



CWI

From Linked Data to Stories: Using explicit semantics to improve interactive information access

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CWI, Information Access

Utrecht University, Interaction Technology

About 2,420,000 results (0.40 seconds)

Lessons from the War in Afghanistan - C-Span



www.c-span.org/video/?311930...war-afghanistan

Apr 5, 2013

"The War in Afghanistan: What Went Wrong? YOU WOULD THINK WE WOULD HAVE DEVOTED THE BULK OF ...

Extended Presence of U.S. Military Will Not Bring an End to ...



therealnews.com/idirect.php?i=11922

McChrystal and the Afghan military "solution" Pt1 ... September 11 Crisis , Ending the US War in Afghanistan

Americans Split On Whether Afghanistan War Was A Mistake



www.huffingtonpost.com/.../afghanistan-war-mistake...

Feb 9, 2013

When I think of Afghanistan the very first word that pops into my mind is ... their control and we will ...

Afghanistan's future after Nato troops leave uncertain ...



www.theguardian.com World Afghanistan

Apr 10, 2013

Afghans will determine their own fate, says defence secretary, as MPs warns country could descend into civil ...

PressTV - 'War no solution to Afghan crisis'



edition.presstv.ir/detail/175594.html

Apr 19, 2011

Violence and insecurity persists in war-torn Afghanistan despite the ... I do not think that there is a ...

LIST OF RELEVANT VIDEOS

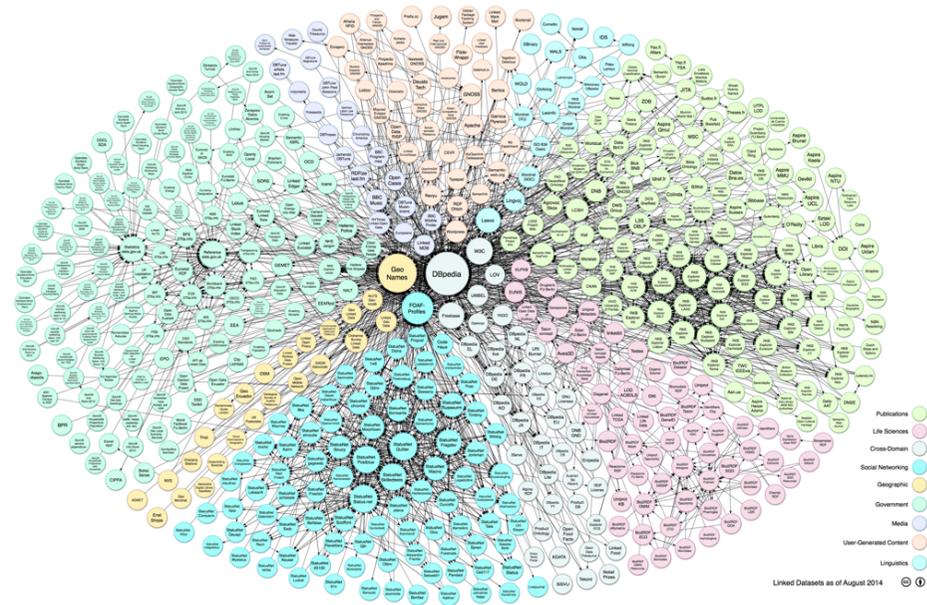
What do you think of war as a solution in Afghanistan?



Research Question: How do we get from lists to stories?



■ Content



■ Descriptions

故事

■ Glue

Content



Content for concept "Woman"



<http://dbpedia.org/resource/Woman>

Descriptions for image

`dbpedia.org/resource/Woman`

`dbpedia.org/resource/Head`



`dbpedia.org/resource/Glasses`

What do you think of war as a solution in Afghanistan?



- Which concepts are mentioned?

dbpedia.org/resource/Bomb



👁 Browse using ▾

📄 Formats ▾

🔗 Faceted Browser

🔗 Sparql Endpoint

About: Bomb

An Entity of Type : [Thing](#), from Named Graph : <http://dbpedia.org>, within Data Space : dbpedia.org

A bomb is one of a range of explosive weapons that rely on only the exothermic reaction of an explosive material to provide an extremely sudden and violent release of energy (an explosive device). Detonations inflict damage principally through ground- and atmosphere-transmitted mechanical stress, the impact and penetration of pressure-driven projectiles, pressure damage, and explosion-generated effects.

Property	Value
dbo:abstract	<ul style="list-style-type: none">A bomb is one of a range of explosive weapons that rely on only the exothermic reaction of an explosive material to provide an extremely sudden and violent release of energy (an explosive device). Detonations inflict damage principally through ground- and atmosphere-transmitted mechanical stress, the impact and penetration of pressure-driven projectiles, pressure damage, and explosion-generated effects. Bombs have been in use since the

