

## CIMI/Harmony Collaboration

Carl Lagoze  
lagoze@cs.cornell.edu

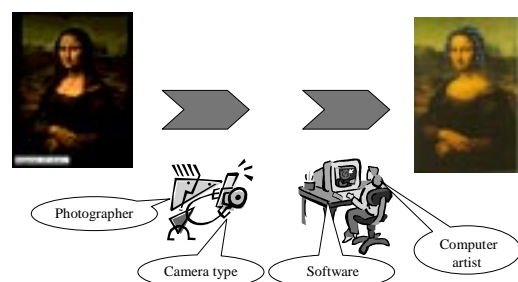
## Acknowledgements/Resources

- Dan Brickley (ILRT, W3C)
- Jane Hunter (DSTC)
- Libby Miller (ILRT)
  
- <http://metadata.net/harmony>
- <http://www.cs.cornell.edu/cdlrg>

## Harmony Project

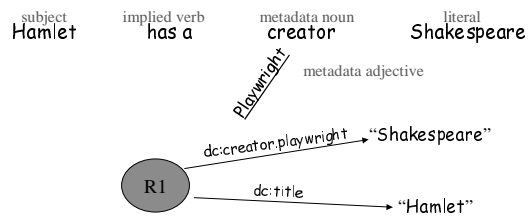
- DSTC (Australia), JISC (U.K.), NSF (U.S.)
- Motivations
  - inadequacy of simple attribute/value metadata models for rich resource description
  - need for "normalization" principles in digital libraries of mixed media objects
- Goals
  - Understand and develop cross-media modeling principles
  - Exercise those principles as a means of facilitating interoperability among metadata vocabularies

## Multi-entity nature of object description



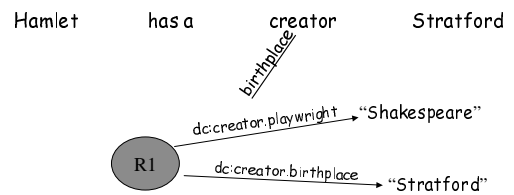
## Attribute/Value approaches to metadata...

The playwright of Hamlet was Shakespeare

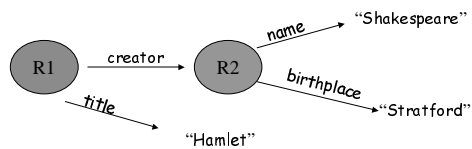


## ...run into problems for richer descriptions...

The playwright of Hamlet was Shakespeare, who was born in Stratford



## ...because of their failure to model entity distinctions



## ABC/Harmony Event-aware metadata model

- Recognizing inherent lifecycle aspects of description (esp. of digital content)
- Modeling incorporates time (events and situations) as first-class objects
  - Supplies clear attachment points for agents, roles, occurrent properties
- Resource description as a "story-telling" activity

## CIMI Experiments

- Participating Museums
  - AMOL (Australia Museums and Galleries Online)
  - Natural History Museum of London
  - National History Museum of Denmark
  - Library of Congress/RLG
- Records collected at:
  - <http://archive.dstc.edu.au/CIMI/>

## Observations

- Supplied records are extremely idiosyncratic
- "Standards" such as the CIMI DC recommendations are freely interpreted
- Understanding and using the records has required significant human effort
- Achieving *automated* interoperability amongst idiosyncratic metadata is akin to natural language comprehension

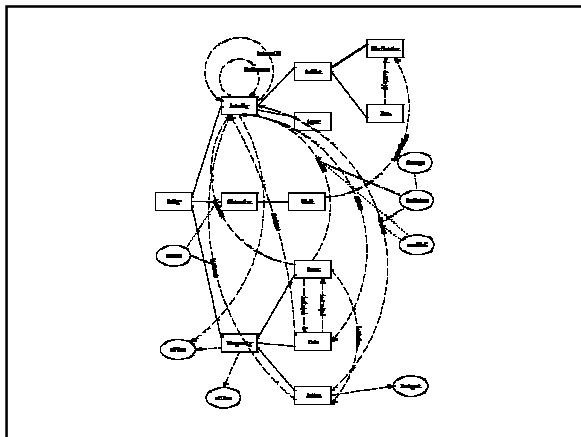
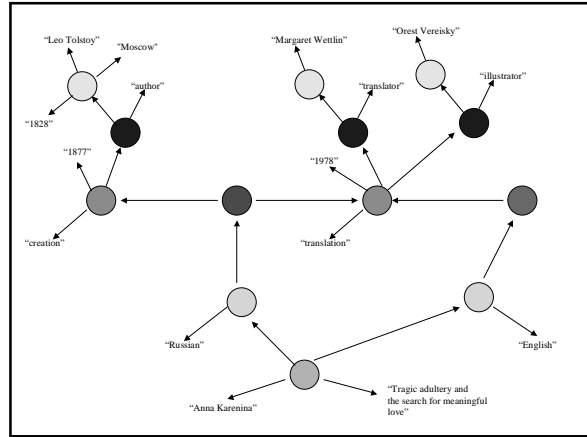
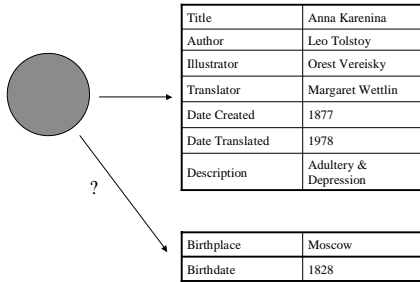
## Results

- CIMI records provided fertile input for refinement of ABC model
- ABC model will hopefully provide:
  - A cleaner foundation for representing the type of information that has been confounded Dublin Core, MARC, etc. (e.g. agents, actions, changes, derivations)
  - A basis for more precise queries across this data.

