



Faculty of Science

# **Link-enriched video: user information needs for environmental opinion-forming and decision-making**

Thesis - Master Information Science, Program Human Centered Multimedia

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# OBJECTIVE

To specify the information that should be captured in an annotation schema for a link-enriched video approach that meet users' information requirements to support processes of opinion-forming and decision-making on environmental issues.

## Specific objectives

1. To identify information that can be provided  
(literature and experts interviews)
2. To identify and prioritise users' information requirements (user survey and experiment)





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## RESULTS: Expert interviews

Information that could be captured

### Details of the environmental problem

Basic description	Type – Subject – Location – Date Physical, chemical and biological processes
Impact	Scale (individual, local regional, national, global) Affected (human communities, health, species)
Temporality	Background of the issue (lessons learned, causes) – Current situation - Outcomes (short-term) – Future scenarios
Personal implications	Responsibilities Tools to participate
People involved	Types of actors Objectives

**Position or opinion**

Argument	Direction (favorable, unfavorable, neutral) – Ethos, pathos/intensity, logos - Temporality (past, present, future) - Benefits Relation to other arguments (opposite, similar) – Statement/s (claim, premises, supporting, premises refuting) - Dimensions (Scientific, social, cultural, economic, political, ethical, technical, legal, safety and security, historical).
Person	Type of actor - Details (age, name, culture, values, profession and occupation, location, educational background, biography) - Arguments expressed – Personal benefits.
Public opinion	Stage of attention cycle (saliency) Distribution (extent of consensus)

**Scene**

Source	Name Level of trustworthiness
Details	Date – Place
Type	Monologue, interview, discussion
Links to external sources	Wikipedia - Books - Magazines - Scientific papers and reports - Newspapers - Documentaries – Videos - TV programs - Websites - Social sites – Radio broadcasts.

## **RESULTS: User survey**

### **Most relevant information**

- ❑ Factual information
- ❑ Diverse opinions, discussions
- ❑ Basic descriptions
- ❑ Dimensions: scientific and technical, safety and security (health)
- ❑ Person: personal benefits, organisations s/he belongs, profession and occupation
- ❑ Source (publisher/broadcaster).
- ❑ Sources to enrich: scientific publications, documentaries, news
- ❑ Actors: scientists

## Facts and opinions



70%: blend of facts  
and opinions



78%: opinion

- Importance of making the difference
- Difficulty to make the difference in discourses
- Contradiction when judging: equally useful



## Results: open-ended questions

Most relevant types of information:

- Factual, exact, unbiased and objective data – Neutral people
- Safety, security, health implications: risks, outcomes, consequences
- Advantages and disadvantages – Costs and benefits
- Alternatives – Level of community need



# CONCLUSION

## User information needs

- Preference of document approach over video fragment
- Need for a summary and overview including pros and cons
- Level of objectivity and subjectivity (facts and opinions)
- Alternatives and level of community need for the benefits of the processes causing the environmental issue
- Results as a starting point for an annotation schema

## Information to be captured on an annotation schema

### Details of the environmental problem

Basic description      Type – Subject and relation to other subjects – Location – Date – Physical, chemical and biological processes – Level of community need for the benefits

Impact      ~~Scale (individual, local regional, national, global) -~~  
Affected (human communities, health, species)

Temporality      ~~Background of the issue (lessons learned, causes) – Current situation –~~ Outcomes (short-term) – Future scenarios

Personal implications      Responsibilities  
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**Argument** Direction (favorable, unfavorable, neutral) – ~~Ethos~~, pathos, logos (objectivity and subjectivity) - Temporality (~~past, present, future~~) - Benefits – Relation to other arguments (opposite, similar) – Statement/s (claim, premises, supporting, premises refuting) - Dimensions (scientific, social, cultural, ~~economic, political, ethical, technical, legal~~, safety and security, ~~historical~~).

**Person** Type of actor - Details (age, name, ~~culture, values~~, profession and occupation, ~~location~~, educational background, ~~biography~~, organisations s/he belongs to) – Arguments expressed – Personal benefits.

