



# Designing Interdisciplinary Communication

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November 21, 2018



- Ideal: a robust *ecosystem* of disciplinary inputs<sup>[1]</sup>
- Goal: yield a coherent research response by creating an interdependent, systematic set of relationships among disciplinary inputs
  - *Collaboration*: interdisciplinarity needn't be but often is collaborative
  - *Integration*: to achieve the goal with different people representing the disciplinary perspectives, you need to integrate their contributions<sup>[2]</sup>



- Project communication requires building up and maintaining:
  - The relational side of informative exchanges, and
  - The informational side of interpersonal relationships
- This points to two dimensions of communication:<sup>[3]</sup>
  - Relational: build trust, calibrate expectations, encourage deep and patient listening, reward vulnerability<sup>[4]</sup>
  - Informational: appreciation for the core beliefs and values, recognition of implicit research commitments<sup>[5]</sup>



- How does interdisciplinarity constrain these?
  - Relational: the clash of different disciplinary cultures can increase interpersonal frustration and vitiate trust<sup>[6]</sup>
  - Informational: the desire to agree may overwhelm the critical capacities necessary for discovering important methodological, theoretical, and practical differences among the disciplines<sup>[7]</sup>



- Success conditions on interdisciplinary communication:
  - Relational: calibrate expectations and encourage deep listening<sup>[8]</sup>
  - Informational: make explicit those implicit commitments that matter to project decision making<sup>[9]</sup>



- Unacknowledged differences compromise interdisciplinary research and practice
  - Language differences among disciplines and affiliations
  - Differences in values, priorities, and cultures
- Acknowledging differences can enhance mutual understanding and, thus, improve communication and, eventually, project integration
- We enhance mutual understanding through dialogue-based workshops and related activities



