Creating Meaningful Presentations
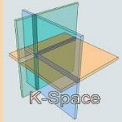
Lynda Hardman
Jacco van Ossenbruggen
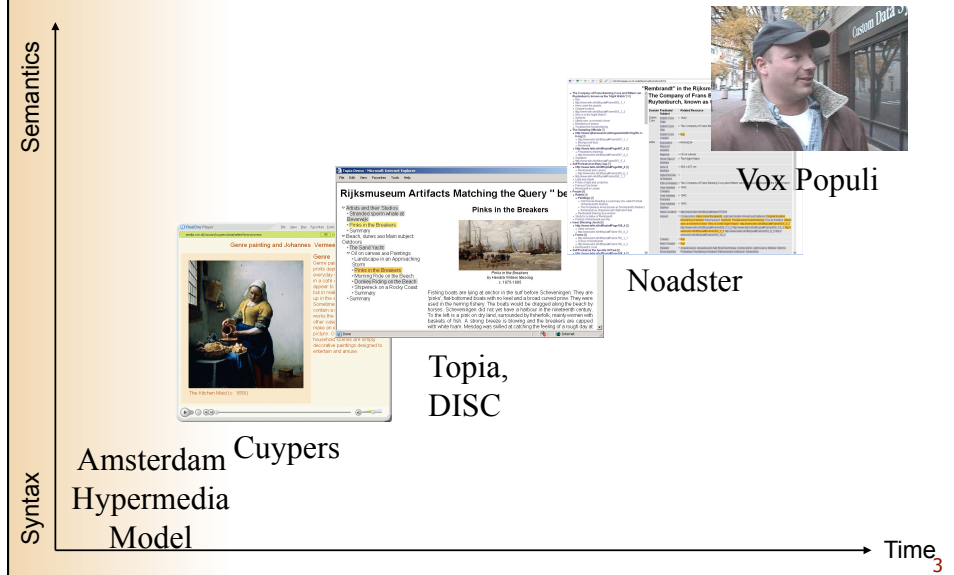
Semantic Media Interfaces
CWI, Amsterdam
http://www.cwi.nl/~media

Introduction

- Overview of our research activities:
  - Creating meaningful presentations from query results
  - Part of the K-Space, Passepartout and Multimedia-N

- Main theme of our work:
  - The role that **explicit discourse** information plays in the *personalized generation process*
  - The difference between:
    - a *list* of retrieval results ordered *most relevant first* and
    - a *presentation* that has *structure* interpretable by the end user, giving the collection *sense of belonging to same presentation*

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From syntax to semantics

Semantics (axis)

Syntax (axis)

Vox Populi

Noadster

Topia, DISC

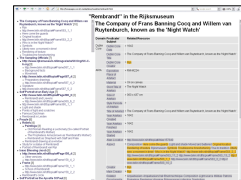Amsterdam Cuypers
Hypermedia
Model

Time

3

Existing approaches in presenting query results

- No explicit discourse (only domain semantics):
  - Noadster - clusters from domain semantics
  - Topia - preselecting concepts in domain semantics
  - Museo Suomi, /facet (facet browsers) – selection based on domain semantics

- Deriving some aspects of discourse:
  - Giving meaning to clustering process
  - Assigning different weights to clusters => ordering
    - Influence the way people perceive information

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Semantic Web browsing

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

- Lloyd Rutledge,
  WWW 2005

Inferring document structure

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

- Lloyd Rutledge
  ACM Hypertext 2003

Inferring document structure

Explicit Discourse

- **Fixed discourse**:
  - DISC – uses annotated multimedia repository + domain ontology and discourse knowledge
  - discourse knowledge = set of rules (genre, narrative units…)
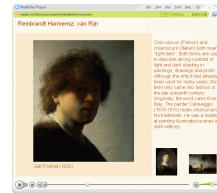
- **Dynamic discourse**:
  - VoxPopuli: argument generation in video
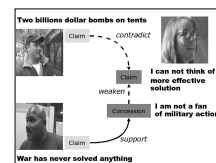
- **Role of structured progression**

Fixed Discourse

- 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

Dynamic Discourse

- Vox Populi: Argument generation in video

Role of structured progression

- Mono-media cases (text or video sequences):
  - ordering for the fragments and present them
- Presentations that use combinations of media,
  - Semantics of domain and discourse need translation to *hierarchical structures* that can be expressed through *layout*, *navigational links* or *temporal info*.
- Intermediate format is required:
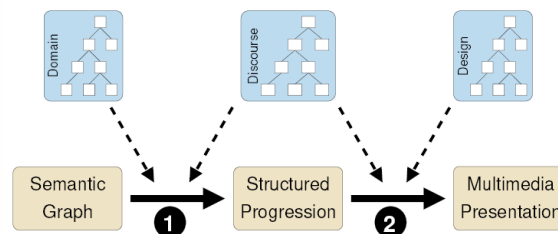
Conclusions

- From projects described we have learned:
  - distinguish stages in process
  - separate discourse knowledge
    - Fixed and Dynamic discourse
  - mappings between domain & discourse knowledge
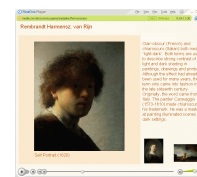
- Scientific challenges remain:
  - Making (MM) discourse and design knowledge explicit
  - Expressing re-usable semantics of media assets
  - Architectures for multimedia presentation generation

Acknowledgments

- This research was funded by:
  - the European Commission
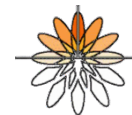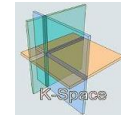   under contract FP6-027026,
    *Knowledge Space of semantic inference
    for automatic annotation and retrieval
    of multimedia content - K-Space*

  - the European *ITEA Passepartout project*,

  - Dutch *BSIK MultimediaN e-Culture project*

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Literature tips

- *Guus Schreiber, Alia Amin, Lora Aroyo, Mark van Assem,
  Victor de Boer, Lynda Hardman, Michiel Hildebrand,
  Borys Omelayenko, Jacco van Ossenbruggen, Anna Tordai,
  Jan Wielemaker and Bob Wielinga*
  Semantic Annotation And Search Of Cultural-Heritage Collections:
  The MultimediaN E-Culture Demonstrator
  http://dx.doi.org/10.1016/j.websem.2008.08.001

- *Michiel Hildebrand, Jacco van Ossenbruggen and Lynda Hardman*
  /facet: A Browser for Heterogeneous Semantic Web Repositories
  ISWC 2006 http://dx.doi.org/10.1007/11926078_20

- *Stefano Bocconi*
  Vox Populi: generating video documentaries from semantically
  annotated media repositories
  PhD thesis, Technical University of Eindhoven, 2006
  http://www.cwi.nl/~media/Theses/Bocconi/VoxPopuli.pdf

- *Stefano Bocconi*
  Automatic generation of matter-of-opinion video documentaries
  Journal of Web Semantics, April 2008, 6(2), pp. 139-150
  http://dx.doi.org/10.1016/j.websem.2008.01.004

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