"Effective Communication Between Ecologists and Decision-Makers."

Scott Akenhead

Wise Nimble Decisions

E.g. Adaptive Management

Scott's slide

Data → Info → Knowledge → Wisdom

Knowledge Transfer

If your research/modelling results are:

- **Salient, Credible**, and **Legitimate**
- **Timely, Relevant** and **Compelling**
  to target audiences/users

➔ **Informed Decisions**

String of Assumptions

1. Humans **process information** like computers, and make **rational decisions** based on their knowledge of reality.

2. When given **complete information** about the utility of different options, humans will always **choose the "best" one.**

3. The **more information** we have about a system/problem, the **better choices we'll make.**

Are Humans Rational?

Conscious vs. Unconscious Decision-making

- 98% of what the brain does is **non-conscious** and without conscious guidance.

- People don't actually know what makes them behave or think as they do.

- **No conscious process of evaluation** before responding.

(Nesbitt & DeCamp 1977)
(Nesbitt & Wilson 1977)
(Beratan 2007, citing others)

Rationale Choice Theory

- Predict socio-economic patterns from individual choices.

- Assumes individuals maximize their benefits and minimise their costs.

- Reality:

    ...people ignore important decision factors, put undue weight on some factors relative to others, plan to do the right thing but fail to follow through with those plans, they are more sure about their decisions or beliefs than they should be, they trust others more than they should, and they even fail to do simple calculations that could solve important problems (Daniel Read)

    (cited in Foley and Griffiths 2011)

    (Hausman 2008)

Consequences?

Cognitive Dissonance

Provide a person with information which goes against their beliefs/values:

- Experience intolerable psychological discomfort: *Cognitive Dissonance.*

- Mind tries to eliminate discomfort:

  A. Changing beliefs/actions, or

  B. Resisting new information.

(Festinger 1957)

Cognitive Backfire

Providing a person with information which goes against their beliefs/values

- Reject new information

- Entrench position

- Shoot messenger

Effect is especially strong when people are ideological and/or previously misinformed.

(Nyhan & Reifler 2010)

Knowledge Transfer
(e.g. climate change)

Wicked Problem

Impossible or difficult to solve because:

- Difficult to define.

- No right or wrong solutions, just better or worse as subjectively defined by stakeholders.

- Numerous subjective causes.

- Implemented "solutions" have significant consequences.

Solutions often exacerbate the problem

(Rittel and Weber 1973)

How Do People Really Make Decisions?

Traditional understanding

vs.