~~Public opinion~~ ~~Stage of attention cycle (saliency)~~  
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## Scene

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## Acknowledgements

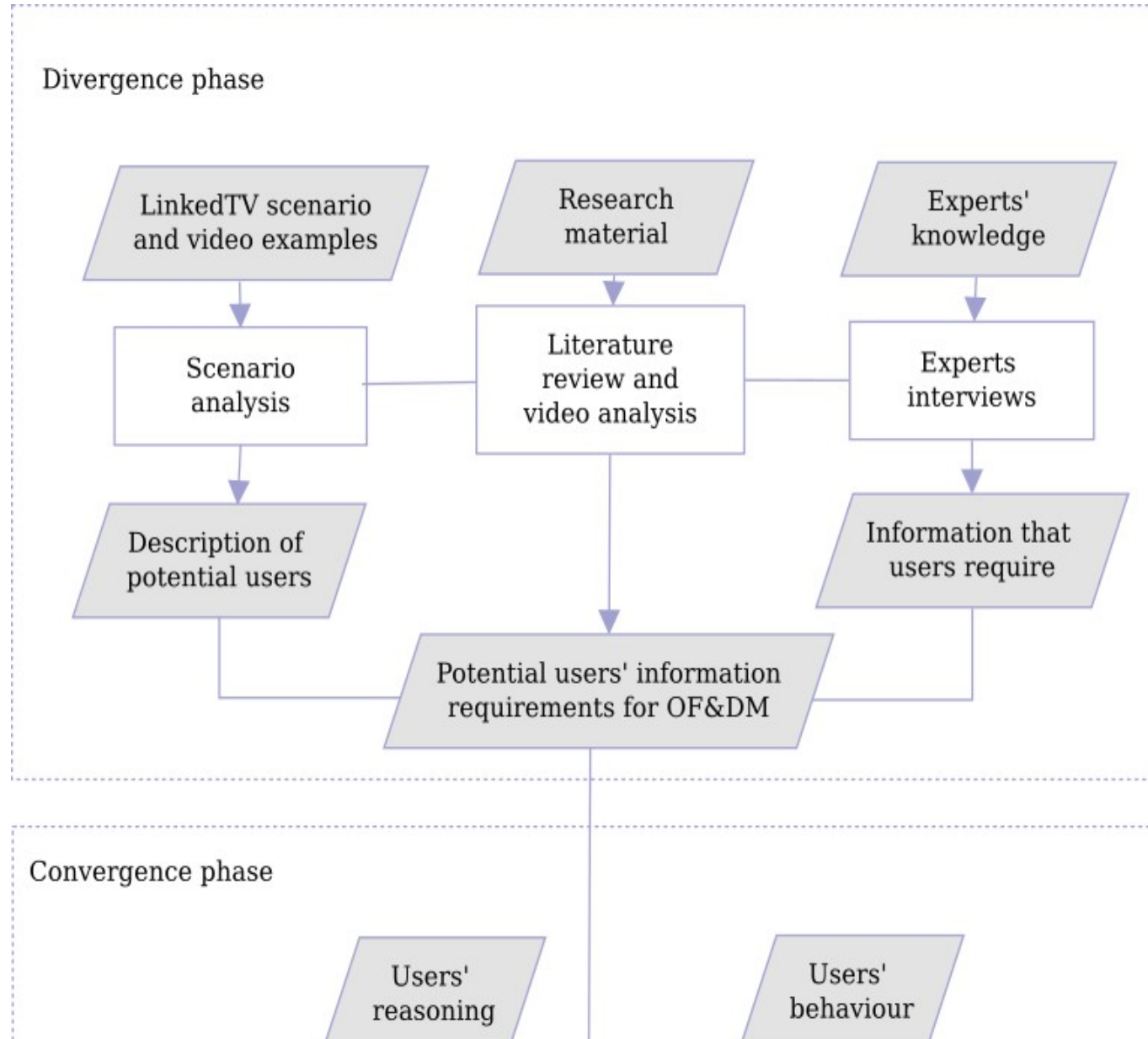
- Lynda Hardman, Centrum voor Wiskunde en Informatica
- Frank Nack, University of Amsterdam
- LinkedTV: Television Linked To The Web
- Daphne Willems, Daphnia: vision on rivers, The Netherlands
- Lotte Belice Baltussen, Research & Development Department, Netherlands Institute for Sound and Vision, The Netherlands
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- Emmanuelle Beauxis-Aussalet, Mieke Leyssen and Stefano Bocconi.

