Generating video documentaries from annotated media repositories

Stefano Bocconi, Frank Nack
CWI Amsterdam
The Netherlands
Contact: Stefano.Bocconi@di.unito.it

CWI

Talk Outline

- ☐ Motivation
- ☐ Example
- ☐ Scenarios
- ☐ Technical details
  - ■ Annotations
  - ■ Editing Process
- ☐ Conclusions

2

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

3

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

4

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

Scenarios

- ☐ Augmenting one interview with man-on-the-street opinion ("Vox Populi" documentary)
- ☐ Overview of the content of video footage:
  - ■ Example: trailers ("Voices of Iraq")
  - ■ Browse the content by opinion

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)
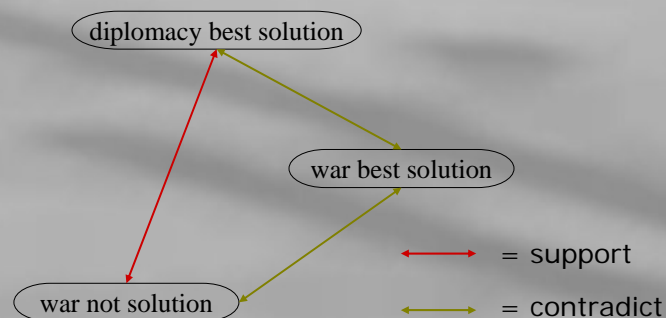 - E.g. **war** *opposite* **diplomacy**

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)
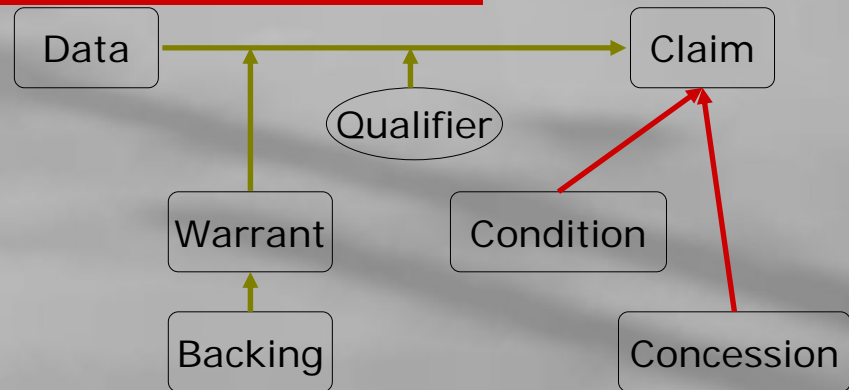- ■ edges are either *support* or *contradict*

11

Semantic Graph

⬭ diplomacy best solution

⬭ war best solution

⬭ war not solution

⟷ = support

⟷ = contradict

12

6

Toulmin model

Data → Claim

Qualifier

Warrant

Condition

Backing

Concession

57 Claims, 16 Data, 4 Concessions,
3 Warrants, 1 Condition

13

Analysis of the Example

Two billions dollar bombs on tents

Claim

contradict

Claim

I cannot think of a more effective solution

weaken

Concession

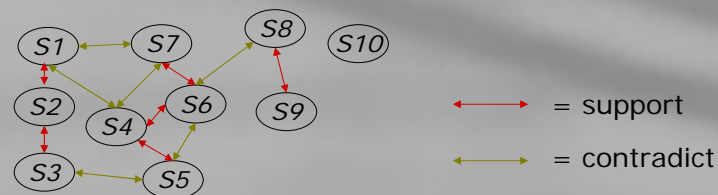**I am not a fan of military actions**

Claim

support

War has never solved anything

14

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 S4 S6 S9
S3 → S5

←——→ = support
←——→ = contradict

15

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)

16

Vox Populi interface

Question	Interviewee	Opinion	
Why did they do what they did?	Cameroun Parking Guard at Stamford	War in Afghanistan - Pro	**Position**
What do you think of the casualties among civilians?	Lawyer in Harward		
What do you think of the Afghanistan war?			
What are the consequences of the war?			
What are the roots of the problem?			
What do you think about the Anthrax?			

Age	Education	Employment	GeoLocation	Race	Religion	Sex	
Middleage	HighEducated	HighIncomeJob	NotUSA	AmericanIndian	Atheist	Female	**First Character**
Old	LowEducated	LowIncomeJob	USA	Asian	Christian	Male	
Teenager	MediumEducated	MiddleIncomeJob		Black	Muslim		
Young		Retired		Hispanic			
		Student		White			

Age	Education	Employment	GeoLocation	Race	Religion	Sex	
Middleage	HighEducated	HighIncomeJob	NotUSA	AmericanIndian	Atheist	Female	**Second Character**
Old	LowEducated	LowIncomeJob	USA	Asian	Christian	Male	
Teenager	MediumEducated	MiddleIncomeJob		Black	Muslim		
Young		Retired		Hispanic			
		Student		White			

Strategy
- ○ None
- ● Create Clash
- ○ Create Support
- ○ Vox Populi

Bandwidth
- ○ Low Bandwidth
- ● Medium Bandwidth
- ○ High Bandwidth

Intercut
- ● True
- ○ False

Caption
- ○ On (can cause problems)
- ● Off

Done   Reset

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

18

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^2RP and CHIME projects.