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## Communicating about systems and complexity:from contingency to praxis

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*Gedenkschrift to honor Brenda Zimmerman's contributions  
to understanding complexity and social innovation*

## From contingency to praxis

A tribute to the work of Brenda Zimmerman

By Martin Reynolds



Senior Lecturer in Systems Thinking at The Open University, UK, Martin was lead editor of both The Environmental Responsibility Reader (2009) and Systems Approaches to Managing Change: A Practical Guide (2010).

Martin specialises in applying critical systems thinking in practice with different areas of professional development and intervention including international development, public sector management, business development, education, health, environmental management, and evaluation.

The work of Brenda Zimmerman in making clearer the distinction between simple, complicated and complex came to my attention some ten years back in my struggles to make systems thinking appealing and relevant for practicing professionals undertaking postgraduate studies. I have since used the distinction and variation of Brenda's associated metaphors - (i) following a recipe in baking, (ii) sending a rocket to the moon, and (iii) raising a child – for illustrating systemic failure in social and environmental interventions. The idea of treating complex situations of intervention characterised by uncertainties and contrasting perspectives as if they were merely technical difficulties has a powerful resonance particularly amongst well practiced mature-age, part-time students who typically study with the Open University. Moreover, the heuristic helps to understand the limitations in, and provides a powerful critique of, mainstream management notions of 'best practice' – the one-size-fits-all idea in fetishizing tools developed for one context being applied to another context. Again, such practices are often an attributing factor to systemic failure with interventions (including evaluation) and are more easily understood as such using Brenda's metaphors.

The shift in using the heuristic from understanding systemic failure towards prescribing predefined 'tools' for predefined 'situations' – either simple, or complicated, or complex - constitutes a shift from 'best practice' to 'best fit'; a shift towards a contingency approach. Whereas 'best practice' privileges tools irrespective of context, 'best fit' privileges particular tools for particular contexts. But might this also be a constraint on developing praxis. By praxis I mean developing a continually adaptive and innovative use of tools as conceptual constructs amongst users in relation to changing contexts of use; that is, thinking-in-practice.

Several shortcomings in the shift towards a contingency approach might be summarised from a systems thinking viewpoint.

1. Situations are always ‘seen’ or ‘framed’ differently by different actors. Whereas one person might only see technical and/or social complications, another might experience complexity and conflict.
2. Similarly, metaphors are grounded in cultural meanings and histories. ‘Following a recipe to bake a cake’ may actually be very complex if the context is not conducive to baking at a particular time, or if seen from, say, an Amerindian perspective or other societal group where practices of using fixed recipes (rather than perhaps oral and demonstrative practices) are not so common place.
3. The use of a ‘best fit’ contingency approach is quite common amongst advocates of complexity thinking. Many prefer to see only *some* contexts as complex. But even Ralph Stacey accepted that his original diagram popularly translated in terms of a practical matrix for prescribing action in different situations has limitations. It shifts attention from an (epistemological) understanding of the application of interventions in situations towards an (ontological) objectification of situations more generally. It can shift inquiry from a systemic landscaping of any one situation towards a systematic structured and reified 2x2 matrix for guiding expert support. The contingency matrix might then be used to prescribe off-the-shelf (pre-set) tools for particular (pre-defined) situation types (see Exhibit 5 for my own idealised form of a contingency matrix).

**Exhibit 5 Idealised ‘Best-fit’ Contingency Matrix Based on Four Situation Types<sup>1</sup>**

	Certainty	Uncertainty
Multiple perspectives (disagreement)	<b>Socially complicated:</b> relationship-building tools for building consensus like Open Space Planning and soft systems approaches	<b>Complex:</b> complexity thinking tools like complex adaptive systems and agent-based modelling
Single perspective (agreement)	<b>Simple:</b> tools associated with conventional linear project planning: tools like those associated with Systems Analysis or PRINCE software	<b>Technically complicated:</b> co-ordination tools like Logframe analysis and system dynamics modelling

4. The diagram is helpful in providing understanding of situations but more limited in prescribing practice particularly in types of method or tools for making decisions. The reason is that:
  - (i) any situation where there is more than a single perspective is, by definition, going to have some degree of complexity and various degrees of conflict; and
  - (ii) any effectiveness of a tool being used will in large part be determined by the wider context including significantly the user of the tool rather than the tool itself, as well as

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<sup>1</sup> A caricature representation with suggested best-fit types. Source: author adaptation based on Brenda Zimmerman, Exhibit 1 in this volume, and Patton’s demarcation between technically and socially complicated (Patton, 2011 p. 90)

the user's own perspective on the situation with respect to relative complexity and conflict.