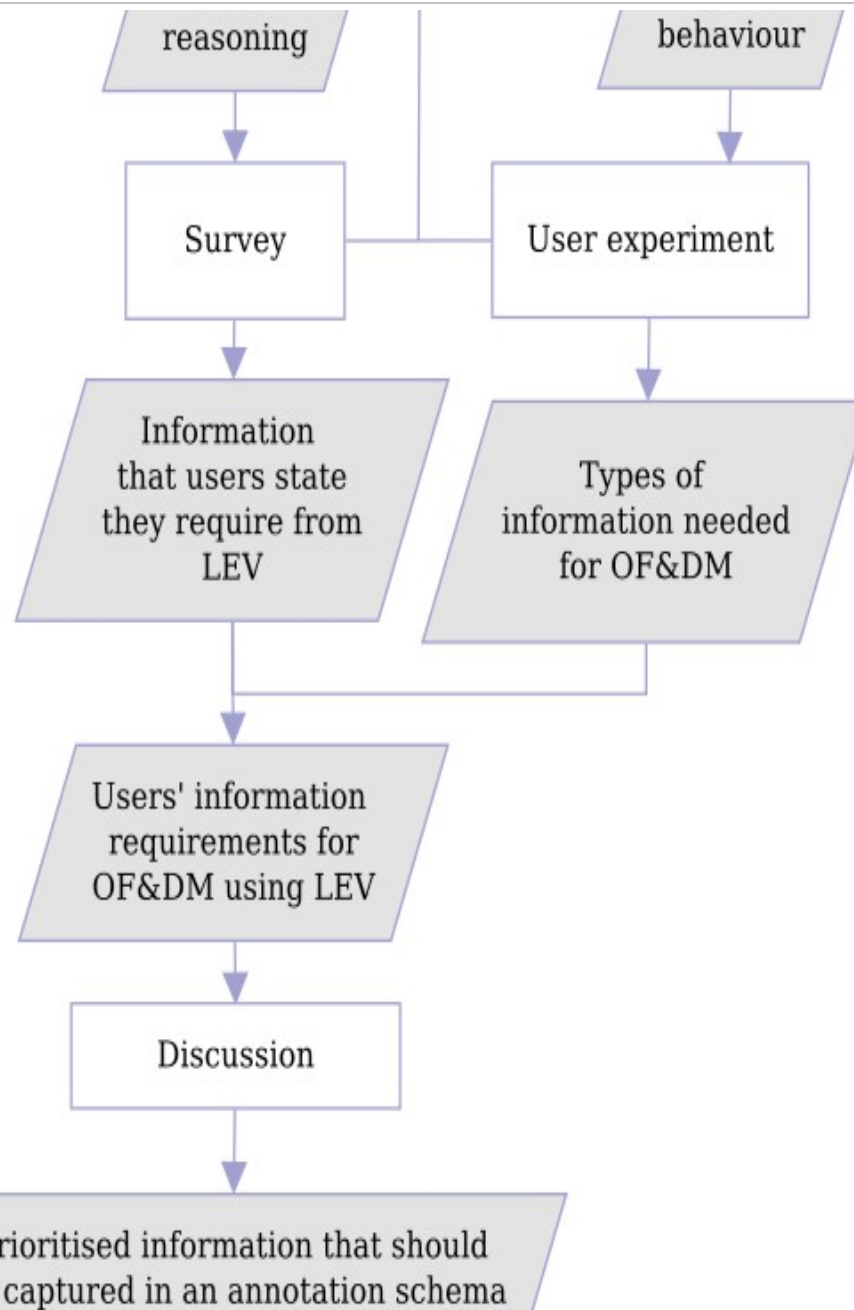


**Thank you. Questions?**



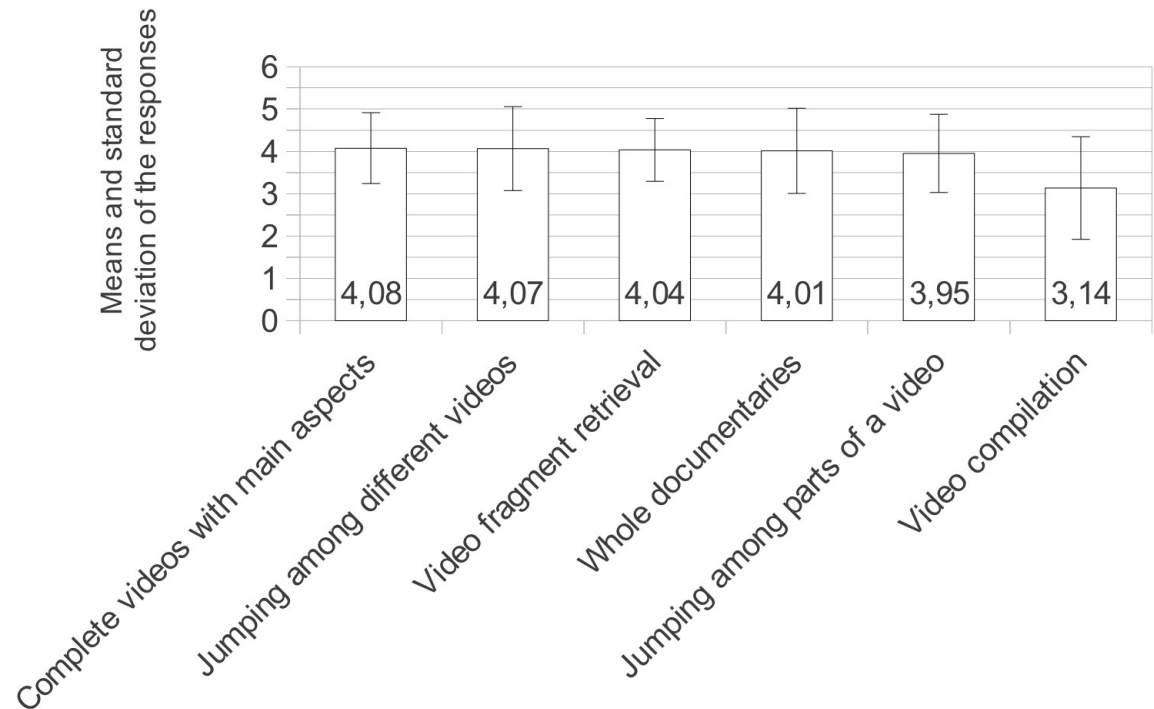
