EMAPS session

Introduction to visualising discourses and starting points for the use of discourse maps in risk communication

Axel Meunier (médialab Sciences Po, Paris)
Mark Fleischhauer (Institute of Spatial Planning, TU Dortmund)

CHANGES mid-term meeting
Technical skills course: Web-GIS and Spatial Data Infrastructure
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Aim of today's EMAPS session

- **Part 1 „Introduction"** *(approx. 30 mins)*
  - Introduction
  - Climate change: Communication challenges and potentials for controversies
  - Examples: Discourses on ageing and climate change

- **Part 2 „From data to controversy mapping"** *(approx. 60 mins)*
  - Short introduction round of CHANGES research topics and case study work
  - Expectations and needs
  - Role of case studies
  - Data and formats from the case studies
  - Discussion of visualisation options, possible outputs of the co-operation
  - Identification of co-operation options
    - research questions to focus on
    - useful data formats
    - next steps

Background of EMAPS project (2011-2014)

- EMAPS: Electronic Maps to Assist Public Science

- 7th RFP research project, "Science in Society" call SiS.2011.3.0.6-1

- Aim of EMAPS: To get a better understanding of
  - whether the web can provide a **meaningful equipment** to produce an enhanced interest of a wider public in science and technology issues,
  - not as receivers of information about end results of science, **but as potential participants in science in the making**
  - In line with "good governance", e.g. in risk communication

- Two issues:
  - **Ageing:** 1st project year, pre-test, almost finalised
  - **Climate change adaptation:** 2nd and 3rd project year, first steps already made

Co-operation request

- Aim of the EMAPS project: also involve decision-making and decision-makers at regional and local levels.

- Thus, the EMAPS project is looking for a co-operation
  - with researchers/scientists, practitioners/decision-makers and the public in order to
  - identify **controversies** around climate change,
  - to **visualise** these and
  - to confront researchers, decision-makers and the public with such "e-maps" in order to
    - help to make the **connection between science and society** more transparent and thus
    - **improve the quality of decision-making**.

Requests and offers

**What EMAPS would ask for
from CHANGES**

- First step: Collection of research questions and/or controversially discussed topics around (climate) change related topics at the regional and/or local level (rather open questions without clear answers, e. g. questions around "uncertainty")
(first exchange of research questions and comments has already happened in October 2012)
- Second step: Collection of information/data on discourses at the local/regional level if available (quantitative and/or qualitative/ narrative information such as documents, articles, websites, blog entries, survey results, interviews etc.);
- Setting-up of contacts between the researchers within the EMAPS project with the ESRs and ERs in the CHANGES project.

**What EMAPS can offer
to the CHANGES project**

- Develop visualisation tools and products for specific themes within the ESRs and ERs research topics;
- Visualise different positions, actors and their interdependencies within the CHANGES case studies;
- Help – if possible – with collecting the selected data (web based) for designing CHANGES related e-maps
- Develop tools and results that can be transferred to other areas/settings;
- Co-operative organisation of workshops about the visualisation of controversies;
- Participation in EMAPS project workshops about advanced visualisation tools.

Climate change and communication

- Communicate what to whom and why?
  - What? Assessment results, uncertainties, adaptation options, …
  - To whom? Science to decision-makers, science to public, local adminstrations to decision-makers, decision-makers to the public, …
  - Why? Improve the quality of decision-making, cope with complexity, trust building, use of local knowlegde, …

- Challenges for risk communication in climate change:
  - Uncertain
  - Complex
  - Controversial
  - Local perspective

Reusser et al. (2012): Presentation of uncertainties on web platforms for climate change information

Presentation of uncertainties on web platforms for climate change information

Dominik E. Reusser*, Markus Wrobel, Thomas Nocke, Till Sterzel, Hannah Förster, Jürgen P. Kropp

Potsdam Institute for Climate Impact Research, Potsdam, Germany

Abstract

Adaptation to climate change is gaining attention and is very challenging because it requires action at a local scale in response to global problems. At the same time, spatial and temporal uncertainty about climate impacts and effects of adaptation projects is large. Data on climate impacts and adaptation is collected and presented in web-based platforms such as ci:grasp, which is unique in its structuredness and by explicitly linking adaptation projects to the addressed climate impacts. The challenge to find an adequate and readable representation of uncertainty in this context is large and research is just in the initial phase to provide solutions to the problem. Our goal is to present the structure required to address spatial and temporal uncertainty within ci:grasp.

