Narrative Hypermedia

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Narrative <-> Hypermedia

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
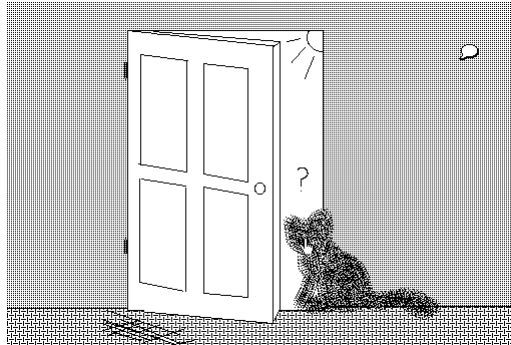 - M.D. Coverley: Califia 1999
  - http://en.wikipedia.org/wiki/Hypertext_fiction

- 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

Inigo Gets Out
by
Amanda Goodenough

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.
- http://www.ist-nm2.org/

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

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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*

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*

Semantic Graph

diplomacy best solution

war best solution

war not solution

← → = support

← → = contradict

Toulmin model

| Data | | Claim |

Qualifier

Warrant

Condition

Backing
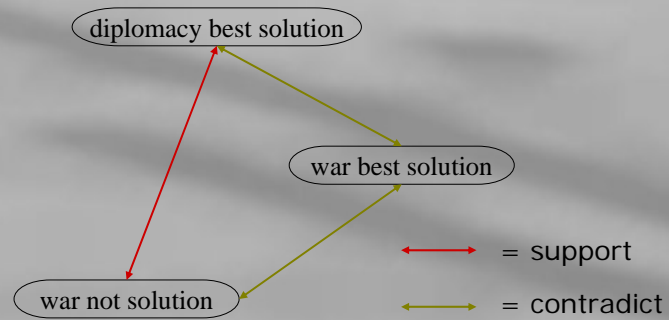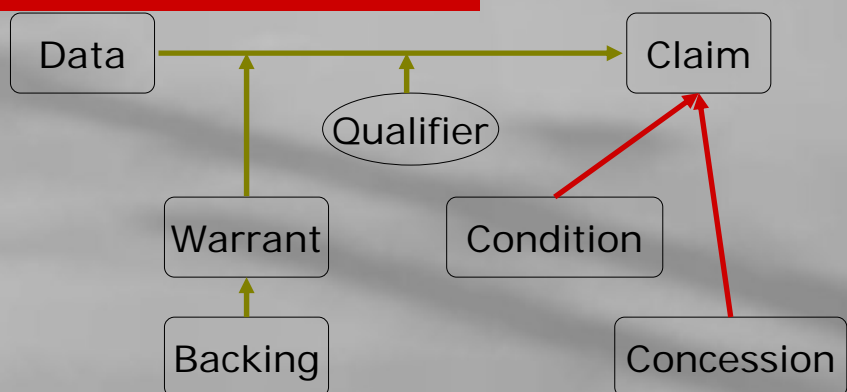
Concession

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
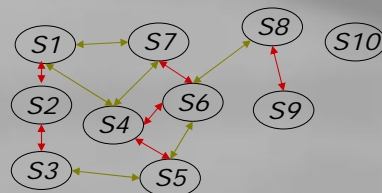
weaken

Concession

I am not a fan of military actions

Claim → *support*

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

S1 S7 S8 S10
S2 S6 S9
S4
S3 S5

↔ = support
↔ = contradict

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/

- This research was funded by the Dutch national ToKeN I^{2}RP and CHIME projects.

Conclusions

- Hypermedia narrative is still an experimental art form
  Marc Bernstein http://www.eastgate.com/
  Online magazine Tekka
  http://www.eastgate.com/catalog/Tekka.html
  Online writing centre 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"