# Appendices

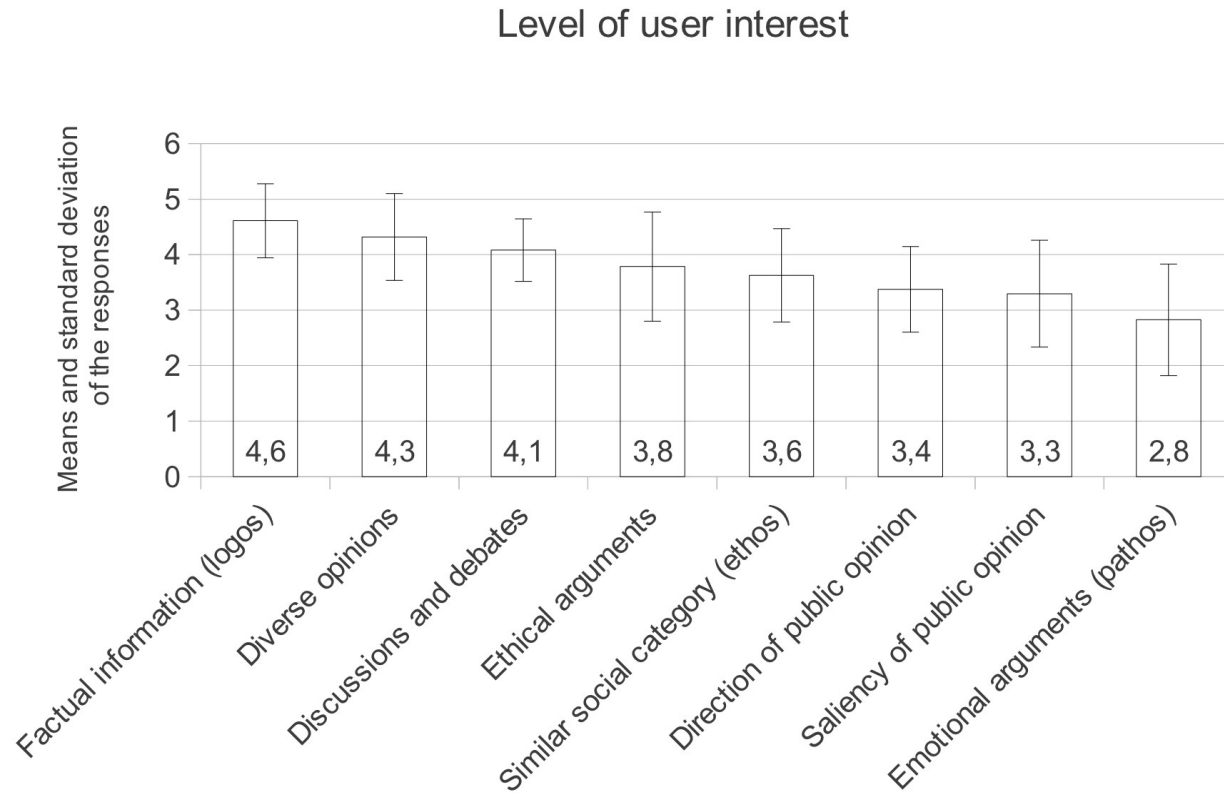




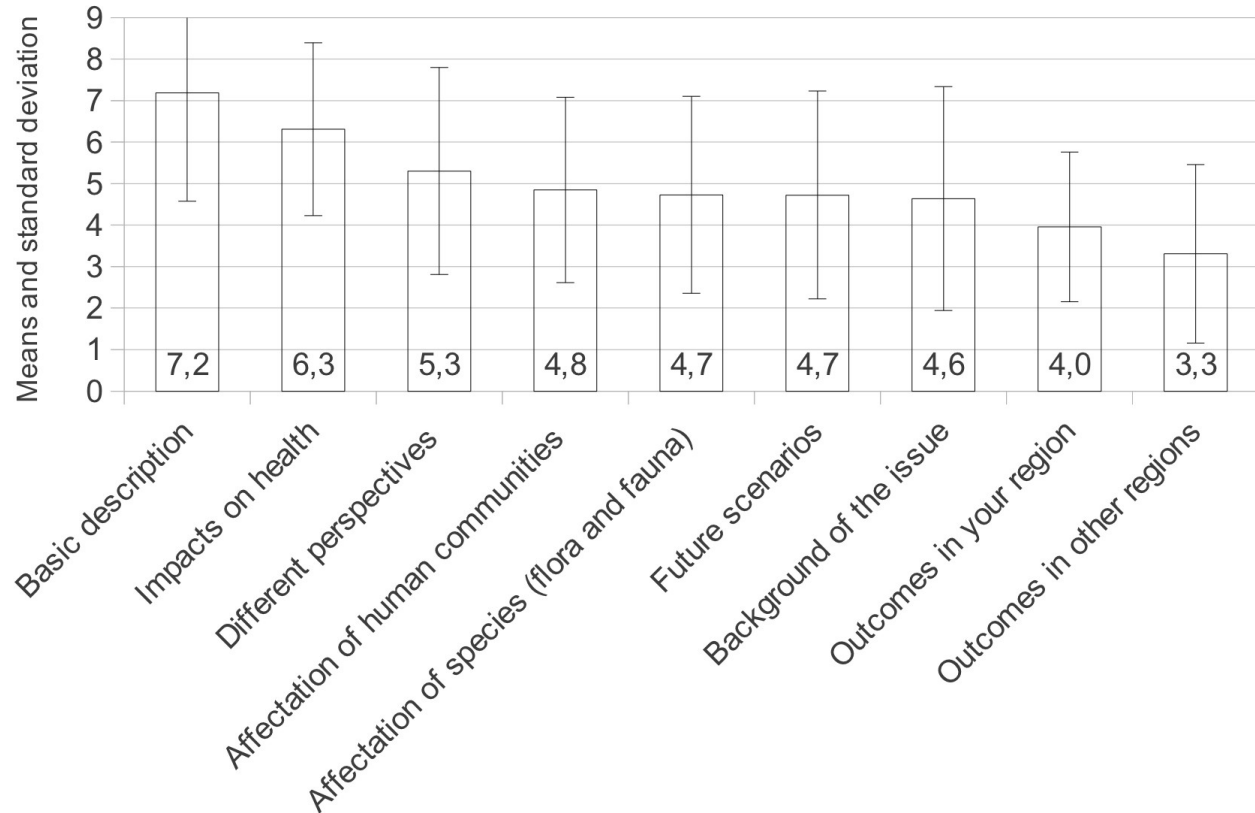