We compare existing concepts and representations for uncertainty communication with current practices on web-based platforms. From our review we derive an uncertainty framework for climate information going beyond what is

Harvison, Newman & Judd (2012): Ageing, the built environment and adaptation to climate change

Australia's policy response

- There is a distinct advantage in local government playing a key role in developing adaptive capacity to climate change impacts given that the risks and types of climate-induced exposures will be highly variable depending on the geographic location and settlement patterns across the nation therefore demanding local responses. This equally applies to adaptive strategies aimed at supporting the creation of age-friendly environments; land use planning and development controls, working in concert with the BCA have proven successful in increasing community resilience to climate change impacts through improving the structural performance of buildings, landscapes and other public infrastructure in the face of predicted environmental exposures (cyclones, severe storms, floods and storm surge, bushfire, heatwaves, etc).

- Adaption of existing building stock for climate change and to supporting ageing-in-place presents as a more significant issue within the Australian context rather than new development given the requirement to comply with the performance standards set by the Building Code of Australia addressing issues for extreme weather events, thermal comfort and energy efficiency as well as disability access.

Roeser (2012): Risk Communication, Public Engagement, and Climate Change: A Role for Emotions

Slovic's article has the telling title "Numbed by Numbers." Rational information might overwhelm us with the idea that our efforts will be fruitless. Instead, coming face to face with the destiny of a single person can successfully evoke a direct sense of compassion.

In a similar way, statistical information about climate change can be shrugged away easily as it is abstract and not attached with meaning. As Moser[2] argues, the case of climate change is especially challenging as it involves complex and uncertain information. Based on Slovic's work we can say that this can

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[1] Cf. Lorenzoni and Pidgeon,[5] who describe this attitude amongst people whom Pidgeon and colleagues have interviewed in another study; also cf. Moser[2] for similar findings. In rational choice theory these kinds of problems are characterized as prisoner's dilemmas; John's behavior could be analyzed as a free-rider behavior.

[2] Cf. Frank,[62] who emphasizes the role that otherregarding emotions can play in overcoming prisoner's dilemmas.

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is needed to correct emotions, but it has to be presented in an emotionally accessible way in order to be effective. This leads me to the next section.

5. MORAL EMOTIONS AND COMMUNICATION ABOUT CLIMATE CHANGE

The main goal of risk communication is to inform the public about risks. However, in the case of climate change, this gives rise to several problems. The first problem is that the scientific explanation of climate change is complex and not uncontroversial (although cf. Moser[2] for a discussion of how the idea that the evidence is not uncontroversial might be an artifact of biased communication and framing through the media). The question arises

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[3] Or dread or worry; all these notions are used more or less interchangeably in the literature on risk and emotion.[29]

Roeser (2012): Risk Communication, Public Engagement, and Climate Change: A Role for Emotions

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flying of other people.[1] Hence, John abandons his environmentalist attitudes that were initiated by his care about the environment and adopts a so-called rationalist stance that convinces him that he is entitled to fly by plane. John's case is an example where rationality can actually corrupt our appropriate moral emotions. Jane, on the other hand, finds her care about the environment more important than John's rational argument, even though she sees its logic. Jane's emotions are recalcitrant, they are contrary to our rational judgments and will not cease, although according to a rational argument, we should not have these emotions. A convinced rationalist will call such emotions irrational and claim that we should ignore them, but I think that these emotions can help us see something that our purely rational judgments are unable to detect. For example, sympathetic emotions can help to correct egoistic rational judgments.[2] Emotions can enable us to make better moral judgments, by helping us to reverse our mistaken rational judgments.

This idea finds support in empirical work by Paul Slovic. He has conducted a study that showed that

be overcome by presenting information in a way that appeals to emotions such as feelings of justice and sympathy for victims of climate change, in present and future generations. Complex statistics can be replaced or supplemented by understandable, gripping narratives.[2] This resonates well with the work by Nussbaum,[43] who emphasizes the role of art and narrative to expand our capacity to feel compassion from those that are close by to more distant others.