http://dbpedia.org/resource/ War_in_Afghanistan



👁 Browse using ▾

📄 Formats ▾

🔗 Faceted Browser

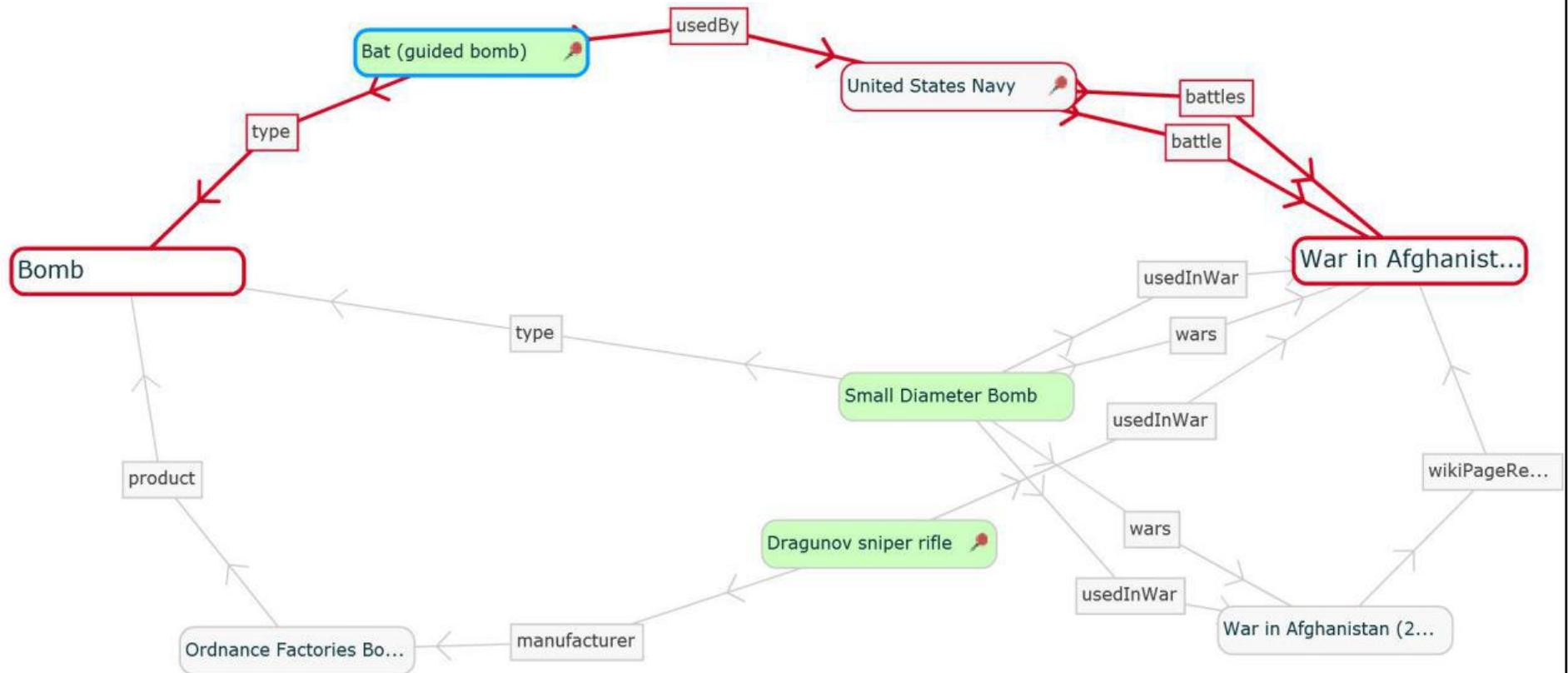
🔗 Sparql Endpoint

About: War in Afghanistan

An Entity of Type : [Thing](#), from Named Graph : <http://dbpedia.org>, within Data Space : dbpedia.org

Property	Value
dbo:wikiPageDisambiguates	<ul style="list-style-type: none">dbr:Soviet–Afghan_Wardbr:Civil_war_in_Afghanistan_(1989–92)dbr:Civil_war_in_Afghanistan_(1992–96)dbr:Civil_war_in_Afghanistan_(1996–2001)dbr:War_in_Afghanistan_(1978–present)dbr:War_in_Afghanistan_(2001–present)dbr:War_in_Afghanistan_(2015–present)
dbo:wikiPageID	<ul style="list-style-type: none">1749346 (xsd:integer)
dbo:wikiPageRevisionID	<ul style="list-style-type: none">683540235 (xsd:integer)

Linking Bomb to War in Afghanistan



Glue examples

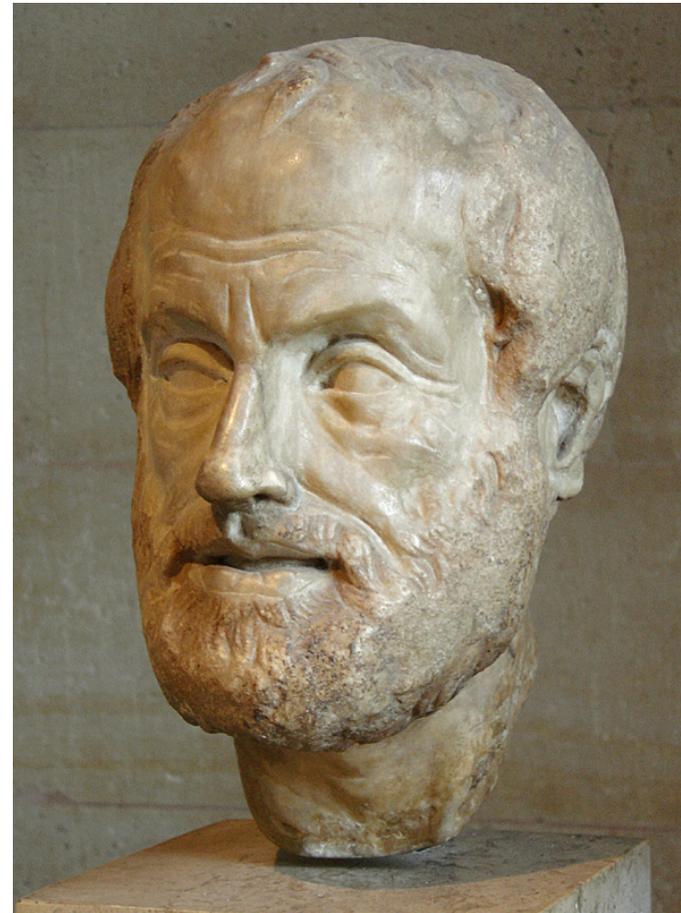
- Aristotle's Art of Rhetoric
 - Logos, ethos, pathos
- Film theory

