Moving Science to Action - What does change management mean to us?

Thinking about moving science to action and change

- What is the role of science in society?
- What role does science play in policy formation and change?
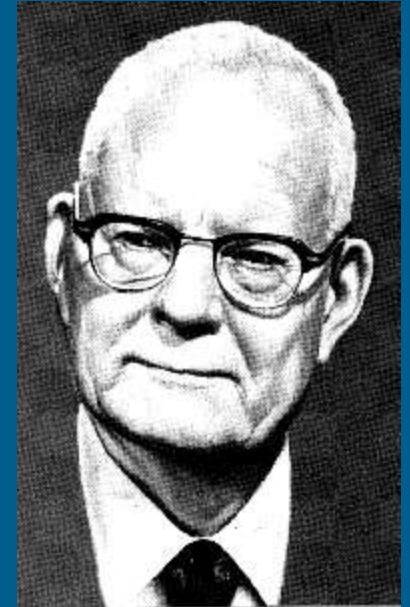
Is change necessary?

- For Individuals?
- For Communities?
- For policymakers
- For Systems?

■ Are most efforts to make **significant policy change** related to climate successful?

- Why or why not?

"It is not necessary to change. Survival is not mandatory."
W. Edwards Deming

- Products and political systems
- Organizations
- Science

Goals of climate science research

- Discovery
- Application

Climate science and change management

- Climate scientists develop <u>evidence</u> about change processes in the natural world
  - A goal of this scientific endeavor is to stimulate evidence based practice; policy outcomes are a result of successful integration of such practices
- <u>Evidence based practice</u> is focused in the human sciences
  - Policy is a function of successful change management/communication strategies

Consider climate science and change management

- First order change – individual beliefs, actions and behaviors

- Second order change – organizations, institutions, policy

- Systems level change – interaction between human systems and ecological systems

Systems thinking

- The holistic view implies "downward" causality, while the atomistic view implies "upward" causality.

- Agree? Disagree?

- These two positions are important and powerful when applied to the task of deciding how to affect and manage change.

Tipping Point of Change

1. Contagiousness
2. Small causes can have big effects (geometrically, not proportionally)
3. Change occurs at one dramatic moment, not gradually (Tipping Point)
4. Tipping Point happens when some change has occurred in one or more areas
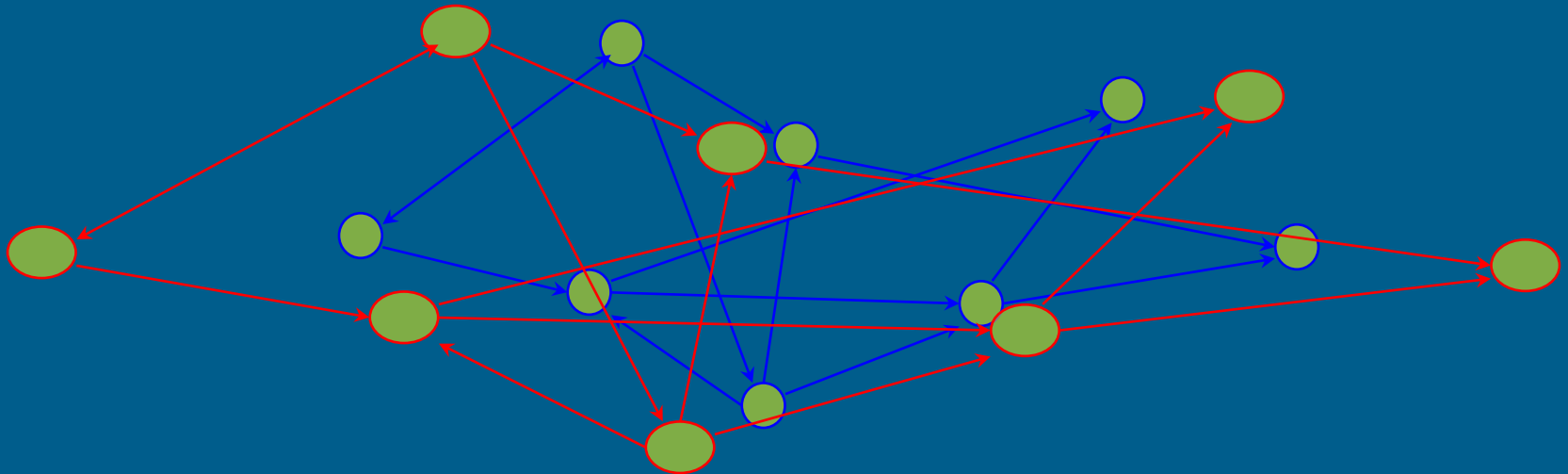
Factors affecting the Tipping Point