The question arises how we can distinguish disruptive emotions from justified or corrective emotions. Rationalists would propose that we need reason to assess emotions. However, as the example of John showed, reason is not necessarily superior to emotion. Rather, emotional moral judgments are justified if they can sustain reflection, but reflection is itself a process that requires emotions. In the case of risk, other-regarding, altruistic emotions can help us criticize our initial egoistic emotions as in the case of a NIMBY response.[60] In the case of climate change, such altruistic emotions can help us care about the needs and rights of people who are far away, even if it means that we have to make personal sacrifices by

Johnson (2012): Climate Change Communication: A Provocative Inquiry into Motives, Meanings, and Means

Perspective

Climate Change Communication: A Provocative Inquiry into Motives, Meanings, and Means

Branden B. Johnson*

The deliberately provocative theme of this article is that perceived difficulties in climate change communication (CCC)—e.g., indifference about or denial of climate change's reality, negative consequences, anthropogenic causes, or need to mitigate or adapt to it—are partly the fault of climate change communicators. Fischhoff's model of risk communication development is used to demonstrate that CCC to date has tended to stress persuasion, rather than social movement mobilization or deliberation, and with a focus on the model's early stages. Later stages are not necessarily better, but a more diverse strategy seems superior to a focus perhaps narrowed by empathic, ideological, psychological, and resource constraints. Furthermore, even within persuasion, emphasizing a wider set of values, consequences, and audiences could be fruitful. Social movement mobilization has its own set of weaknesses, but

Rabinovich & Morton (2012): Unquestioned Answers or Unanswered Questions: Beliefs About Science Guide Responses to Uncertainty in Climate Change Risk Communication

Unquestioned Answers or Unanswered Questions: Beliefs About Science Guide Responses to Uncertainty in Climate Change Risk Communication

Anna Rabinovich* and Thomas A. Morton

In two experimental studies we investigated the effect of beliefs about the nature and purpose of science (classical vs. Kuhnian models of science) on responses to uncertainty in scientific messages about climate change risk. The results revealed a significant interaction between both measured (Study 1) and manipulated (Study 2) beliefs about science and the level of communicated uncertainty on willingness to act in line with the message. Specifically, messages that communicated high uncertainty were more persuasive for participants who shared an understanding of science as debate than for those who believed that science is a search for absolute truth. In addition, participants who had a concept of science as debate were more motivated by higher (rather than lower) uncertainty in climate change messages. The results suggest that achieving alignment between the general public's beliefs about science and the style of the scientific messages is crucial for successful risk communication in science. Accordingly, rather than uncertainty always undermining the effectiveness of science communication, uncertainty can enhance message effects when it fits the audience's understanding of what science is.

Spence, Poortinga & Pidgeon (2012): The Psychological Distance of Climate Change

The Psychological Distance of Climate Change

Alexa Spence,[1,]* Wouter Poortinga,[2] and Nick Pidgeon[3]

Avoiding dangerous climate change is one of the most urgent social risk issues we face today and understanding related public perceptions is critical to engaging the public with the major societal transformations required to combat climate change. Analyses of public perceptions have indicated that climate change is perceived as distant on a number of different dimensions. However, to date there has been no in-depth exploration of the psychological distance of climate change. This study uses a nationally representative British sample in order to systematically explore and characterize each of the four theorized dimensions of psychological distance—temporal, social, and geographical distance, and uncertainty—in relation to climate change. We examine how each of these different aspects of psychological distance relate to each other as well as to concerns about climate change and sustainable behavior intentions. Results indicate that climate change is both psychologically distant and proximal in relation to different dimensions. Lower psychological distance was generally associated with higher levels of concern, although perceived impacts on developing countries, as an indicator of social distance, was also significantly related to preparedness to act on climate change. Our findings clearly point to the utility of risk communication techniques designed to reduce psychological distance. However, highlighting the potentially very serious distant impacts of climate change may also be useful in promoting sustainable behavior, even among those already concerned.

Co-operation opportunities and possible next steps

Date	Place	Project	Issue
11-14 Sep. 2012	Buzău County, Romania	CHANGES	Courses: presentation of EMAPS co-operation offer to CHANGES researchers
27 Nov. 2012	Dortmund, Germany	CHANGES	Project meeting: EMAPS workshop with interested CHANGES researchers before or after project meeting
11 Dec. 2012	London, UK	EMAPS	Issues safari: Workshop on specific visualisation issues
Early 2013 ?	Paris, France	CHANGES/ EMAPS	Workshop (2 days?); possible topics: • Spend some more time on discourse mapping • Identify more specific research questions • Review of existing data • Gathering of first ideas for visualisations • Agree on a few maps that are relevant for both projects (EMAPS and CHANGES).