## ABC Model

- Entity/relationship foundation
  - A world of typed and identified entities,
  - that are interrelated in multiple, rich ways
- Time and transformation as first-class concepts
  - Objects have properties (*adjectives*) that are "constant" and time-dependent (*stateful*)
  - Agents and their actions (*verbs*) occur in *events* that modify the state of objects
- <http://metadata.net/harmony>

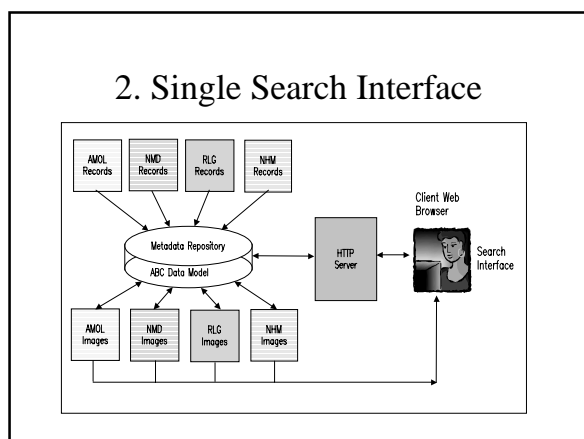
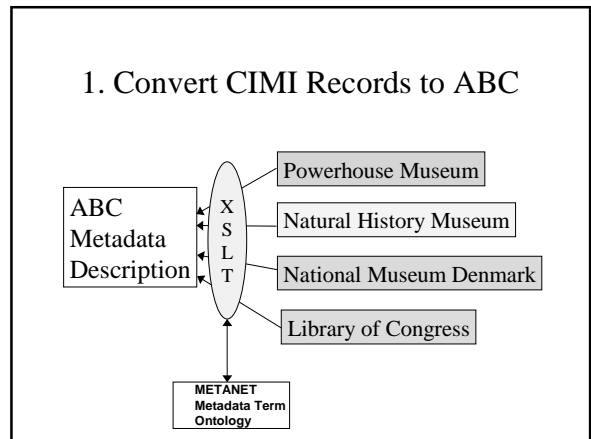
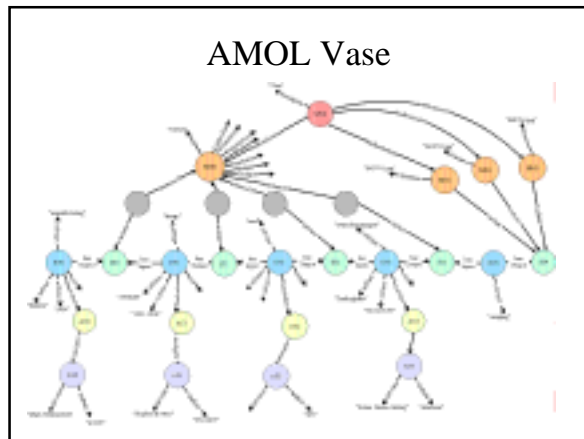
## Resource-centric Metadata



## AMOL Vase

```

<ObjectID>95/4/1</ObjectID>
<Name>Vases</Name>
<Statement>Vase, 'Chintz Vase with Cockatoos'; terracotta earthenware
blend/ underglaze decoration in slip and oxides/ on-glaze gold lustre, Mark
Heidenreich/Stephen Bowers, Australia, 1989-1994</Statement>
<Designed>Bowers, Stephen; Adelaide, South Australia</Designed>
<Made>Heidenreich, Mark; Sydney, New South Wales</Made>
<Date>1989-1994</Date>
<DateType>Manufacture</DateType>
<Description>Vase, 'Chintz vase with Cockatoos', made by Mark
Heidenreich, Sydney, 1989 and decorated by Stephen Bowers, Adelaide,
1993-1994. Terracotta earthenware blend vase, wheelmade (thrown), with a
wide flat base, raised rims at the foot, narrowing above the base then
swelling out to a large ovoid body with rounded shoulders, and topped by
a short narrow neck below a wide thick rim. The foot and rim are decorated
with underglaze black bands on either side of a black and brown marbled band.
.....
    
```



### Enables More Advanced Queries

- Find me images of objects which were acquired as gifts?
- Tell me all of the previous owners of a particular object?
- Give me images of people born before 1950?

Rudolf Squish – <http://swordfish.rdfweb.org/rdfquery>  
 AMOL Demo – <http://swordfish.rdfweb.org/discovery/2001/03/demos/image.html>



## Current Work

- Creating more ABC records
  - Human input
  - "Story-based" user interface
- Experimentation with querying over ABC descriptions – Squish RDF queries vs. XML queries
- DELOS/CIDOC/Harmony workshop on ontology harmonization
  - [http://metadata.net/harmony/DELOS\\_Workshop.doc](http://metadata.net/harmony/DELOS_Workshop.doc)

## References

<http://metadata.net/harmony/Collaboration.htm>

<http://swordfish.rdfweb.org/discovery/2001/03/demos/image.html>