## Document and video segment approach: level of usefulness

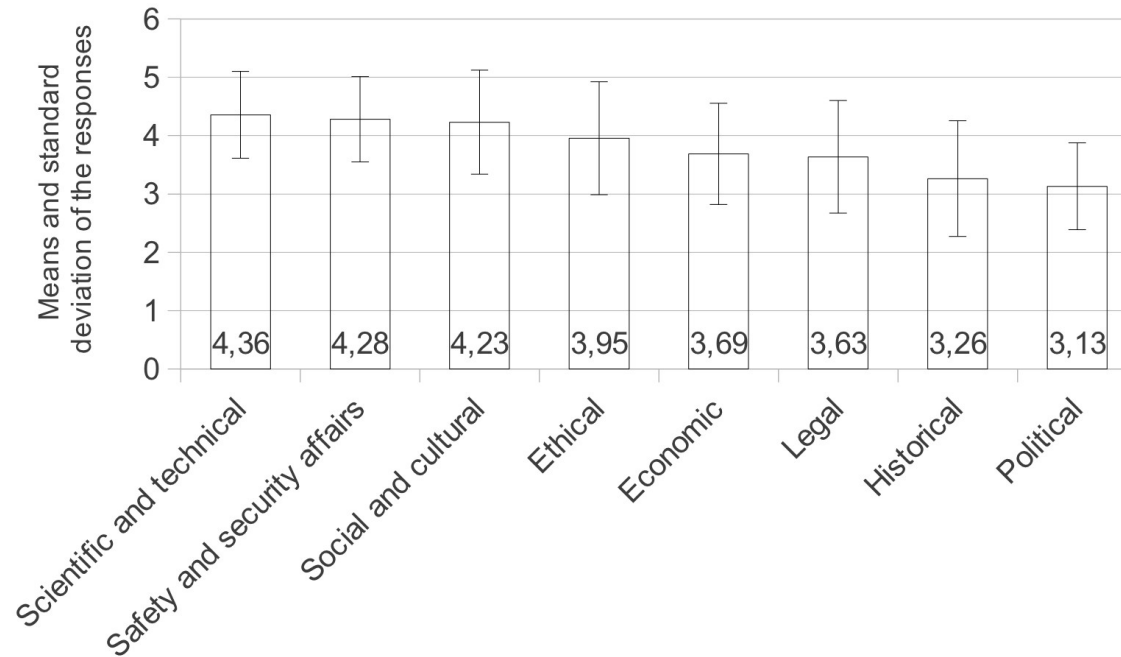