故事

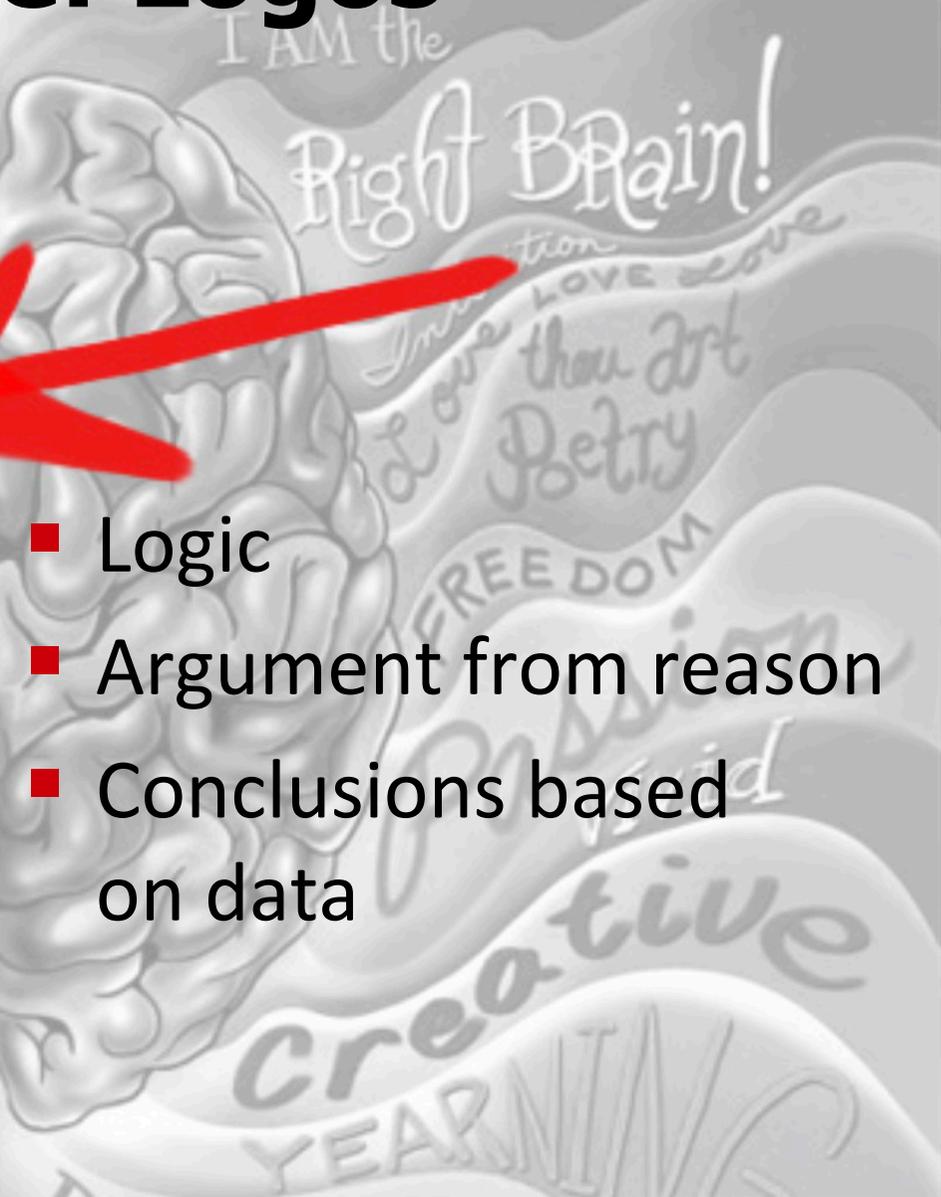
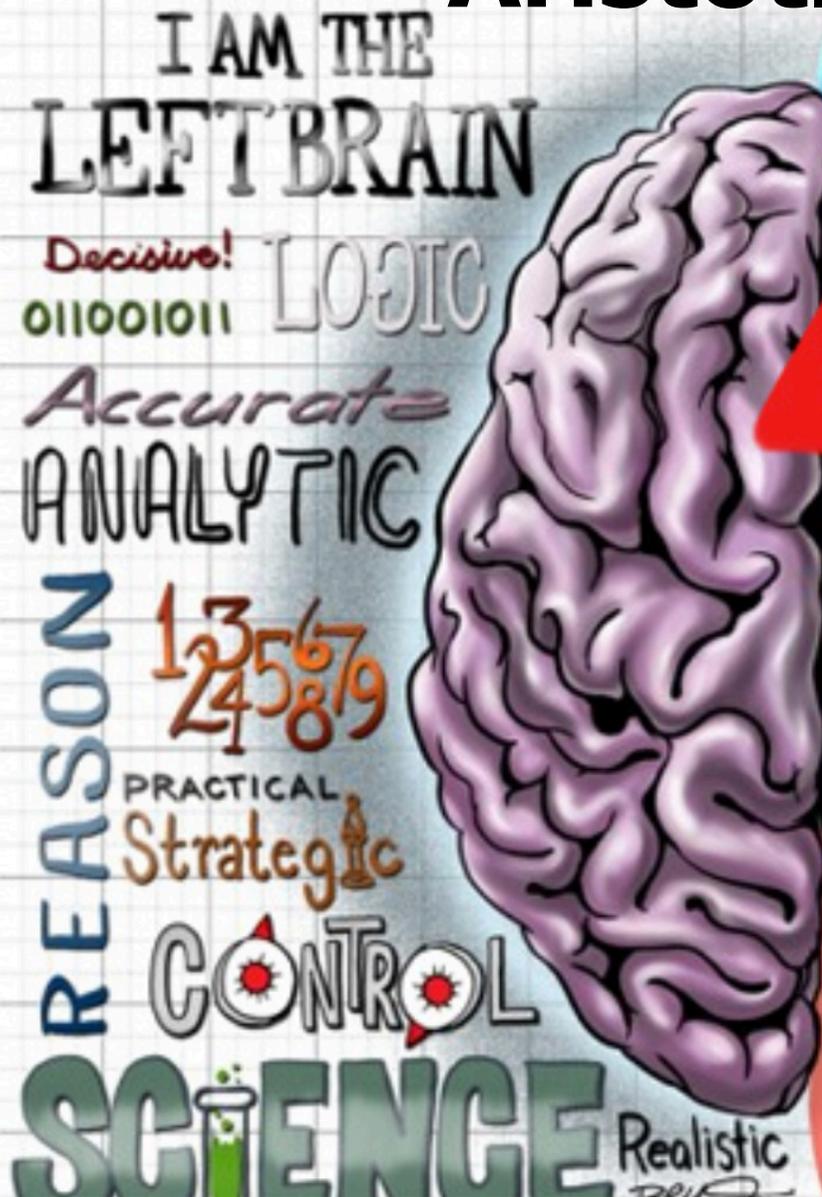
Aristotle