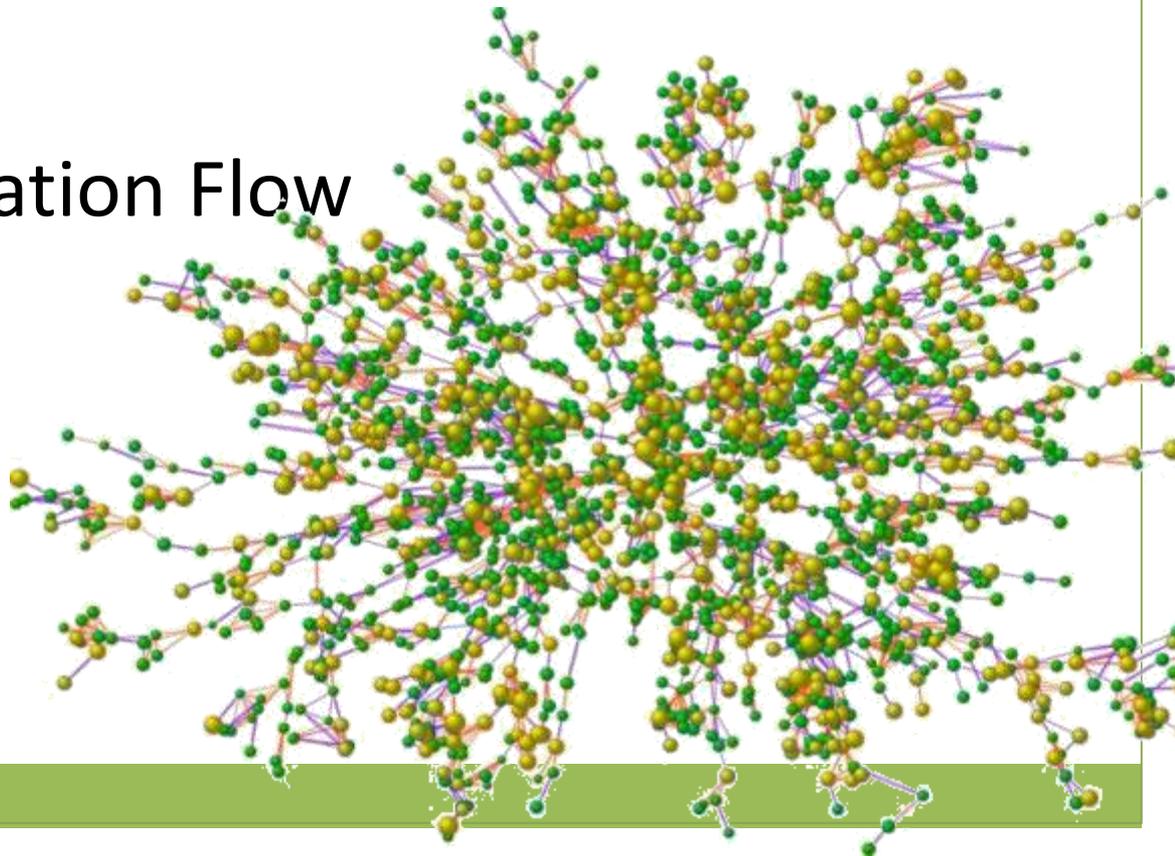**Complexity-based** understanding

Isolated "Silos of Knowledge"

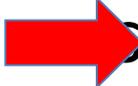# Emergence in Complex Systems

Conditions of Emergence (change)

1. Connectivity
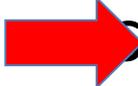
2. Diversity

3. Rate of Information Flow

Emergence

Low connectivity, diversity, information flow

➡️ stability, resistance to change.

System is not learning or adapting

High connectivity, diversity, information flow

➡️ spontaneous response to change

System is learning and adaptive

Conversations

- Currency of change in complex human systems.

- Destabilize patterns of institutional behaviour.

- Create opportunities for novel patterns to emerge.

- Repeated, reciprocal interactions change patterns of behavior in groups of people.

How do People Really Make Decisions?

Active relating, <u>not</u> information, is what drives behavioural patterns.

- Decision-making is a process of **coordinated interaction between people**, rather than individual information processing.

Emergent Change

By increasing interactions between individuals in an system, you increase the system's ability to respond to and adapt to change.

Conversation is the
Currency of Change
in complex human systems
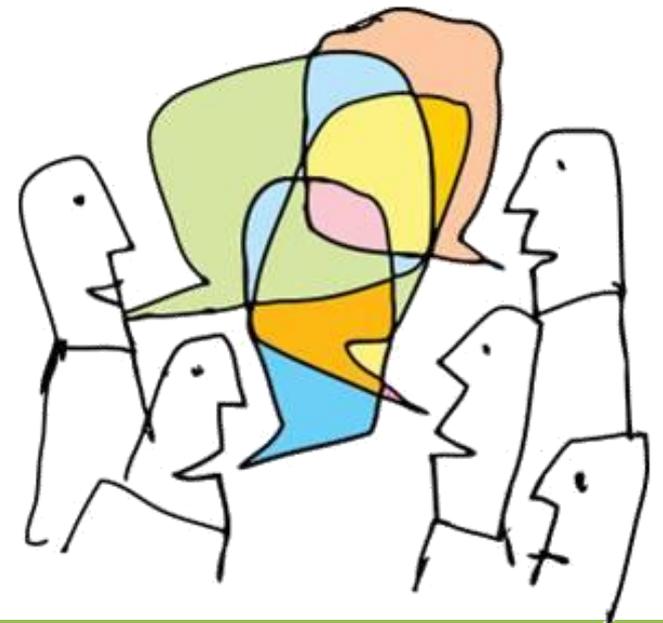
Building Creative Capacity

- Increase number, diversity, and intensity of personal interactions.

- Engage in everyday conversation.

- Seek opportunity in crisis.

- Use narrative to convey a compelling vision of the possible future.

- Participate in collaborative planning.

- Foster creative dialogue.

- Use modelling to catalyse dialogue and extend imagination.

- Enlist knowledge brokers or boundary organizations.

- Change metrics and incentives.

- Conduct qualitative research.

Problem Formulation

Wicked problems are often the result of *how they are formulated:*

- How can we make our decision-makers better informed?

- How can we make communication between ecologists and decision-makers be more effective ?

"How Ecologists Can More Strongly Influence the Emerging Pattern of Reality"

By Kelly Chapman

Complexity and Creative Capacity:

Rethinking Knowledge Transfer, Adaptive Management, and Wicked Environmental Problems (Chapman, 2016).