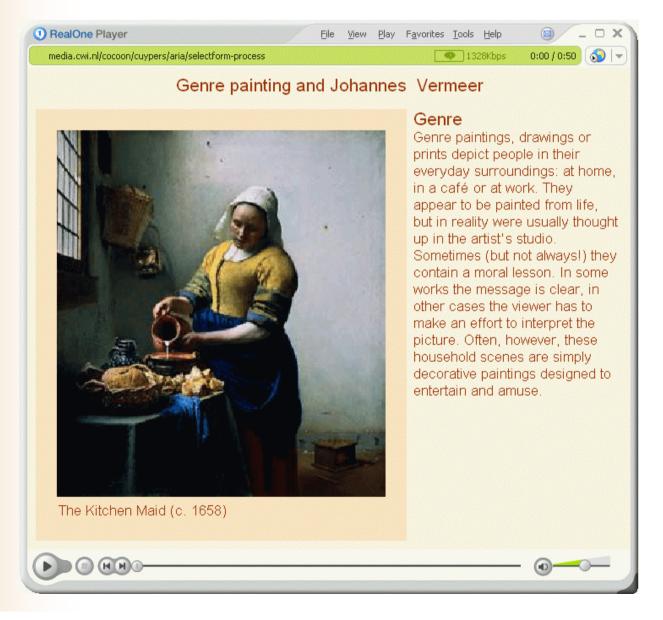






### Space/time trade-offs









- Media repository from Rijksmuseum
- Quantitative constraints insufficient using pixel-based positioning
- Qualitative constraints also used specification of constraints at higher level

A not-overlap B, B after C

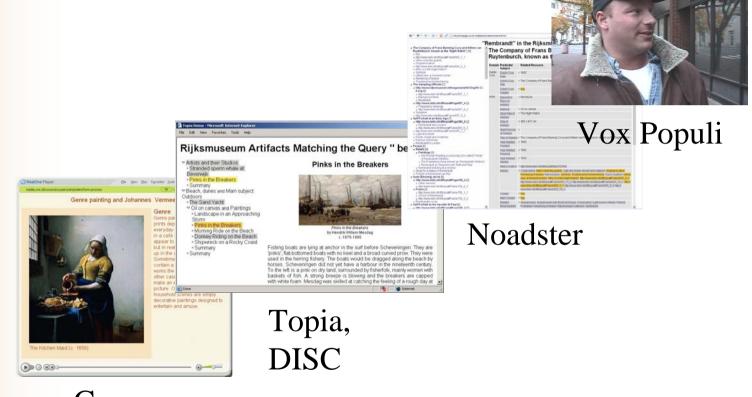
If insoluble then backtrack to other solutions using

**Prolog** 

Joost Geurts
 MMM 2001, WWW 2001







## Inferring document structure





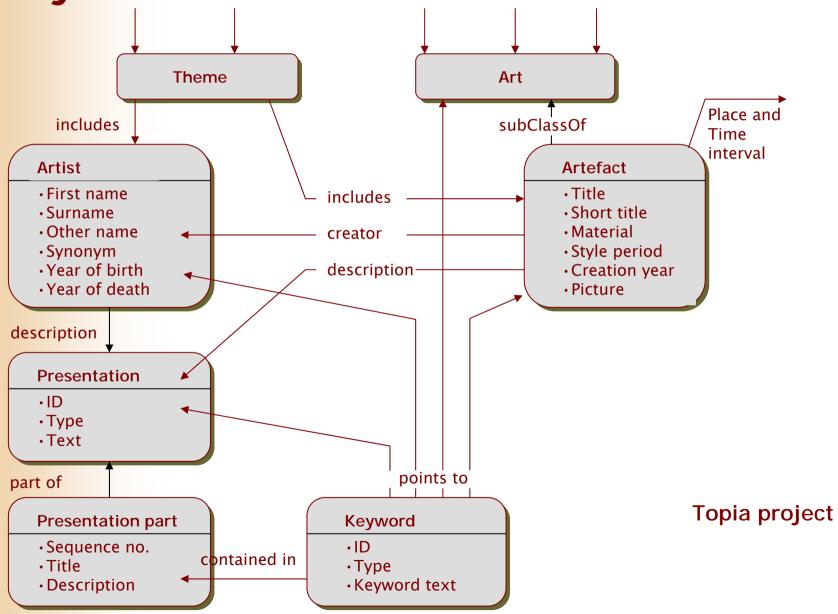


baskets of fish. A strong breeze is blowing and the breakers are capped with white foam. Mesdag was skilled at catching the feeling of a rough day at