Art of Rhetoric

- Logos
- Ethos
- Pathos



Aristotle: Logos



- Logic
- Argument from reason
- Conclusions based on data

Aristotle: Ethos



Who are you more likely to believe?

Aristotle: Pathos



Film theory: Kuleshov Effect



https://www.youtube.com/watch?v=_gGl3LJ7vHc

Film theory: inferring story



The Birth of a Nation, directed by D. W. Griffith, starring Lillian Gish, 1915
en.wikipedia.org/wiki/The_Birth_of_a_Nation

Glue

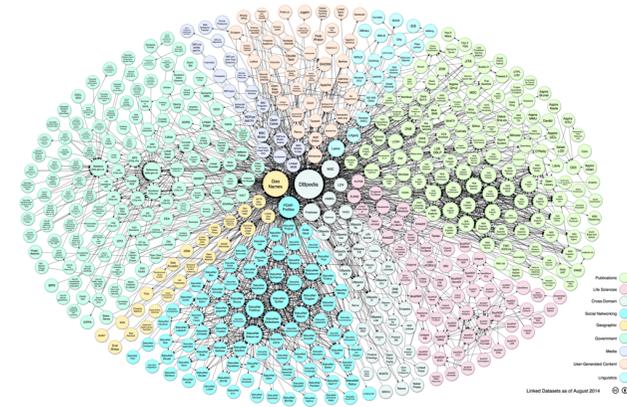


故事

What do we have so far?



■ Content



■ Descriptions



■ Glue



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What is the problem?

- List of results is ordered with respect to relevance to the query
 - not how a viewer understands video sequences
- Relationships among the video clips are ignored
 - in selecting and ordering
- Result does not convey the information to the user
- We want a selection of clips that *together* combine information for the viewer

Where are we now?

- Information processes in which media and metadata play a role
 - “canonical processes of media production”
- Vox Populi
 - An example system that generates arguments in a sequence of videos

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Workflow for Multimedia Applications

- Identify and define a number of canonical processes of media production
- Community effort
 - 2005: [Dagstuhl seminar](#)
 - 2005: ACM MM Workshop on [Multimedia for Human Communication](#)
 - 2008: Multimedia Systems Journal Special Issue
(core model and companion system papers)
editors: *Frank Nack, Zeljko Obrenovic and Lynda Hardman*





Canonical Reduced to the simplest
and most significant form possible,
without loss of generality

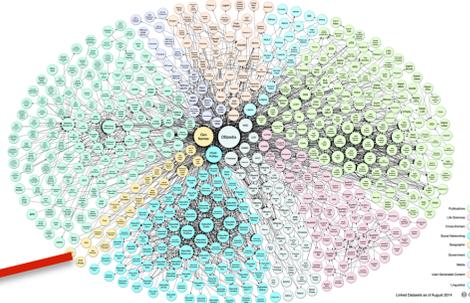
Overview of Canonical Processes



Premeditate — 故事

Create

Annotate



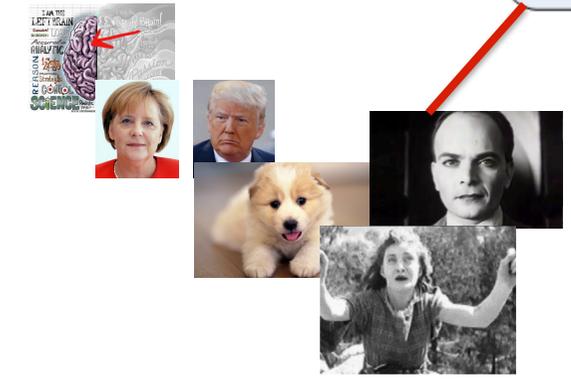
Construct Message — 故事

Package

Query

Organize

Publish



Distribute

Example application areas

- multimedia feature extraction systems
- professional news production systems (VRT)
- new media art
- hyper-video production
- photo book production (CeWe)
- ambient multimedia systems with complex sensory networks

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CWI

Vox Populi: Generating video documentaries from annotated media repositories

Stefano Bocconi, Frank Nack (CWI, Amsterdam) 2006

Video material

- **Interview with America**

video footage with interviews and background material about the opinion of American people after 9-11