a. Law of the few (who bring about change)
   1) Highly connected (facilitation skills)
   2) Broker of information (share knowledge)
   3) Persuasive personality
b. Stickiness of the message
   1) Meaningful
   2) Understandable
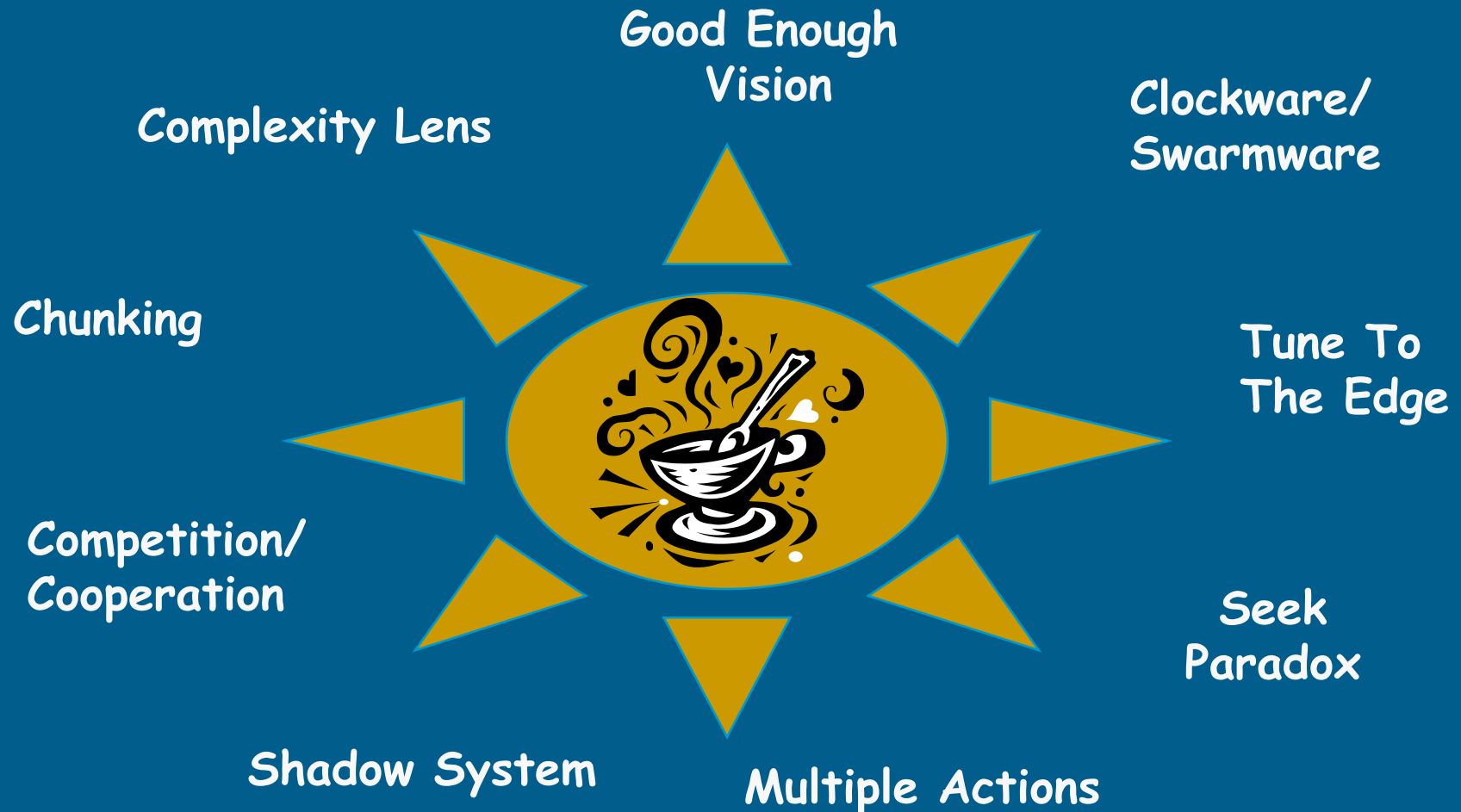   3) Repeated in various forms