Rijksmuseum domain model







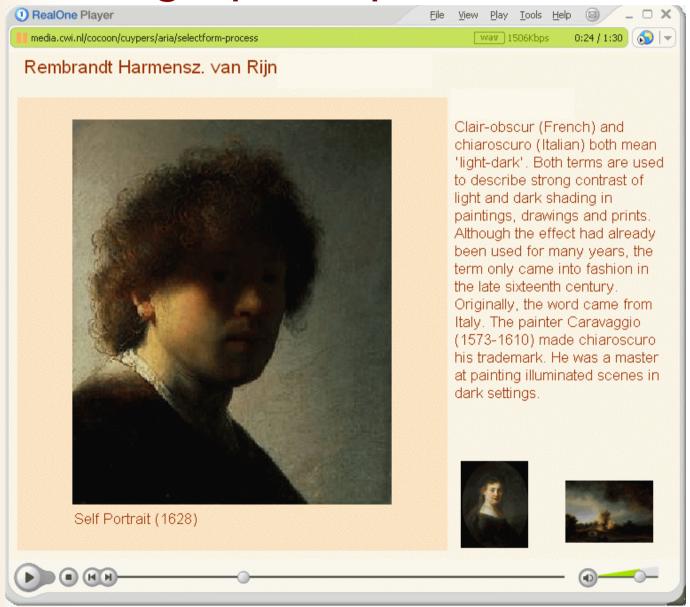
- Topia
- Rijksmuseum ARIA database -> RDF
- Clustering on results of query
- Presentation showing "table of contents" and current focus