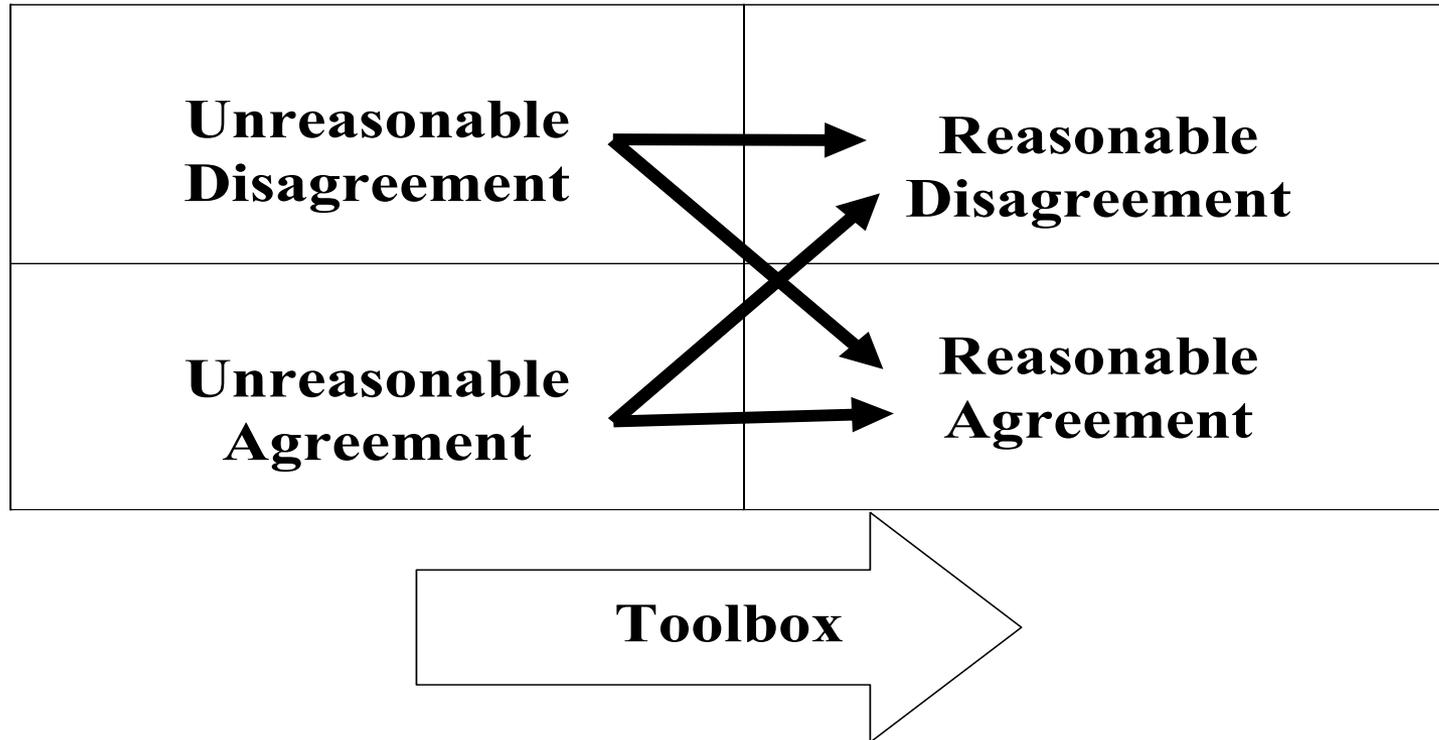
– Main Idea

***Enhanced understanding*** →

***Enhanced communication***

- Operationalize this idea *philosophically* in dialogue<sup>[9]</sup>
- Dialogue encourages integrative practices:
  - Reflexivity
  - Perspective-taking

# How Dialogue Helps



**The toolbox is intended to facilitate movement of CDR teams from unreasonable collective states to reasonable ones**



- Toolbox workshops help groups discover and examine perspectives and manage differences
  - Structured dialogue reveals attitudes, views, values, and beliefs within a group
  - Co-creation activities support group efforts to leverage their diverse perspectives
- We typically collect and use data for research to provide insight to groups

- A set of philosophical prompts that aim to get at issues related to the concerns of our partner
- Several modules with *core questions* and *probing statements*
- Topics: interdisciplinarity, values, methodology, models, trust, ways of knowing
- Probing statements are Likert items
- They are meant to suggest topics for discussion that can reveal salient differences

**Interdisciplinarity – What are the specific challenges of doing interdisciplinary research?**

1. One can be an interdisciplinary expert without being a disciplinary expert.

Disagree 1 2 3 4 5 Agree I don't know N/A

2. An interdisciplinary project can be successful even if no project member understands all parts of the project.

Disagree 1 2 3 4 5 Agree I don't know N/A

3. Interdisciplinary research is more likely to foster innovation than disciplinary research.

Disagree 1 2 3 4 5 Agree I don't know N/A

4. Integrating the knowledge of different disciplines is the most difficult challenge to successful interdisciplinary research.

Disagree 1 2 3 4 5 Agree I don't know N/A

5. Members of an interdisciplinary team do not need to share a common understanding of their project's key concepts.

Disagree 1 2 3 4 5 Agree I don't know N/A

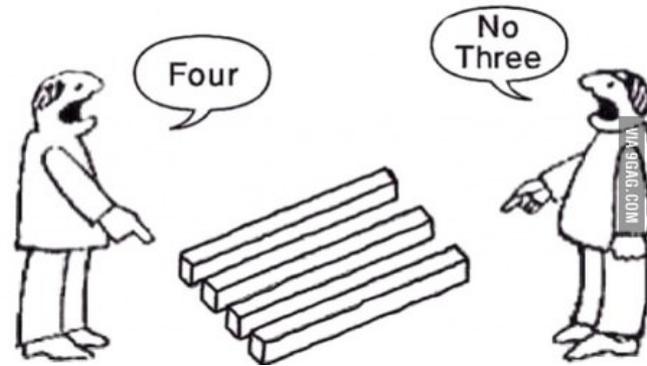
6. It is more difficult to be successful in an interdisciplinary project than it is in a disciplinary project.

