

# How Can Practitioners Analyze And Engage The Science-Policy Interface?

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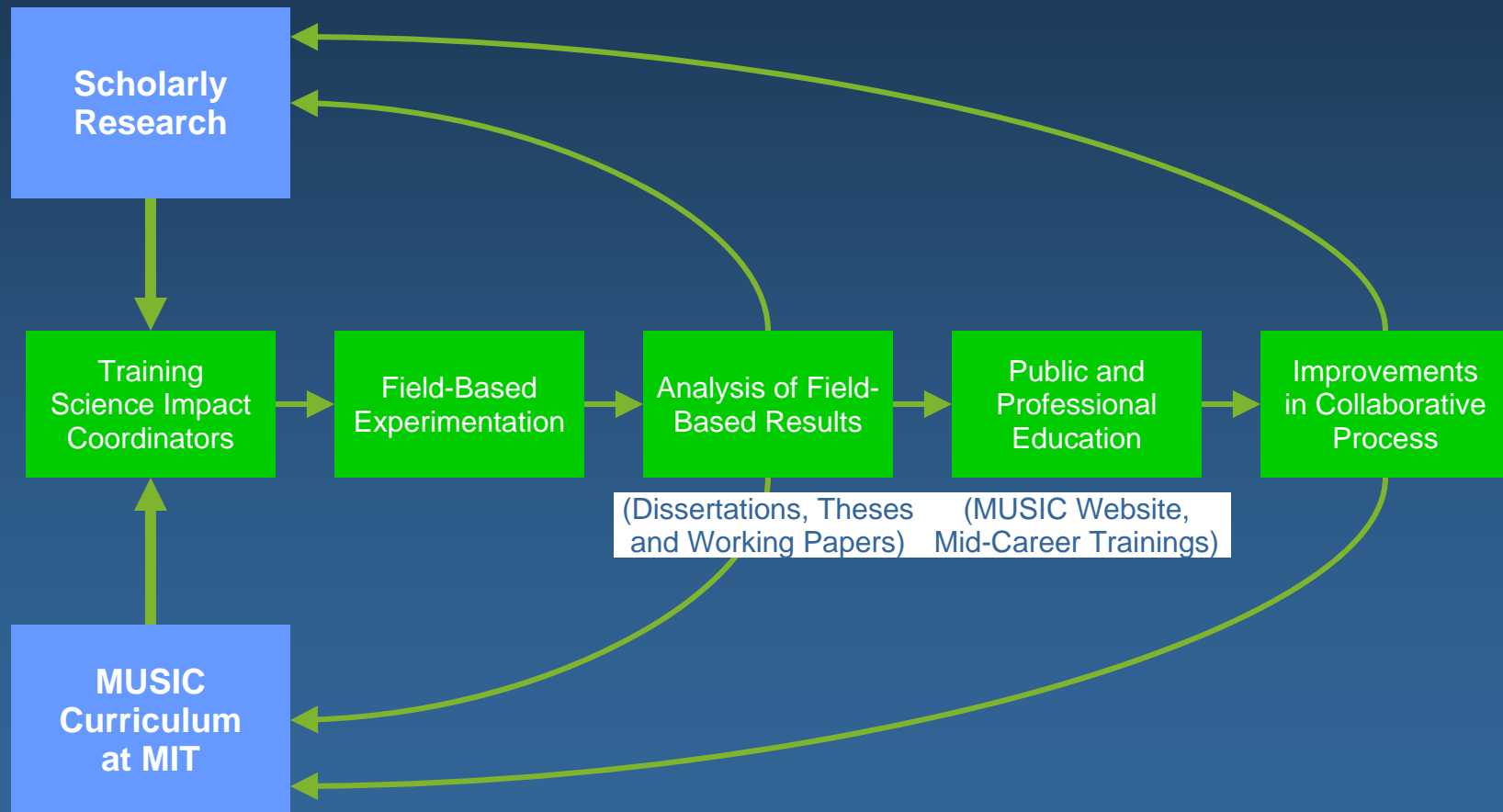
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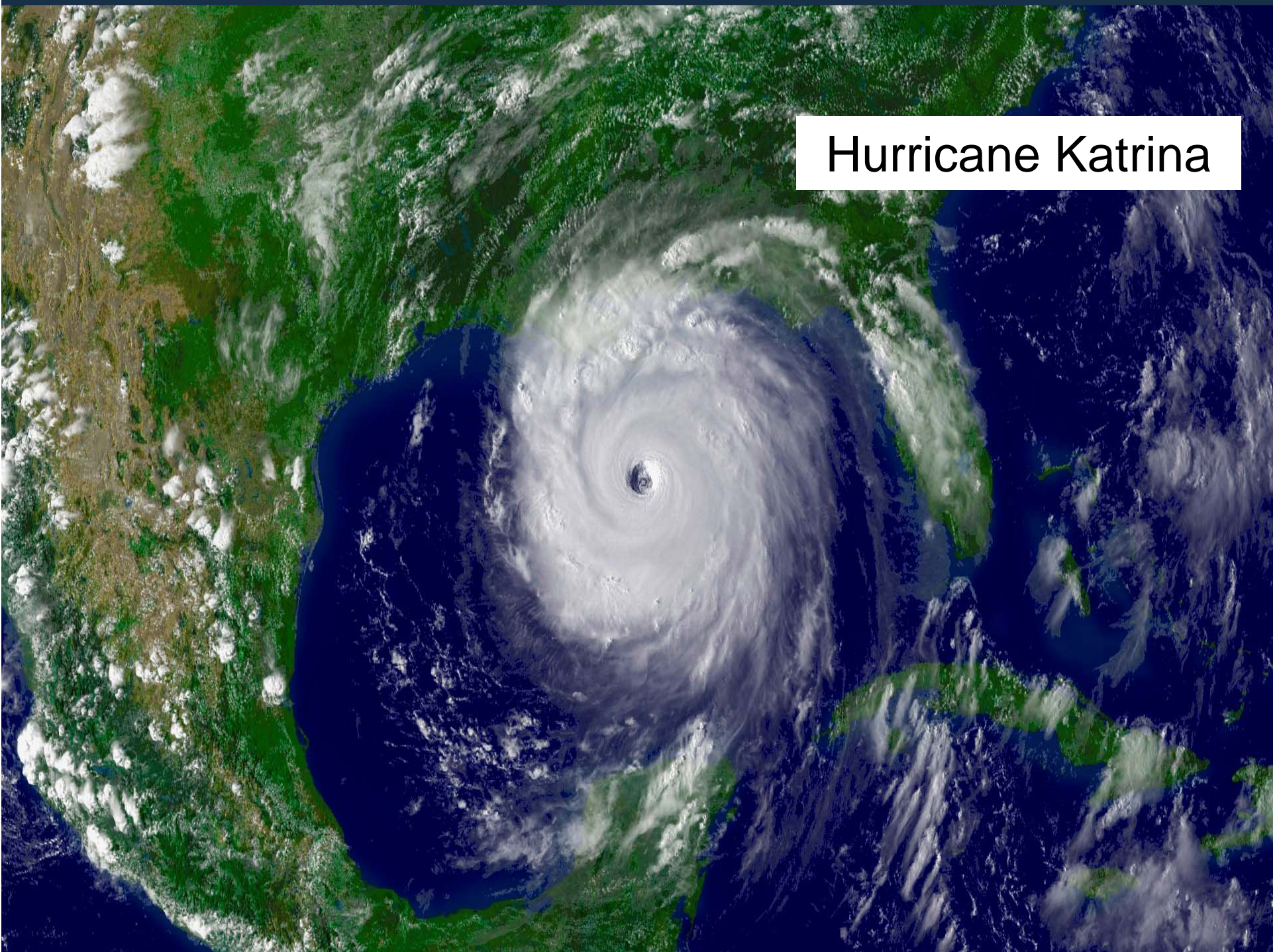
**MIT - USGS**