www.interviewwithamerica.com

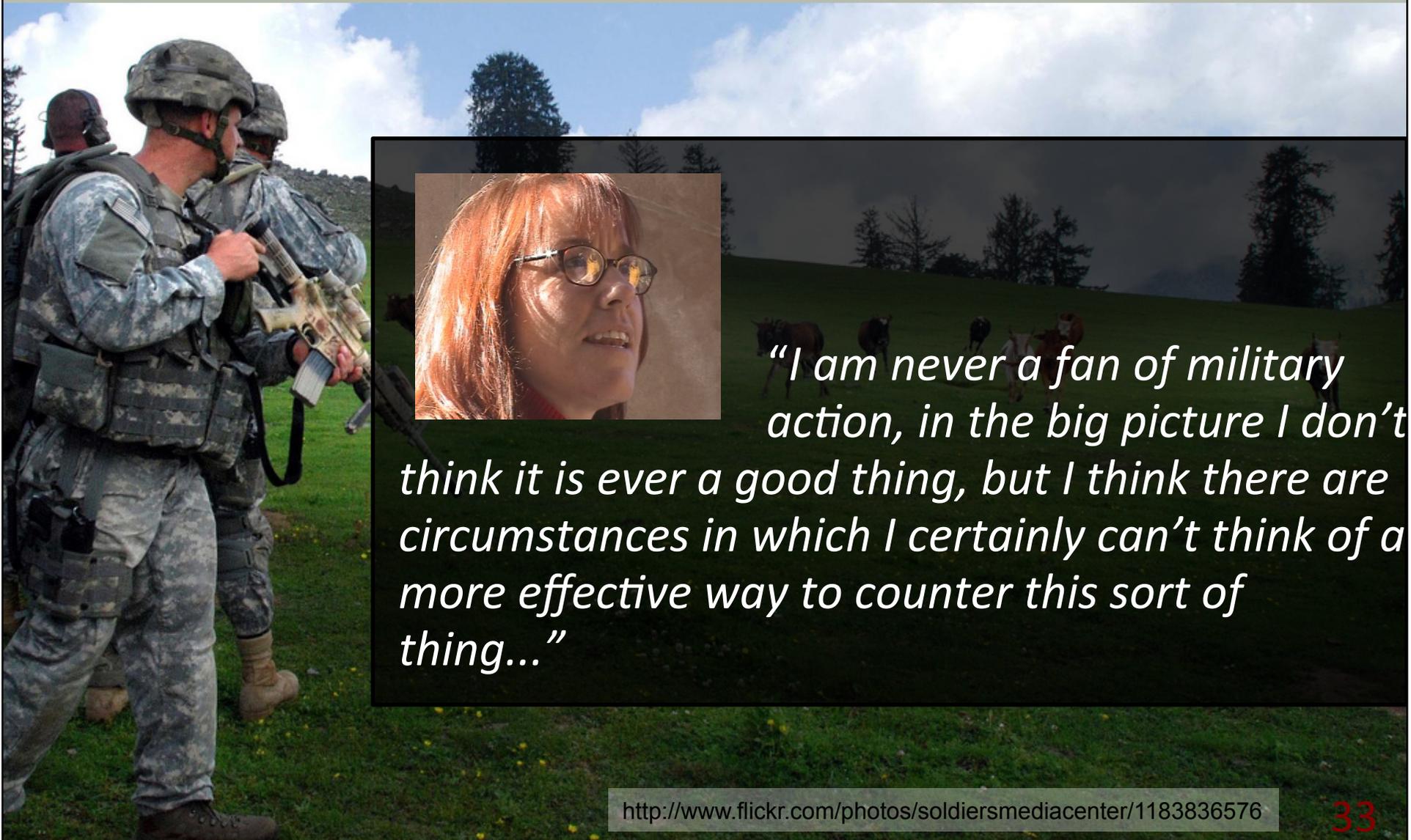
- Filming 27-10-2001 to 01-11-2001 in Stamford (CT), New York (NY), Boston (MA) and Cleveland (OH)

Premeditate

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 sequence creation:
 - Annotate the video material
 - Show automatically what the user asks to see, using presentation forms a film editor would use

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..."

Generating a short sequence

What do you think of the war in Afghanistan?

**War has
never solved
anything**

**Two billions
dollar bombs
on tents**



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

**I cannot think
of a more
effective
solution**

The annotations

Rhetorical (**logos**)

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

Annotate

Descriptive

- Question asked (**logos**)
- Interviewee (social, **ethos**)
- Filmic *next slide*



Filmic annotations

Continuity, e.g.

- camera movement
none, pan left/right, shaking, tilt up/down, zoom in/out
- framing continuity (**pathos**)
close-up, medium shot, long shot
- gaze direction of speaker
left, centre, **right**
- lighting conditions
- background sound (**pathos**)

Annotate



Statement encoding

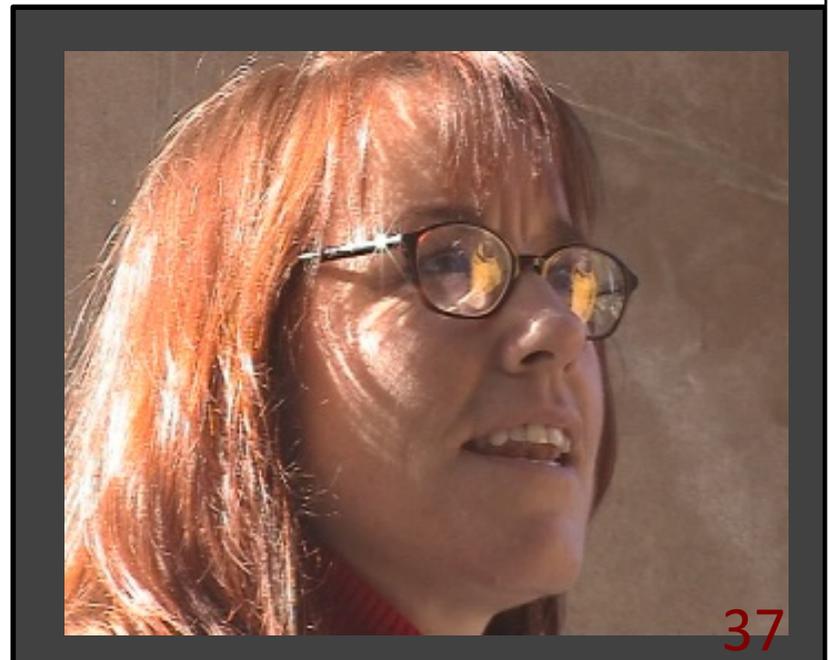
3-part statement:

- <subject> <*modifier*> <predicate>
- E.g. “**war best solution**”

Annotate

Thesaurus (pre-Wordnet) containing:

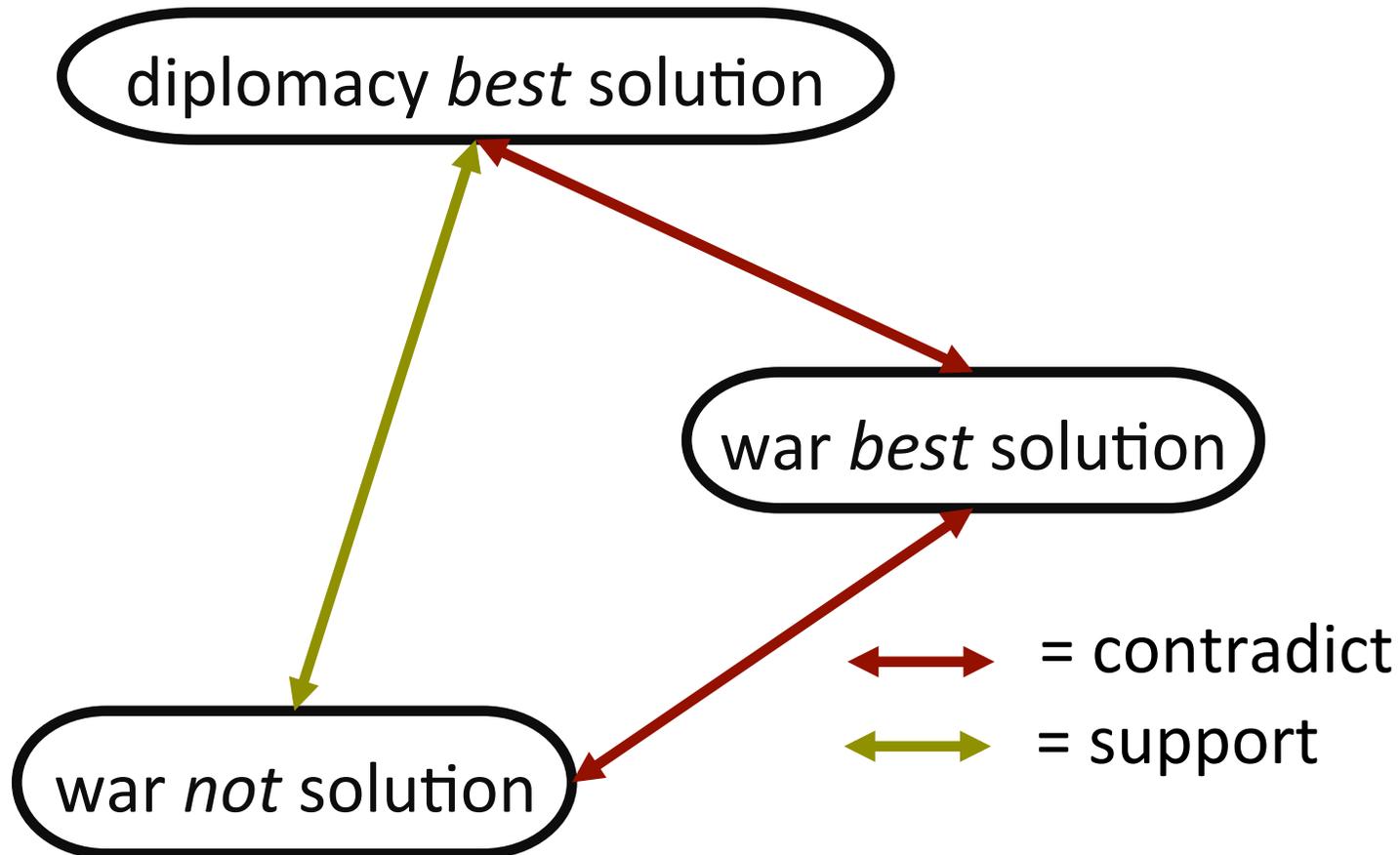
- Terms (155)
 - Relations between terms:
 - similar (72),
 - opposite (108),
 - generalization (10),
 - specialization (10)
- e.g. **war opposite diplomacy**