Complexity

You don't see something until you have the right metaphor to let you perceive it. Thomas Kuhn

Before Complexity

- Scientists believed the future was knowable given enough data points
- Dissecting discrete parts would reveal how everything -- the whole system -- works
- Phenomena can be reduced to simple cause & effect relationships
- The role of scientists, technology, & leaders was to predict and control the future
- Increasing levels of control <u>over</u> nature would improve our quality of life

Nine Interdependent Principles

Good Enough Vision

Clockware/ Swarmware

Complexity Lens

Chunking

Tune To The Edge

Competition/ Cooperation

Seek Paradox

Shadow System

Multiple Actions

Attributes of Complex Adaptive Systems

- **Elements of the system change themselves (they adapt)**
- **Emergence of novelty & creativity is a natural state**
- **Order emerges without central control**
- **Non-linearity: small changes can have BIG effects**
- **Systems are embedded in systems & their interdependency matters**
- **Not predictable in detail: forecasting is an inexact, yet boundable, art**
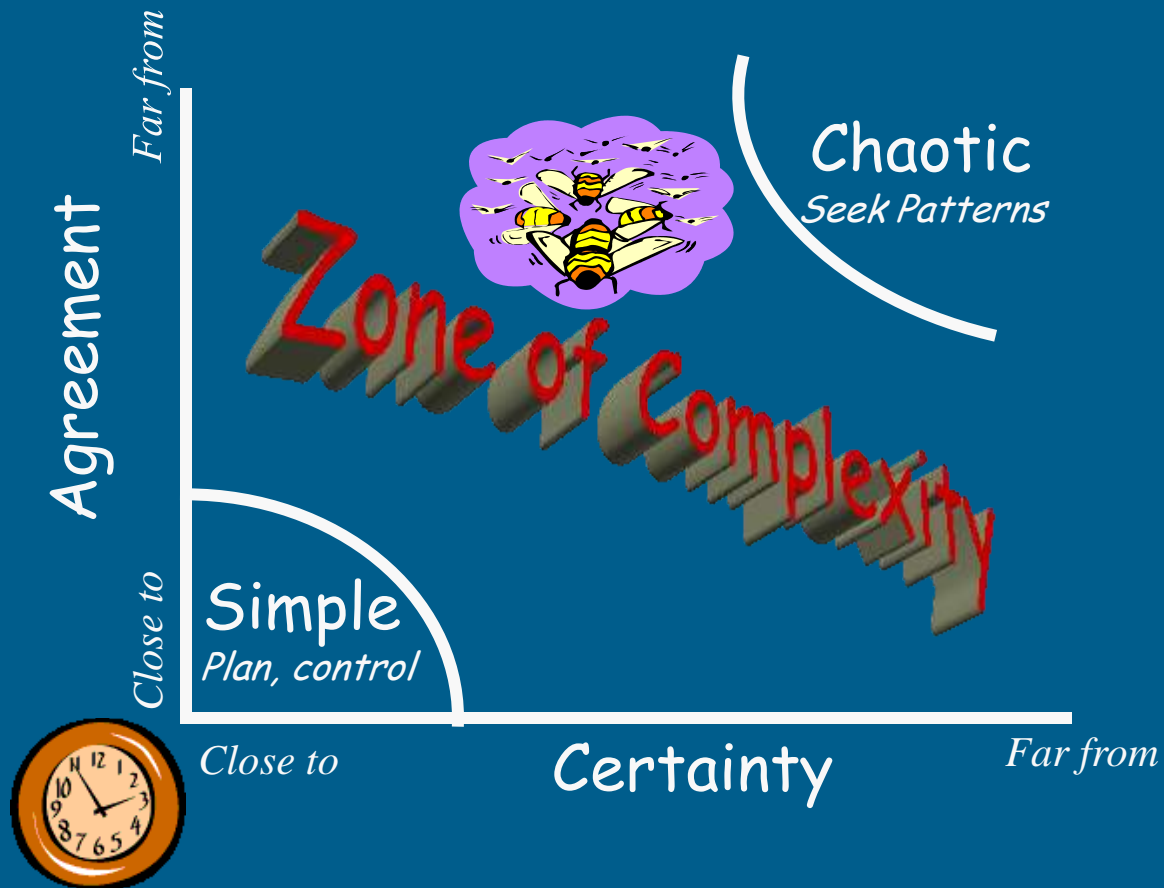 - **Adapted from Paul Plsek**