 Lloyd Rutledge ACM Hypertext 2003



### Semantic graph to presentation





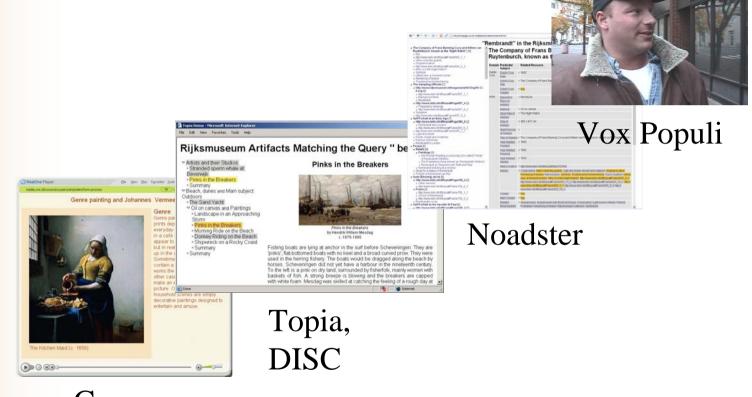


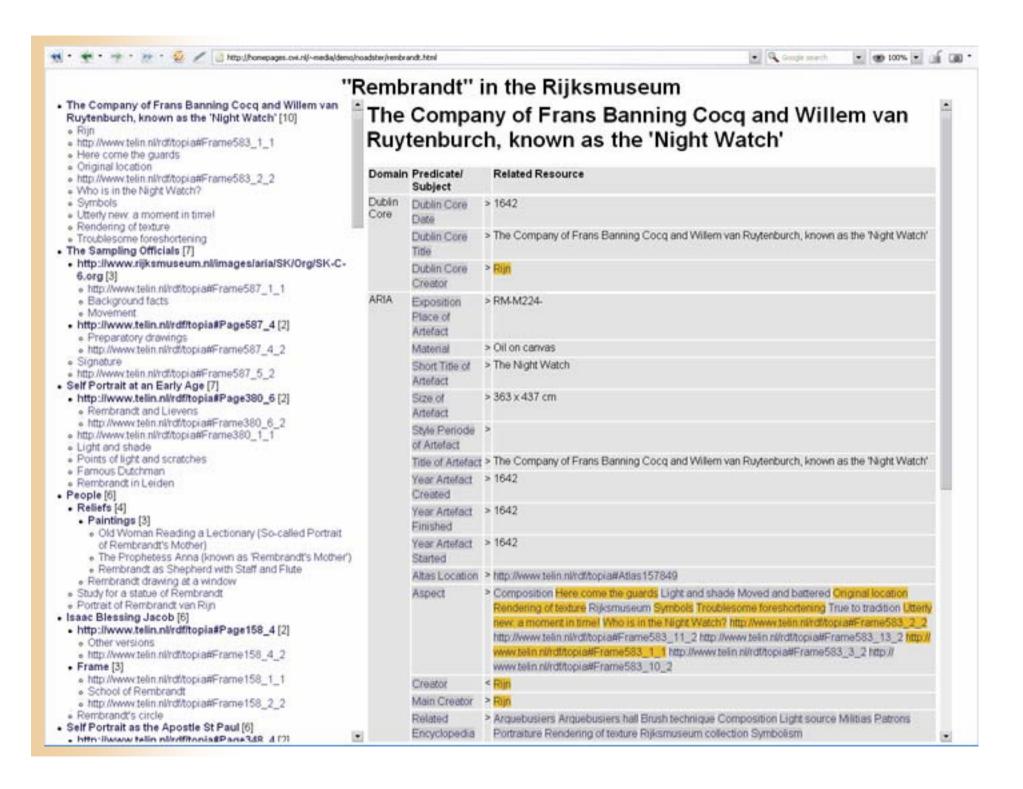


- DISC
- Rijksmuseum repository of media items
- Semantic graph is not enough
   Rembrandt married-to Saskia
   also need discourse structures
   for deriving grouping, ordering and priorities
- Biography template created painter is-a profession
- Stefano Bocconi, Joost Geurts ISWC 2003







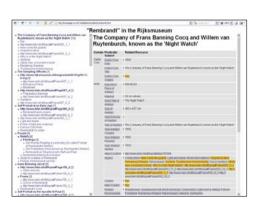




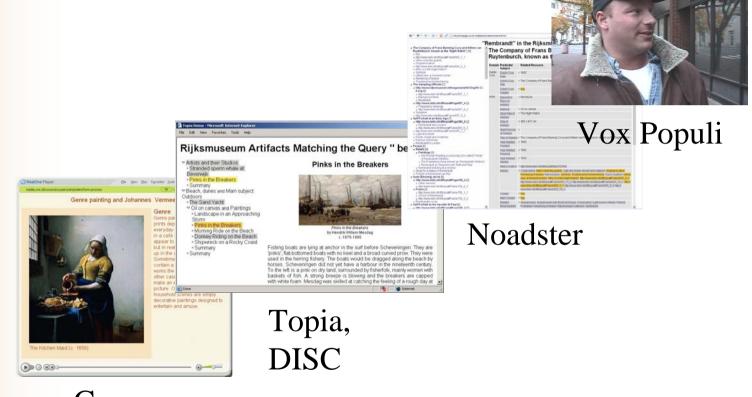


- Noadster
- Generalised semantic web browsing
- Integrating global and local browsing