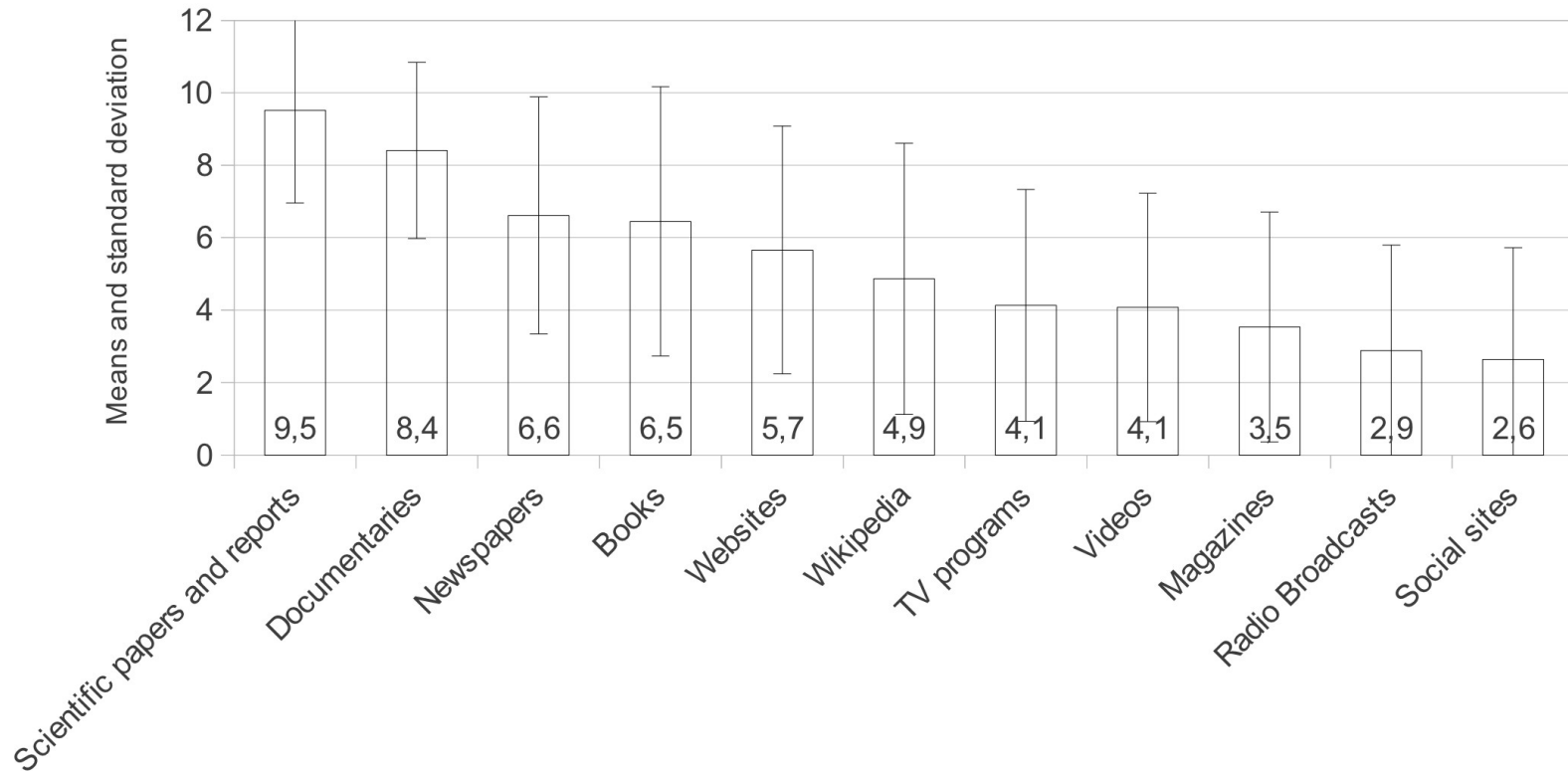
## Relevance of details of the problem



## Relevance of the dimensions of analysis



## Relevance of types of sources



## Relevance of types of actors