Disagree 1 2 3 4 5 Agree I don't know N/A



- The Toolbox workshop focuses on dialogue about the instrument
  - Begin anywhere
  - Follow interests and insights around the instrument
  - The dialogue is typically lightly-facilitated
  - Participants typically have a complex perspective, so we encourage them to represent the facet(s) most relevant to their work with this team in their responses

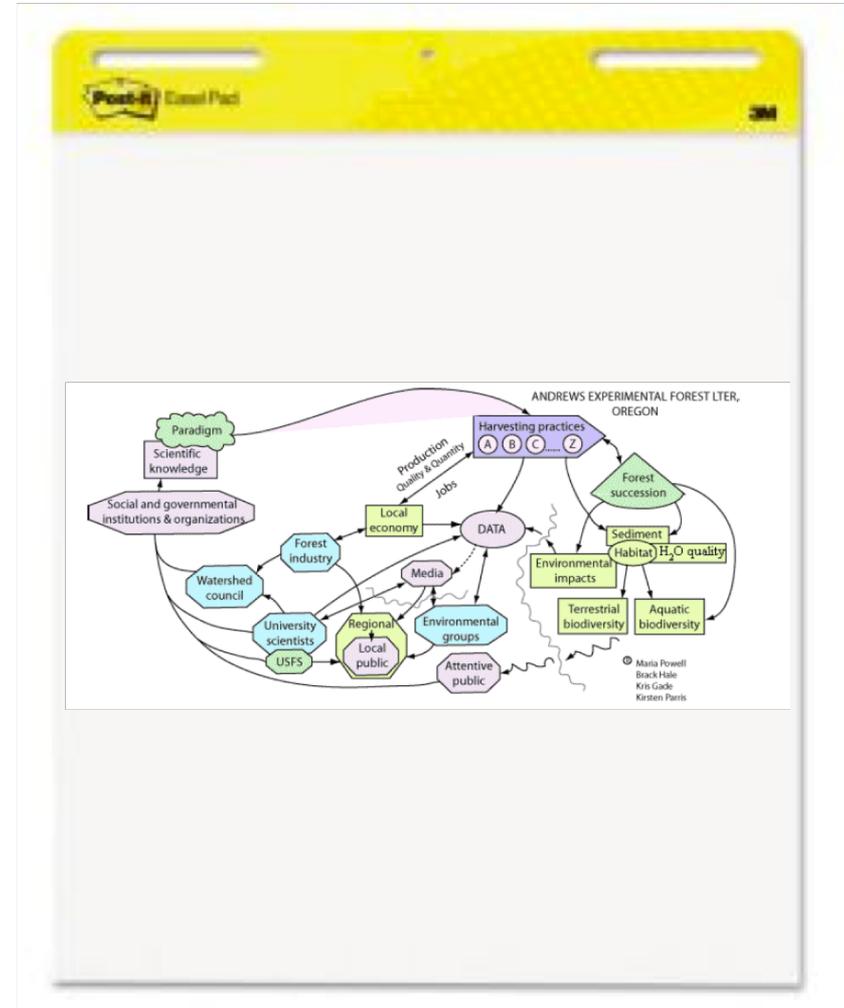
– There are no right answers



– Goals

- #1: Mutual understanding of differences
- #2: Integration of viewpoints<sup>[2]</sup>

- Allow participants to build on insights and create/define deliverables
- Can take the form of:
  - Lightly structured, e.g., open brainstorming next steps toward project goals
  - Heavily structured, e.g., brainstorming and dot polling, consensus building



[10]