 Lloyd Rutledge, WWW 2005











Amsterdam Cuypers
Hypermedia
Model

Time





- Collection of vocabularies in RDF:
  - AAT, ULAN, TGN
- Artchive images
- Interface for searching and browsing

http://eculture.multimedian.nl

- Partners:
  - Guus Schreiber, VU; Bob Wielinga & Jan Wielemaker, UvA

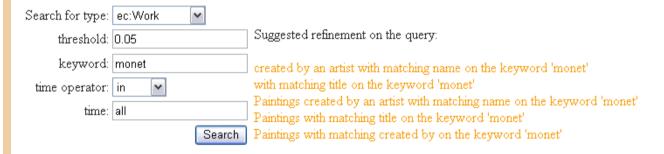
#### Eculture advanced search

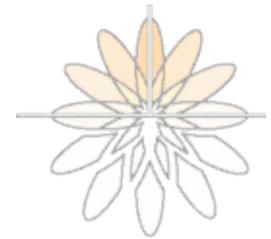


#### MultimediaN E-Culture project demonstrator

Disclaimer: this is work in progress

#### Keyword search





#### Description

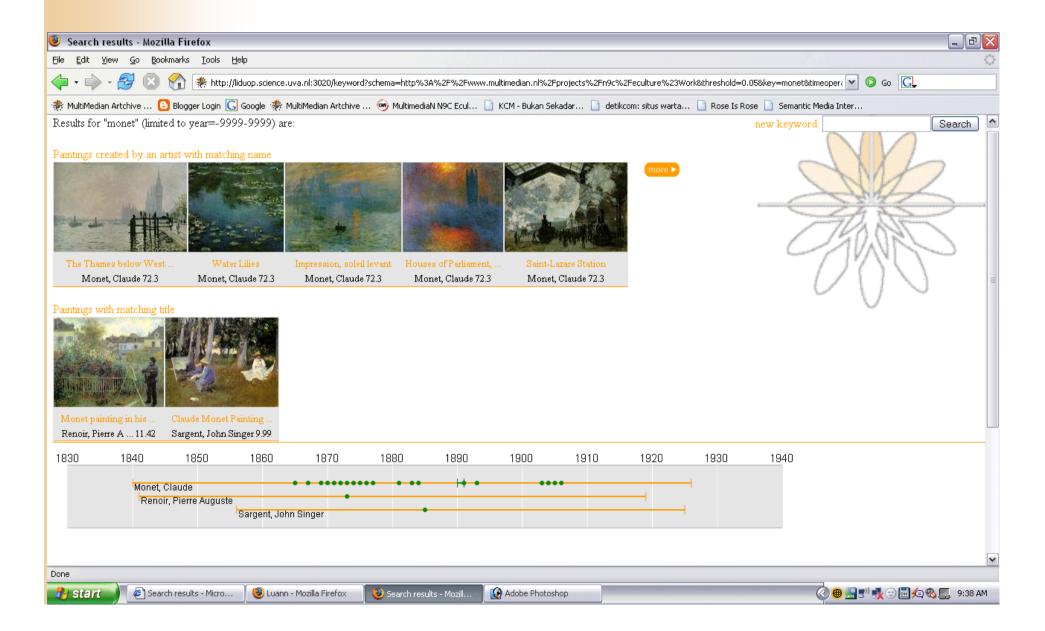
This is a demonstration of how Semantic Web technology can help to interactively search, navigate and annotate annotated media collections.

#### Implementation details

The prototype is built using the SWI-Prolog SeRQL engine (http://www.swi-prolog.org/packages/SeRQL/). For the prototype, we first uploaded the metadata of the painting collection (after conversion to RDF, using the VRA vocabulary). Second, to be able to use some semantic background knowledge, we uploaded RDF versions of the Getty thesauri (AAT, ULAN and TGN, http://www.getty.edu/research/conducting\_research/vocabularies/). Finally, to find search results referring to synonyms or other closely related words, in future versions we will also upload an RDF-version of Wordnet.