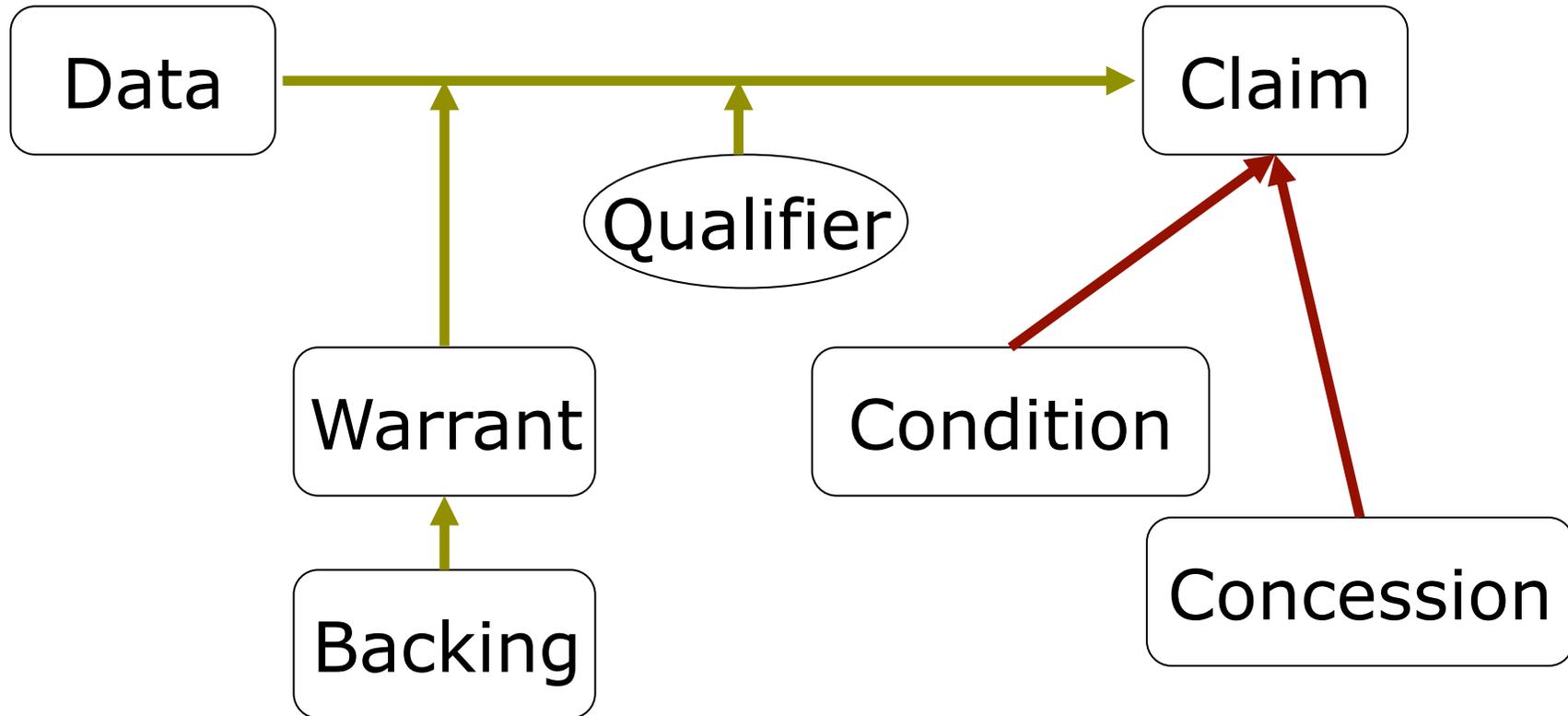
Connect statements

- 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*

Statement Graph - domain



Toulmin model (logos)



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

Putting it all together

Two billions dollar bombs on tents



Claim

contradict



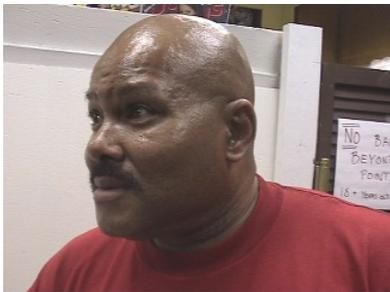
Claim

I cannot think of a more effective solution

weaken

Concession

I am not a fan of military action



Claim

support

Organize

War has never solved anything

What do you think of the war in Afghanistan?

Publish

War has never solved anything

Two billion dollar bombs on two dollar tents



I am not a fan of military action

I cannot think of a more effective solution

Vox Populi interface

Question		Interviewee		Opinion		Position
<input type="text" value="What do you think of the Afghanistan war?"/>		<input type="text" value="Lawyer in Harward"/>		<input type="text" value="War in Afghanistan - Pro"/>		

Age	Education	Employment	GeoLocation	Race	Religion	Sex	First Character
<input type="text" value="Middleage"/>	<input type="text" value="HighEducated"/>	<input type="text" value="HighIncomeJob"/>	<input type="text" value="NotUSA"/>	<input type="text" value="AmericanIndian"/>	<input type="text" value="Atheist"/>	<input type="text" value="Female"/>	

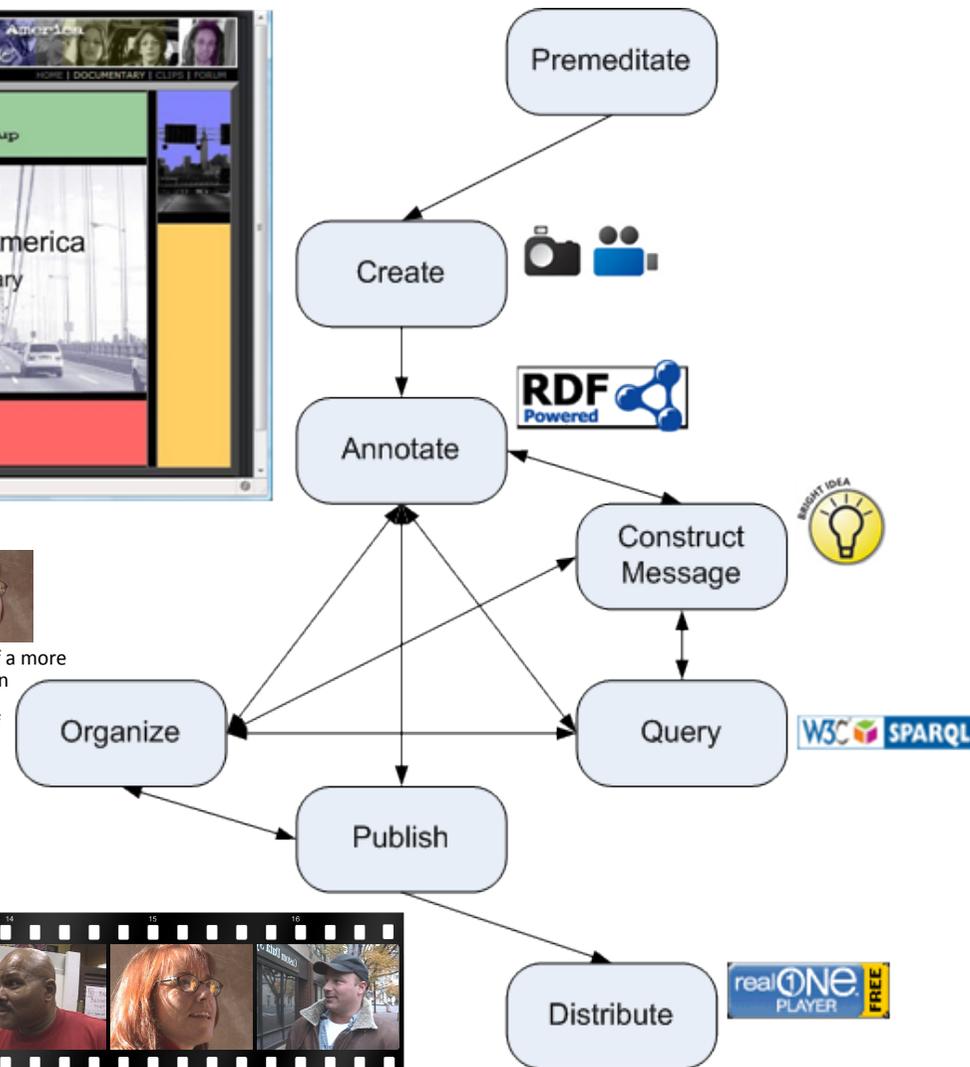
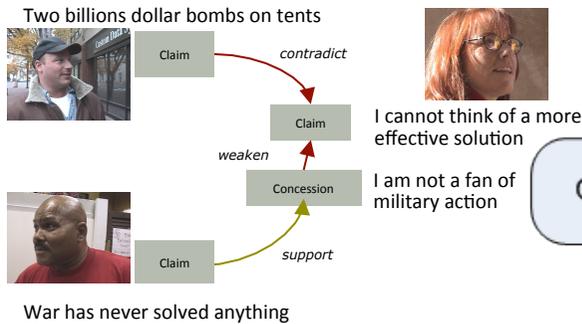
Age	Education	Employment	GeoLocation	Race	Religion	Sex	Second Character
<input type="text" value="Middleage"/>	<input type="text" value="HighEducated"/>	<input type="text" value="HighIncomeJob"/>	<input type="text" value="NotUSA"/>	<input type="text" value="AmericanIndian"/>	<input type="text" value="Atheist"/>	<input type="text" value="Female"/>	