Complexity and Change Reflection

- Describe a time or experience when a <u>collaborative effort</u> created or encouraged <u>something surprising</u>. It should be something you are proud to have been a part of… a difference that made a difference. It can be a very small, subtle thing. It could be from your current workplace or a past effort of any kind.

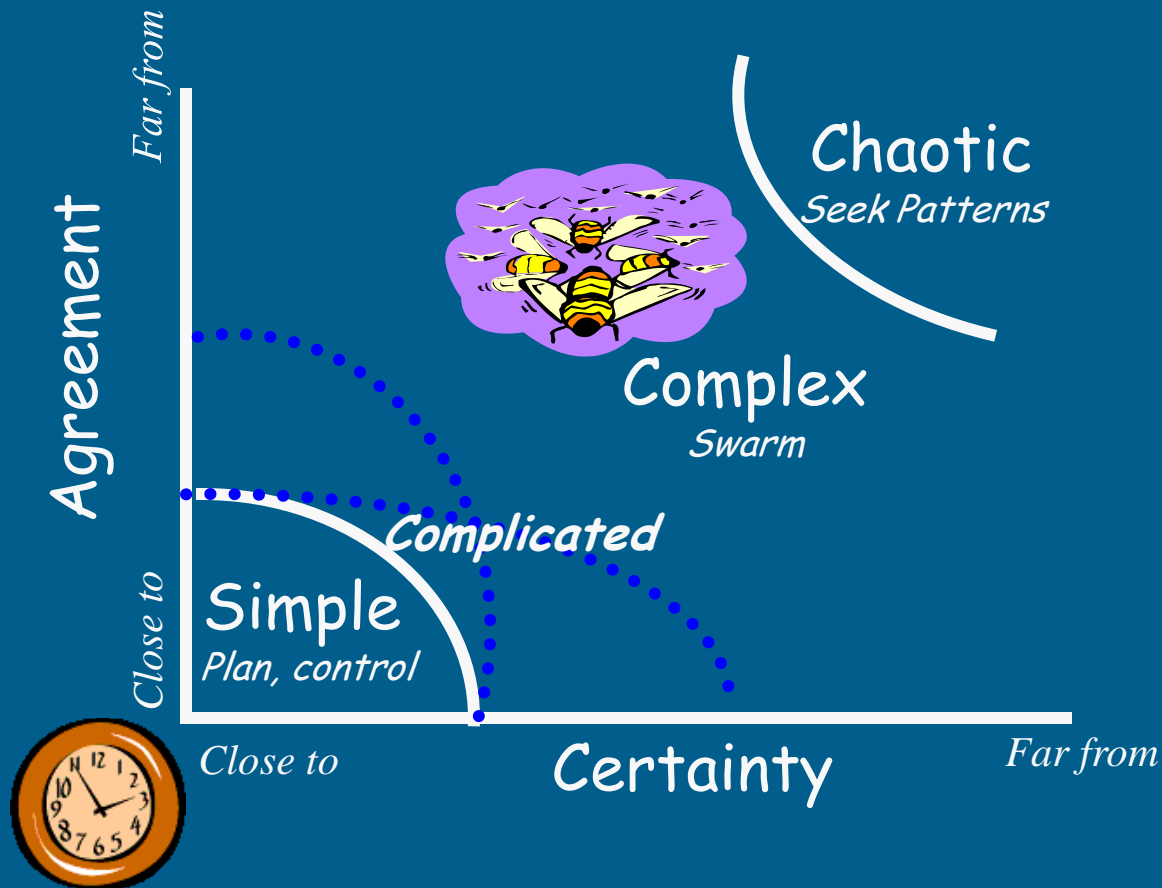- How did you move through complexity to create a desired change?