# Workshop Experience



Center for Interdisciplinarity  
MICHIGAN STATE UNIVERSITY

280+ workshops around the world



21 U.S. states and territories, 14 countries

ID Communication

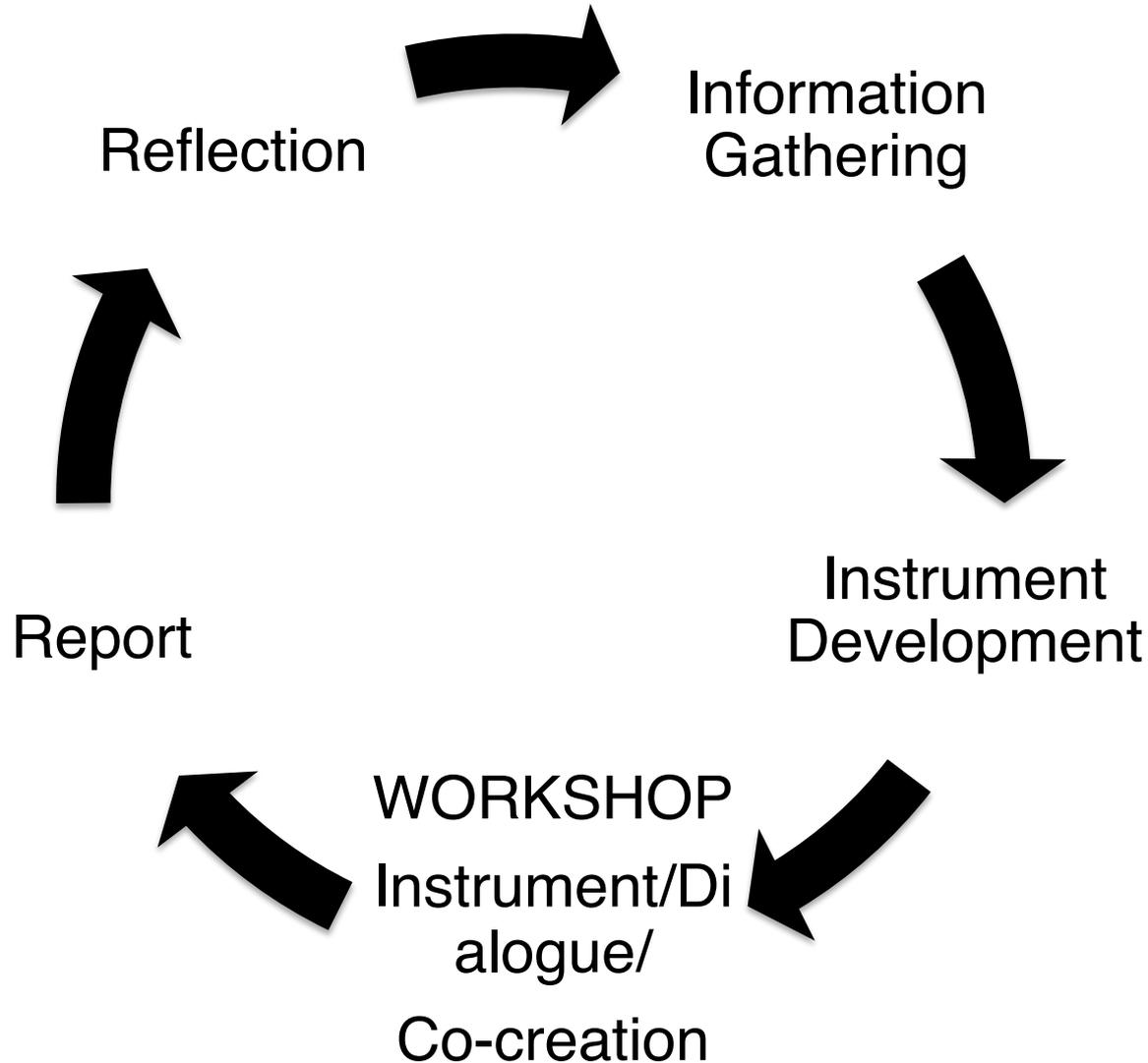
The Toolbox Approach

Evaluating the Approach

# Toolbox Process



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ID Communication

The Toolbox Approach

Evaluating the Approach



## *From Workshop Participants*



**89%** better understand how **others think**



**81%** better identified their **own research worldviews**



**88%** had an open **exchange of ideas** within their team



**74%** felt that it improved **group communication**



**88%** enjoyed the **experience** with their group



**64%** felt that it improved **group collaboration**

[11]



## *From Project Directors*

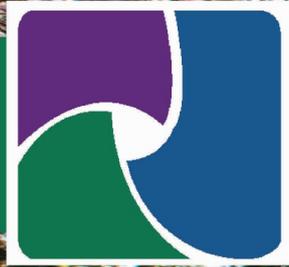
I am deeply impressed by the way the Toolbox team has facilitated communication and collaboration in the ‘Woody Weeds’ project. Through holding workshops at each of the project meetings and conducting communication surveys, the Toolbox team has offered a philosophical and reflective platform to raise awareness of the project partners’ values, motivations, understanding of their roles and communication style.

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## *From the Literature*

“Open communication about assumptions and meanings underlying one’s knowledge is also an element of the Toolbox intervention for interdisciplinary science teams and groups ... the Toolbox instrument and the workshops are based on extensive theory and research and ... target knowledge, skills, and attitudes supportive of interdisciplinary communication”<sup>[12]</sup>



# SciTS

**2019 Conference**  
**May 20-23, 2019 | Lansing, Michigan**

Host: Center for Interdisciplinarity at Michigan State University

<https://inscits.org/>

# Thank you!



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