Visual Tools for Shared Understanding in Transdisciplinar Knowledge Processes

Tracie N. Curry
University of Alaska Fairbanks
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Knowledge processes:

- Creating information (original research)
- Sharing information (disseminating research)
- Using information (environmental policy and decision-making)

Arctic Context:

Complex social-environmental system

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Challenges in Transdisciplinary Knowledge Processes:

Challenge:
Ineffective Communication

Misalignment in communication between diverse actors

- Differing levels of information
- Different mental modes of understanding

Solution:

Cultivating Shared Understanding

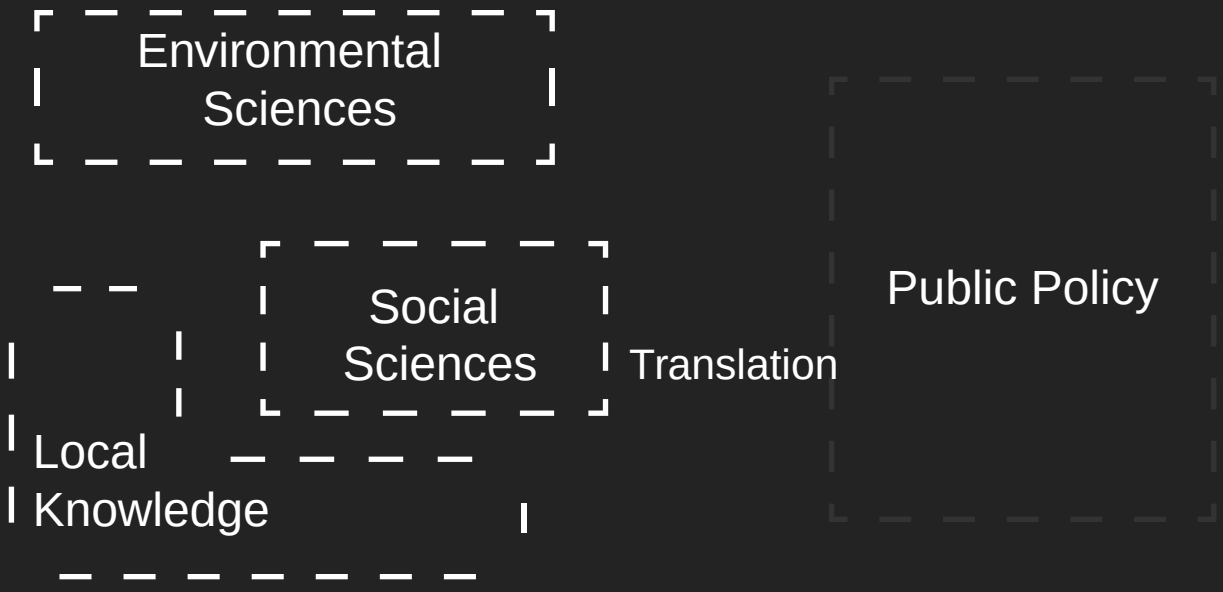
Exclusion of differentiated knowledge sources like local and traditional knowledge

Solution:

Boundary Work

Tensions arise at the interface between communities with different views of what constitutes reliable or useful knowledge

- Spanning activities facilitate collaboration across boundaries



Boundary Objects:

Boundary objects help facilitate boundary work. They are scienti“c objects with the dual role of crossing intersecting social groups AND satisfying the informational requirements of each

- Databases
- Standardized forms
- Visual tools

Focus:

What tools and processes are most effective at delivering information and creating shared understanding?

Role of Visual Tools in Conveying Place-Based Knowledge:

Researching visual tools and their ability to aid in the development of shared understanding between local communities and outsiders by improving understanding of place-based concepts

- Long-term environmental change
- Scale and magnitude of change
- Impact on local ways of life

Visual Tools:

The range of •visual artifactsŽ (maps, drawings, diagrams, digital graphics, photographs, etc) with different functions and uses in constructing meaning

For ExamplePhotography

Credit: Jessica Cherry

For ExamplePhotography

Drawbacks

- Snapshot in time
- Hidden processes
- Limited to what has already happened

1972 1982 1990 1997 2003 2013

Time series

Prudhoe Bay, Colleen Site A
Credit: BP Exploration Alaska, Inc.
UAF Geobotany

Potential futures

Arctic Food Network
Credit: Lateral Office Architecture
Venice Architecture Biennale 2014

Bene“ts of visuals:

Project details:

- Participatory action research in partnership with Native Village of Wainwright
- Elder interviews
- Visual representation of interview narratives
- Focus groups

Target Audience:

Academically trained persons involved in natural resource management and environmental policy

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Considerations

- Trained in the conventions of Western science
- Accustomed to charts, diagrams, and technical line drawings with limited color, texture, and perspective
- Assigning greater truth to abstracted images of generalizable scienti“c information,
- and lesser truth to naturalistic or interpretive images about concrete, individual events and people

3

1

2

1, 2: Ko“nas et al. (2016), Subsistence Sharing and Cooperation Networks: Kaktovik, Wainwright, and Venetie, Alaska. OCS Study BOEM 2015-023
3: ISER North Slope Survey, 1977

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Collaboration Between Social and Ecological Scientists:

- Establishing shared understanding
- Create a strategy for continual collaboration early in the process
- Ability to downscale

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