# SCIENCE IMPACT COLLABORATIVE (MUSIC)

Testing Collaborative Approaches to Environmental Decisionmaking  
and Training Science Impact Coordinators



# Hurricane Katrina



# Science and Policy: Strange Bedfellows

- Scientific process and policy process operate under different normative and institutional structures
- Science: Universalism, Communalism, Objectivity, and Organized Skepticism
- Policy: Participatory, Public Trust, Fairness, Interest Articulation and Effectiveness.

# More on Norms and Institutions in Science

- Universalism represents the non-association of science to any nation, race, religion or any other social category
- The concept of communalism suggests that scientific findings belong to the community, not to the scientist him/herself
- Objectivity symbolizes the un-biased way in which scientific work should be conducted and scrutinized
- Organized skepticism is a combination of the other criteria as it stands for the impartial, logic based approach science has to any statement or discovery

# Norms in Policy-making

- Participation is the translation of the democratic ideal into the policy-process
- Public trust is necessary to overcome collective action problems
- Interest articulation is a fundamental right in a free society
- Fairness is an important goal that guides and constrains behavior by powerful actors
- Effectiveness is a requirement given the scarcity of resources

# The Science-Policy Interface

- The difference in norms between science and policy is important
- When science and policy interact, it is unclear which norms prevail or apply
- Since there are no agreed upon constraints on behavior in this “interface” it takes place in an *institutional void*

# Science-Policy Interface as an Institutional Void

- No shared norms
- No structure for decision-making
- Lack of shared language to describe what is at stake and how it can be resolved
- Practitioners negotiate these complexities in ad-hoc ways

# Theory: Few Tools for Integration

- **Policy Analysis:** the study of the ways in which information is used in policy-making (Kingdon)
- **Science Studies:** the study of the production of scientific information and how it is translated into policy (Latour)
- **Convergence Concepts:** science and policy as part of the same societal processes

What kind of tools do each of these theoretical bodies offer practitioners to understand and engage the science-policy interface?

# Policy Analysis

1. What is at stake for the people involved in the dispute?
2. Who are directly and indirectly involved in attempts to resolve the dispute?
3. What are the modes of communication and decision-making?
4. What kind of information is considered relevant to resolve the dispute, and how does this information frame the issues at stake?
5. What are the power dynamics among the people and organizations that are directly and indirectly involved in the dispute?

# *1. What is at stake for the people involved in the dispute?*

- This fundamental question will be answered differently by people involved in a dispute
- Answering requires understanding the social and physical environment in which science and policy interact

## *2. Who are directly and indirectly involved in attempts to resolve the dispute?*

- There are different ways to describe the people involved, and each of these carries implications for how to engage the interface
- Citizens, stakeholders, epistemic communities, enunciatory communities.

### *3. What are the modes of communication and decision-making ?*

- Different kinds of forums and processes impose different rule of communication and decision-making, all of which has a real impact on the outcome
- Scientists are assigned different roles in different processes, which can lead to confusion

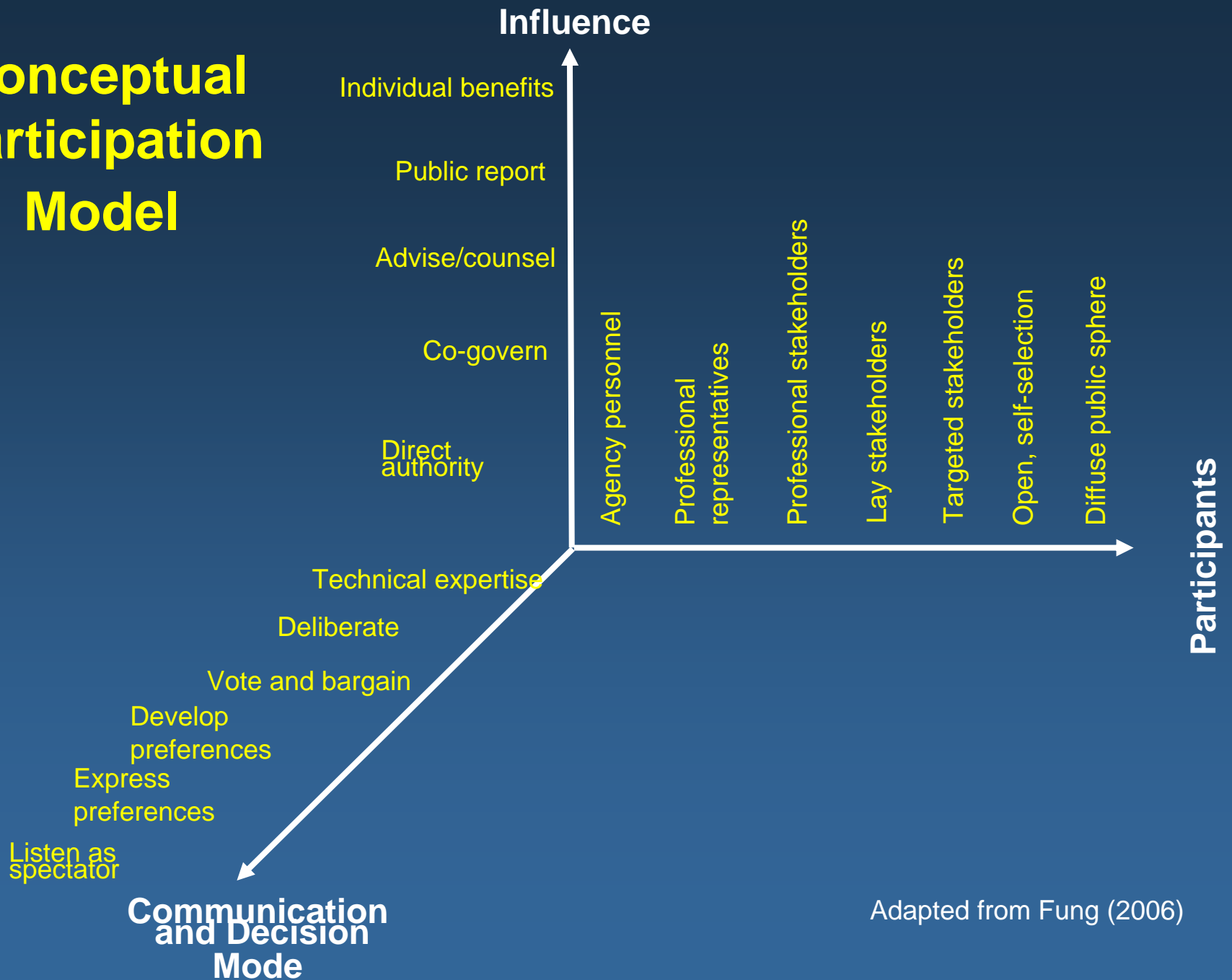
*4. What kind of information is considered relevant to resolve the dispute, and how does this information frame the issues at stake?*

