Human Behaviour
A Bridge Too Far for Complexity?

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A bridge too far for complexity?
Methodological Approach

A. Richardson & Cilliers (2001) categorisation of complexity science:
   1. Hard Complexity Science
   2. Soft Complexity Science
   3. Complexity thinking

B. What has changed in ‘transfer’ of concepts from natural sciences to social sciences:
   1. Additions
   2. Misunderstanding
   3. Reinterpretation
Hard Complexity Science

- Reductionist approach, seeking ‘universal laws’
- ‘Toy models’ → real data
- Networks, scaling, control parameters, phase transition

Hard Complexity Science Issues

Reductionism
- Universal laws vs. unique systems
- Modernism, structuralism

Usefulness
- Social scaling laws?
- Social network properties?
- Social control parameters?
a) Complex models of social systems
   • Seeking to represent reality
   • Empirical data used to build or check models

b) Metaphors for social systems
   • Framework for understanding qualitative data
   • Explanations of agents within organisations
     (e.g. Stacey, 2005)
a) Complex models of reality

**Bottom-up approaches**
- ‘historic contingency’ vs. scaling

**Models vs. reality**
- Kermack-McKendril model of idea contagion (Erdi, 2008)
Modelling society

- Complex systems are highly sensitive → models quickly diverge from reality
- Minds cannot be quantified
- All of history must be included
Mistaking models for reality

“we have to be careful; human beings are not dynamic objects”
(Prigogine & Stengers, 1984, p. 298)

“We now know that societies are complex systems involving a potentially enormous number of bifurcations exemplified by the variety of cultures that have evolved”
(Prigogine & Stengers, 1984, p. 313)
b) Metaphors for Social Systems Issues

Potential for misunderstanding

“As tension or instability increases in a system moving away from equilibrium, the system bifurcates, sometimes involving transformative change...Entropy will slowly dissipate from a system until the potential energy is at a low level” (Gilstrap, 2007)
b) Metaphors for Social Systems Issues

Lack of definition

- ‘Edge of chaos’
- Chaos = complexity
- Self-aware agents

Not falsifiable

- e.g. Kelso (1995)
Complexity Thinking

- All knowledge of complex systems is limited.
- Researchers/practitioners are complicit in systems.

a) **Optimistic approach**
   - 'Emergence'
   - 'Level-jumping'
   - Positive action

b) **Cautious approach**
   - Rejects ‘linear’ causality
   - e.g. Osberg, Biesta & Cilliers (2008)
Complexity Thinking
Issues

Unpredictability

- Emergent phenomena unlikely to be as you want

A New form of Postmodernism?

- No mechanism for ‘judging’ descriptions/actions
- Epistemology is difficult to pin down
- Relativist?
Who’s who?

Physics
- Hard Complexity
  - Universal Laws

Biology
- Soft Complexity
  - Models of reality

Social Science
- Complexity Thinking
  - Action in the world
A bridge too far?

- There are great difficulties in describing social systems
- Different complexivists use different approaches
- We must first ensure we can talk to each other

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References (1 of 3)


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