# Learning to be sustainable (?)

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1. Data in search of question



- 1. Data in search of question
- 2. Why learning?



- 1. Data in search of question
- 2. Why learning?
- 3. Sustainability & Learning



- 1. Data in search of question
- 2. Why learning?
- 3. Sustainability & Learning
- 4. What data do I need?



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Why learning?

Sustainability & Learning

Data



# Objective

#### What I am doing

- Expand on last presentation
- ► Show my thinking
- ► Test out the argumentation of my thesis

#### What I am **not** doing

► Traditional paper presentation



Invitation to conversation!

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### Definitions<sup>1</sup>

1. Reliability: is the learning outcome public, stable, and shared



<sup>&</sup>lt;sup>1</sup>March et al. (1991)

#### Definitions<sup>1</sup>

- 1. Reliability: is the learning outcome public, stable, and shared
- 2. Validity: does learning aid in understanding, prediction, and control



<sup>&</sup>lt;sup>1</sup>March et al. (1991)

# Learning & Sustainability I

#### Valid learning

Creation of quantitative/mental models that inform in advance or lead to desirable states.

▶ Robust climate models (Manabe & Wetherald, 1967; Forster, 2017)

vs. invalid learning

► Surprising, unpredicted arctic ice loss (Guarino et al., 2020)



#### Definitions<sup>1</sup>

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# Learning & Sustainability II

#### Reliable learning

Developing a mental or formal model that is widely accepted.

- ► Collective learning process (Wright & Nyberg, 2017)
- ▶ Bridging epistemic communities (Aronczyk & Espinoza, 2019)
  - vs. unreliable learning
- ▶ Unintentional or deliberate rejection of learning (Hermwille & Sanderink, 2019; Koontz & Thomas, 2018)
- ▶ Persistent resistance or ignorance (Boudet et al., 2020)



What keeps valid knowledge from being reliable?

# Learning & Sustainability III

#### Example of conflicts

- ▶ Biases (e.g., Makov & Newman, 2016)
- After building coalition, validity of knowledge in doubt (e.g., Aronczyk & Espinoza, 2019; Wright & Nyberg, 2017)
- ► Entrenched invalid learning (e.g., Boudet et al., 2020)
- ► Knowledge gap between layman and (relative) experts (e.g., Camilleri et al., 2019)
- ► Self-interest (Rerup & Zbaracki, 2021)



# Example I

### Maguire and Hardy (2009)

1. # Summarize MH using their language



# Examples

# MH Figure 1

 $\mid \# \text{ Pipeline figure 1}$ 



# Example II

# Pipeline industry

1. # Summarize pipeline industry using my language



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Why should we (sustainability researchers) care about reliability & validity?



# Validity— Environmental management

1. Organizational level narratives

### Reliability— Ecocentrism

1. Organizational level and above

2



<sup>&</sup>lt;sup>2</sup>For now borrowing terminology from Purser et al. (1995)  $\rightarrow$  4  $\rightarrow$  4  $\rightarrow$  4  $\rightarrow$  4  $\rightarrow$  4  $\rightarrow$  6  $\rightarrow$  6  $\rightarrow$  6  $\rightarrow$  6  $\rightarrow$  6  $\rightarrow$  6  $\rightarrow$  7  $\rightarrow$  9  $\rightarrow$  9

# Validity-Environmental management

- 1. Organizational level narratives
- 2. Technology & clean-up

#### Reliability-Ecocentrism

- 1. Organizational level and above
- 2. Greenwashing & pollution



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# Validity— Environmental management

- 1. Organizational level narratives
- 2. Technology & clean-up
- 3. Rationality & bounded rationality

#### Reliability— Ecocentrism

- 1. Organizational level and above
- 2. Greenwashing & pollution
- 3. Social constructivism

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### Validity-Environmental management

- 1. Organizational level narratives
- 2. Technology & clean-up
- 3. Rationality & bounded rationality
- 4. Learning diffuses horizontally

### Reliability-Ecocentrism

- 1. Organizational level and above
- 2. Greenwashing & pollution
- 3. Social constructivism
- 4. Learning meets counterforce



<sup>&</sup>lt;sup>2</sup>For now borrowing terminology from Purser et al. (1995) • • • • • • • 20 / 30

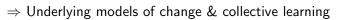
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### Exemplary phenomena

1. Industry-driven deregulation in Texas/Louisiana



#### Exemplary phenomena

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- 2. Pipeline spill into Houston River 94'



### Exemplary phenomena

- 1. Industry-driven deregulation in Texas/Louisiana
- 2. Pipeline spill into Houston River 94'
- 3. Public/private differences



# Thanks!



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