Strategy	Bandwidth	Intercut	Caption	Query
<input checked="" type="radio"/> Create Clash	<input type="radio"/> Low Bandwidth	<input checked="" type="radio"/> True	<input type="radio"/> On (can cause problems)	

Done Reset

Construct Message

Vox Populi Processes



Vox Populi 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

Pointer & Acknowledgments

- More on VoxPopuli at:
<http://www.cwi.nl/~media/demo/VoxPopuli/>
- VoxPopuli was funded by the Dutch national ToKeN I²RP and CHIME projects

How can annotations help?

What can be expressed explicitly?

- the message to be conveyed
- objects that are depicted in a media asset
- domain information (e.g., art, painter)
- human communication roles (discourse)

What can they be used for?

- disambiguating query terms
- grouping similar items for conveying topic breadth
- visualizing items for presentation, e.g. timeline, map
- finding similar items
- organising the order of presentation

What can be expressed?

- The story/message to be conveyed, e.g.
 - War is not effective
- objects that are depicted in the video clip
 - linked descriptions from LOD
- how we communicate the story, e.g.
 - Toulmin
 - logos, ethos, pathos
 - film theory

What next?

- Build on Vox Populi semantic graph engine generation and selection for other discourse models
- Explore other domains where discourse is valuable
 - forming opinions on environmental issues
 - education, crime-solving
- Long-term goal is to have a collection of related discourse models

Acknowledgements



Jacco van
Ossenbruggen



Frank Nack



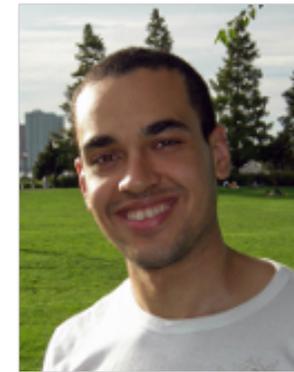
Raphaël Troncy



Stefano
Bocconi

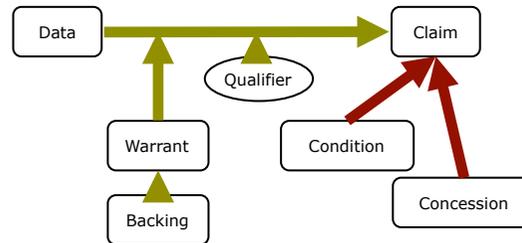
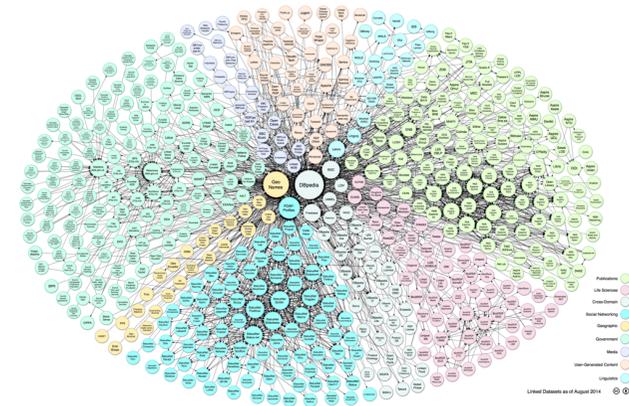


Ana Carina
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Andre Fialho

From Linked Data to Stories



故事



Literature

- Special Issue on Canonical Processes of Media Production
<http://link.springer.com/journal/530/14/6/>
<http://www.cwi.nl/~media/projects/canonical/>
- Lynda Hardman, Zeljko Obrenovic, Frank Nack, Brigitte Kerhervé and Kurt Piersol: *Canonical Processes of Semantically Annotated Media Production*. [Multimedia Systems Journal](#), 14(6), 2008
- Philipp Sandhaus, Sabine Thieme and Susanne Boll: *Canonical Processes in Photo Book Production*. [Multimedia Systems Journal](#), 14(6), 2008
- Stefano Bocconi, Frank Nack and Lynda Hardman: *Automatic generation of matter-of-opinion video documentaries*. [Journal of Web Semantics](#), 6(2), p139-150, 2008.
- Ana Carina Palumbo and Lynda Hardman: *User information needs for environmental opinion-forming and decision-making in link-enriched video*
In [EuroITV '13](#), pp 85-88