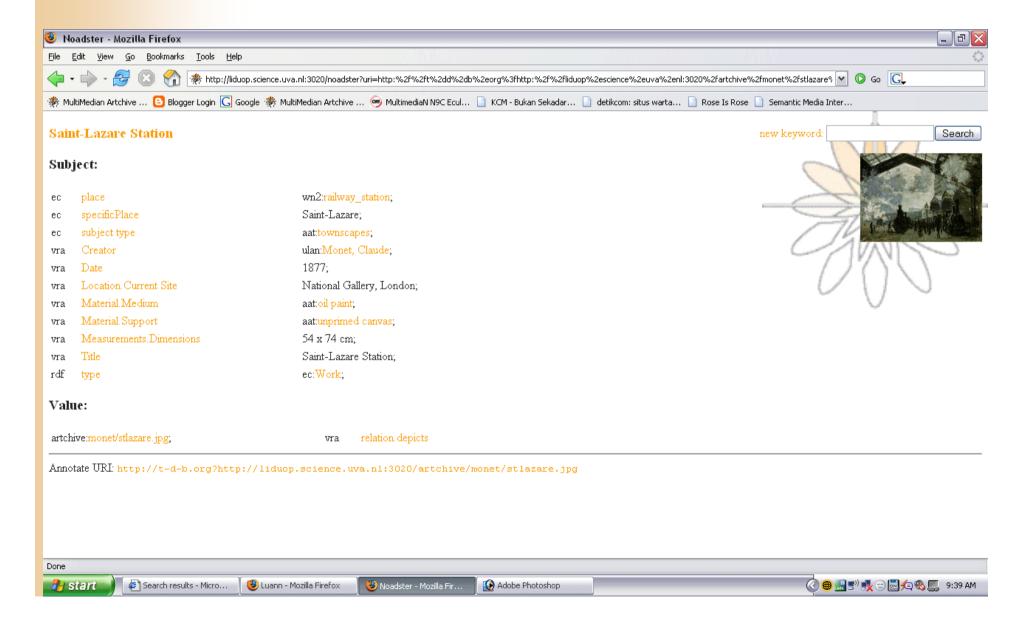
#### Eculture search result





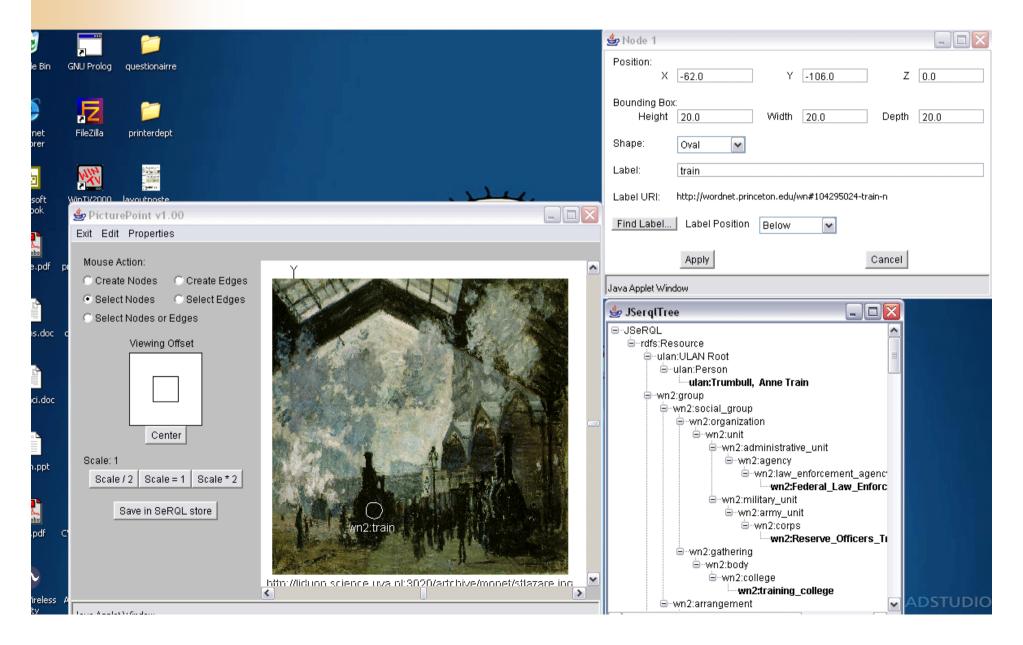








#### Eculture artefact annotation







 Making (multimedia) discourse and design knowledge explicit

Expressing re-usable semantics of media assets

 Designing architectures for multimedia presentation generation





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- ICES KIS MultimediaN Eculture
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