- Scientific information often frames the dispute, and this can disenfranchise certain communities.
- Language to translate scientific information to inclusive conceptions of what is at stake are possible, but rarely used.

*5. What are the power dynamics among the people and organizations that are directly and indirectly involved in the dispute?*

- Different dimensions of power:
- Power to get somebody else to act in a particular way
- Power to set the agenda for decision-making
- Power to keep issue outside of public awareness

# Conceptual Participation Model



Adapted from Fung (2006)

# Science Studies

- What are the conditions under which the information that is used in a public dispute was produced?
- How did this information become credible, stable and reliable?
- What is the structure of accountability for the information that is used in the dispute?

*6. What are the conditions under which the information that is used in a public dispute was produced?*

- Who initiated the study?
- Who funded the study?
- What is the disciplinary background of those who conducted the study?

## *7. How did this information become credible, stable and reliable?*

- Is the information credible, stable and reliable (if not, get other information)
- Expert advice as performance
- Language can be used to translate information, but also convey credibility

*8. What is the structure of accountability for the information that is used in the dispute?*

- In the absence of agreed upon norms and institutions to guide the science-policy interactions, are there any other structures in place that perform the role of scientific or democratic norms?

# Convergence Conceptualizations

- Newly emerging theoretical field that explicitly studies the science-policy interface and that draws from both policy analysis and science studies
- Attempts to understand emerging norms, but also develop theory to allow people to effectively engage the science-policy interface

# Convergence Conceptualizations

- Who and what is represented in the public dispute, and which elements go unrepresented?
- What is the self-organizing capacity of the individuals, communities and organizations involved in the dispute?

## *9. Who and what is represented in the public dispute, and which elements go unrepresented?*

- Representation is a key concept in a democratic society, yet it is also central to scientific practice.
- Interactions between knowledge-makers and knowledge-users are shaping norms and expectations.
- Co-production describes the relationship between science and policy as a complex process, and for this process to be successful, all relevant actors and elements need to be represented through science or participation.

*10. What is the self-organizing capacity of the individuals, communities and organizations involved in the dispute?*

- Public policy can only succeed if there is support and trust from a defined public, or a community.
- If the science-policy interaction generate such a community, communication becomes critical.

# Conclusion

- Science-policy interface takes place in an institutional void
  - dispersed order of decision-making
  - Institutional and environmental boundaries at different scales
  - democratic participation is problematic
  - authority of science is undermined
  - context in which the policy is made is expansive.
- Researchers have not developed adequate language to describe and engage this interface, which in turn complicates efforts at institution building
- Different theories do provide a set of relevant questions that, when answered provide a description of the science-policy interface