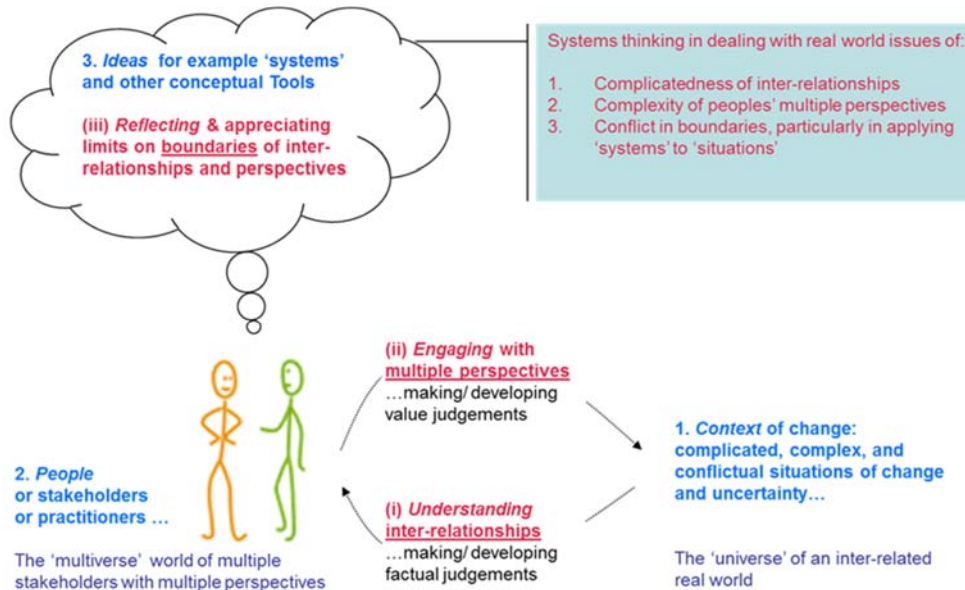
An alternative prompts the use and adaptation of the tripartite heuristic towards a more adaptive praxis heuristic of systems thinking in practice (STiP). STiP is the namesake of an OU postgraduate programme of study developed by a group of systems practitioners at The Open University, UK. The two core modules provide a steer in applying systems ideas to students' own professional work practices to develop systemic praxis (Blackmore et al., 2014; Reynolds, 2014).

STiP praxis has the following attributes.

- (i) All situations can be regarded as constituting elements of complicatedness, complexity and conflict (where the 'conflict' may in extreme examples resonate with Snowden's notion of 'chaos'). That is the reality to which systems thinking might be mobilised.
- (ii) Understanding situations involves abstracting from the flux of reality; making 'simple' the complex. Simplicity is not an attribute of the situation. It is an attribute of the maps (conceptual systems) used to make sense of the territory (actual situations). Any situation of intervention (territory) comprises a continually changing flux of complicated (inter-relationships) – 'everything connects', complexity where two or more individuals are involved with different viewpoints (multiple perspectives), and inevitable conflicts given that individuals will make different boundary judgements regarding the situation. While STiP praxis assumes systems as primarily conceptual constructs, it acknowledges real world systems as powerful metaphors of reality.
- (iii) The heuristic (Exhibit 6) works by not only surfacing the complicatedness of inter-relationships (through for example, systems diagramming including system dynamics amongst other diagramming techniques), but practically engaging with multiple perspectives that comprise the core aspect of complexity. The duality between understanding (inter-relationships) and practice of engaging (multiple perspectives) constitutes the praxis of STiP. But praxis also involves attention to social change. STiP praxis involves reflecting on the practice of using systems as tools for transformation. Any tool used for intervention, including systems and complexity tools as well as other evaluation tools, can be moulded, developed, adapted, combined with other tools, etc. etc. depending on the context of use and the experiences and ever-developing craft skills of the user.

### Exhibit 6 Systems Thinking in Practice Heuristic

Developed by Reynolds for use in one of the two core modules of Open University STiP programme (in Blackmore et al, 2014 p.621 and Reynolds, 2014 p.1385)



From this systems thinking in practice viewpoint, the 'simple' category has not mysteriously disappeared. It is relocated away from the real world of 'complicated', 'complex', and 'conflictual'. The 'simple' is a representation of reality rather than a constituent of reality. Systems, like metaphors, are conceptual constructs used for simplifying reality. Distinguishing between systems and situations is part of the conversation that might be cultivated between theory and practice – between thinking and action. Such cultivation is in my view a craft skill in praxis.

The metaphoric heuristic developed by Brenda is like any great conceptual device - flexible and adaptable for different users in different contexts of use. This is clearly illustrated by several contributions to this Gedenkschrift. In short, Brenda's ideas provide a powerful and enduring device for praxis – enabling versatile thinking-in-practice.

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