Realising the Potential of Systems Thinking

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• The nature of complexity
• The development of applied systems thinking
• CST and theoretical critique: the case of project management
• CST as practical critique: the case of systems thinking in housing
• What can creative holism contribute?
Complexity

• many parts
• interconnectivity
• multiple causality
• non-linear relationships
• fractal/recursive
• emergent properties
• co-evolve with turbulent environments
• multiple purposes
• conflict
• power
Increasing Complexity

Increasing Diversity

Of Values

Increasing 'Systemicity'

Simple

Complex

Increasing Complexity

Unitary

Pluralist

Coercive
The development of applied systems thinking I

INCREASING DIVERGENCE OF VALUES

UNITARY

HARD SYSTEMS THINKING

PLURALIST

SOFT SYSTEMS THINKING

COERCIVE

EMANCIPATORY SYSTEMS THINKING

INCREASING SIMPLE

SYSTEM DYNAMICS
ORGANIZATIONAL CYBERNETICS
COMPLEXITY THEORY

INCREASING COMPLEXITY

COMPLEX SYSTEM DYNAMICS
ORGANIZATIONAL CYBERNETICS
COMPLEXITY THEORY
The development of applied systems thinking II

- machine
- organism
- brain
- culture
- political system
- etc
The Viable System
The Process of SSM

1. Real-world problem situation
2. The situation as a culture
3. Analysis of the intervention
   - 'Social system' analysis
   - 'Political system' analysis
4. Systems Thinking
   - Relevant systems
5. Situation
   - Models
   - Compare
   - Situation
6. STREAM OF CULTURAL ANALYSIS
7. Differences between models and real world
8. Changes: systemically desirable culturally feasible
9. Action to improve the situation
10. LOGIC-BASED STREAM OF ANALYSIS
Critical Systems Heuristics

- boundary judgements
- the affected but not involved
- the polemical employment of boundary judgements
Types of project complexity:

- technical complexity
- structural complexity
- temporal complexity
- directional complexity

(after Remington and Pollack)
What has systems thinking to contribute to complex project management?

- clarity about theoretical assumptions
- methodologies for managing ‘systems’ and ‘people’ complexity
- identification of strengths and weaknesses
- enriching the field
- pluralist approach to intervention
CST and practical critique: the case of systems thinking in housing

Vanguard’s ‘Lean Systems’

- whole system (customer) perspective
- interdependence of parts
- design against demand
- minimum ‘command and control’
- encourages individual and organizational learning
- evaluates according to whole system performance
Results

Service performance:

- **Tees Valley**
  - end to end repair times reduced from 46 to 5.9 days on average and sustained

- **Leeds**
  - average void re-let times reduced from 50 to 25 days, rising again to 34
  - number of empty properties reduced from 240 to 144 to 118

- **Preston**
  - time taken for first payment to hit account reduced from 34 to 20 days
  - 18% of new tenants fell into debt compared to 43% previously
  - (re-let time rose from 32 to 40 days)
Problems

- Difficulty of sustaining gains
- Sub-optimization:
  - voids at Preston
  - council-wide IT system at Preston
  - 4 out of 5 directorates at Preston
- Pluralism:
  - area offices at Leeds
  - local offices at Preston
CST and practical critique: the case of systems thinking in housing

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Critical Systems Practice

• Critical Systems Practice is about “the creative use in combination of different ways of being holistic”

• Managers need a good understanding of the different systems approaches and how to use them in a complementary and flexible way
Improving Organizations in Systems Terms

- efficiency
- efficacy
- effectiveness
- elegance
- empowerment
The Process of Critical Systems Practice

- Creativity
- Choice
- Implementation
- Reflection

The holistic doctor
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