Narrative Hypermedia

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Contradiction in terms!

- Narrative:
  storyline with beginning, middle and end
  http://www.uni-koeln.de/~ame02/pppn.htm

- Hypermedia:
  collection of linked fragments,
  no required boundary
Hypertext community

- Experiments with stories ‘80s onwards
  - Michael Joyce: Afternoon, a Story 1990
  - Stuart Moulthrop: Victory Garden 1992
  - Shelley Jackson: Patchwork girl  1995
  - M.D. Coverley: Califia 1999
  

- Loops/choice points or events from different perspectives
  - Amanda Goodenough: Inigo Gets Out 1987

- Author can maintain some control by making new material accessible only after reader has read all required passages
Hyperlinks in Film

- Different forms of hyperlinks:
  - Choice points with different scenes
  - Choice points with alternative storylines
    Run Lola Run (Lola Rennt) 1998,
    Sliding Doors 1998,
    Groundhog Day 1993
  - Different parallel perspectives
    (TV movie on different channels)
Hyperlinked comics

Scott McCloud:
Understanding Comics (1993)
Reinventing Comics (2000)
Making Comics (2006)

Juxtaposition of frames “forces” reader to fill in the gaps, thus developing a “narrative”

http://www.scottmccloud.com

Temporal flow

- A story has a beginning, a middle and an end.
- The events being talked about also have a temporal order – these do not have to be the same
  Arundhati Roy, The God of Small Things
- When constructing a hypermedia narrative challenge is even greater, since author has less control on what the reader reads next
- Luesebrink explains different temporal layers in a story: cognitive time and interface time
- Presentation itself also has time
  Do You Have the Time? Composition and Linking in Time-based Hypermedia, Hardman et al.,
  http://doi.acm.org/10.1145/294469.294515
**NM² (New Media for a New Millenium)**

- Exploring the creation of interactive narratives
- Narrativity in ShapeShiftedTV, Maureen Thomas (Cambridge University)
- Graph of choice points. Every time a choice is made, the remaining set of choices is reduced.


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**Human->machine**

- So far discussed stories/narratives created by humans

- What do we need to understand to allow a computer to do this too?
  - topic of the story
  - intended listener
  - representation of discourse
Discourse model components

- A discourse model contains knowledge about:
  - genre composition;
  - discourse structure building;
  - discourse structure population.
- genre: a distinctive type of literary composition that defines characteristic attributes of this composition e.g. a flow of discourse.
- discourse structure: identifies the flow of discourse by specifying concepts and their order plus situation of these concepts within sections and subsections.
- order: a meaningful order based on semantic relations between items
- A generation process uses knowledge in the discourse model to generate a final presentation

The Role of Genre

- Genres differ in discourse flows
  - Essay, biography: informative genres, oriented on providing information
  - Newspaper article: stronger narrative structure in which climax is essential
- Different mechanisms are required to support different genres
  - Essay, biography: find a set of relevant concepts, decide in what order they should be presented
  - Newspaper article: identify climax, find relevant concepts

Falkovych & Bocconi, Creating a Semantic-based Discourse Model for Hypermedia Presentations: (Un)discovered Problems
http://www.cwi.nl/~media/publications/HTW05Falkovych.pdf
Generating video documentaries from annotated media repositories

Stefano Bocconi, Frank Nack
CWI Amsterdam
The Netherlands
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Talk Outline

- Motivation
- Example
- Scenarios
- Technical details
  - Annotations
  - Editing Process
- Conclusions
Video Documentaries on the Web

- Traditional video authoring: there is only one final version, what is shown is the choice of the author/editor
- Proposed video authoring:
  - Annotate the video material semantics
  - Show automatically what the user asks to see, using presentation forms a film editor would use

Video material

- Focus on video interviews about controversial issues
- **Interview with America** video footage with interviews and background material about the opinion of American people after 9-11
  
  www.interviewwithamerica.com
Example: What do you think of the war in Afghanistan?

“I am never a fan of military action, in the big picture I don’t think it is ever a good thing, but I think there are circumstances in which I certainly can’t think of a more effective way to counter this sort of thing…”

What do you think of the war in Afghanistan?

- I am not a fan of military actions
- I cannot think of a more effective solution
- War has never solved anything
- Two billions dollar bombs on tents
The annotations

- **Rhetorical**
  - Rhetorical Statement
    (mostly verbal, but visual also possible)
  - Argumentation model: Toulmin model

- **Descriptive**
  - Question asked
  - Interviewee (social)
  - Filmic *next slide*

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Filmic annotations

**Continuity, e.g.**
- lighting conditions
- background sound
- gaze direction of speaker
  - left, centre, right
- framing continuity
  - close-up, medium shot, long shot
- camera movement
  - none, pan left/right, shaking, tilt up/down, zoom in/out
Statement encoding

- Statement formally annotated:
  - `<subject> <modifier> <predicate>`
  - E.g. “war best solution”
- A thesaurus containing:
  - Terms (155)
  - Relations between terms: similar (72), opposite (108), generalization (10), specialization (10)
  - E.g. war opposite diplomacy

Connect statements

- Using the thesaurus, generate related statements and query the repository “war best solution”, “diplomacy best solution”, “war not solution”
- Create a graph of related statements
  - nodes are the statements (corresponding to video segments)
  - edges are either support or contradict
Toulmin model

57 Claims, 16 Data, 4 Concessions, 3 Warrants, 1 Condition
Analysis of the Example

Two billions dollar bombs on tents

Claim

contradict

Claim

I cannot think of a more effective solution

I am not a fan of military actions

Concession

weaken

War has never solved anything

Facts and features

- Annotations: 1 hour annotated, 15 interviews, 60 interview segments, 120 statements
- Partially tunable: examining the Segment graph gives feedback on the quality of the annotations and the thesaurus
Controlling the Bias

- Video documentaries are not neutral account of reality: the selection and editing of the footage expresses a point of view
- Editing strategy:
  - Balanced
  - Pro opinion X
  - Against opinion X
- We use:
  - Logos (the statements)
  - Ethos (based on user profile)
  - Film editing (e.g. framing, gaze)

Vox Populi interface
Conclusions

- Automatic generation of video interviews augmented with supporting and/or contradicting material
- The **user** can determine the subject and the bias of the presentation
- The **documentarist** can add material and let the system generate new documentaries

Pointers & Acknowledgments

- This presentation and a Demo available at: [http://www.cwi.nl/~media/demo/IWA/](http://www.cwi.nl/~media/demo/IWA/)
- This research was funded by the Dutch national ToKeN I²RP and CHIME projects.
Conclusions

- Hypermedia narrative is still an experimental art form
  Online magazine Tekka [http://www.eastgate.com/catalog/Tekka.html](http://www.eastgate.com/catalog/Tekka.html)
  Online writing centre [http://trace.ntu.ac.uk](http://trace.ntu.ac.uk)

- We can’t (yet) generate rich hypermedia narratives

- We can make small steps from domain knowledge to human-consumable information
- We can add rich rhetorical information and generate video sequences
  Re-use of visual material is “forgiving”