Stacey Diagram

Know When Your Challenges Are In the Zone of Complexity

Stacey Diagram

Know When Your Challenges Are In the Zone of Complexity

The 15% Principle

- Learning how to "flow" with & "tune to" change in complex systems
- W. Edwards Deming suggested that everyone -- -- has influence over 15% of their system. The other 85% is beyond their discretionary control.
- Recognize that you have 15% discretionary influence… it may sound small but you can use it to make *a difference that makes a difference.*

Social & Psychological Costs of Change

- $C = (ABD) > X$
- Where

  C = Change

  A = Level of dissatisfaction with status quo

  B = Clear desired state

  D = Practical first steps toward desired state

  X = Cost of change

'How To" Change a System

- Allow new information into the system
- Work with organizational and trans organizational boundaries
- Connect systems to environment
- Question differences
- Challenge assumptions
- Take advantage of chance and serendipity/scanning and two way communication

- Adapted from: Jeffrey Goldstein, The Unshackled Organization

Three models of change (Kezar, 2001)

1. Political Model:

   - Helps us understand clashes between <u>belief systems</u>

   - Assumes <u>conflict</u> is inherent of all human interaction

   - Sees change processes as predominately bargaining, consciousness-raising, persuasion, influence, and <u>power</u>

Three models of change

2. Social Cognition Model:
   - Assumes change is tied to <u>learning</u> and mental processes
   - We change because we see a need to <u>grow</u>, learn, and <u>change our behaviors</u>

Three models of change

3. Cultural Model:
    - Change occurs naturally as a response to alterations in the human environment
    - Change process tends to be slow and long-term
    - Change entails alteration of values, beliefs, myths, and rituals

Strategies for Planned Change

- **Empirical – Rational**
  - People are rational and will follow rational self-interests when change is justified
- **Normative – Reeducative**
  - Must first change normative orientation
- **Power – Coercive**
  - Use power to bring about change

Moving Science to Action – What does change management mean to us?

- What can take away and utilize?
- What is explanatory?
- Where do we go from here?

Material and Ideas Contributed by:

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Emerging & Connected Principles

- View your system through the lens of complexity

- Build a "good enough" vision, big picture

- When life is far from certain, don't treat complex issues as if they were simple and linear

More Principles...

- Uncover and work with paradox & tension-seek it out

- Tune your place to the edge-don't try to use hierarchy and power to control change

- Go for multiple actions at the fringes, let direction arise

More Principles...

- Listen to the "shadow system"- NOT discounting informal relationships, communities of practice, and rumor/gossip

- Explain complex systems by chunking information

- Mix competition and cooperation

Planned Change

1. Pre-launch Phase
   - Clear message told as a "story"
   - Find the "right few"/opinion leaders

- Launch Phase
   - Spread the message (need for change)
   - Key data (modeling?)

1. Post-launch Phase
   - Repeat, repeat, repeat the message!
   - The "right few" tackle resistance

Inspiration from Complex Adaptive Systems

- Definition: *A collection of individual agents, who have the freedom to act in unpredictable ways, and whose actions are interconnected such that one agent's actions changes the context for other agents.*

- Examples: termite colonies, stock markets, the Internet, gardens, human beings, groups of people, climate