

A Quick Sprint through Soft Systems Methodology

A workshop with Rosalind Armson

Rosalind Armson is a Systems Practitioner, Academic and Consultant. She is a Lecturer in the Systems Group at the Open University.

A Quick Sprint through Soft Systems Methodology

A workshop with Rosalind Armson

This workshop is designed to give participants a flavour of Soft Systems Methodology in action. Rosalind Armson is an experienced systems practitioner and will guide participants through the methodology, working on their own real-world issues. The workshop will be focused, experiential and reflective. The workshop will demonstrate how, in a rigorous way, Soft Systems Methodology can enable the systems practitioner to intervene in a complex real-world situation to improve it or to take advantage of the opportunities it offers.

Participants are asked to bring an issue to work on during the workshop. This need not be a very complex issue but should qualify as a ‘mess’¹.

This document

... is a collection of slides used in the workshop and is designed to provide participants with a record of the slides used and as a basis for their own notes and reflections. It is not intended as a self-standing guide to Soft Systems Methodology.

¹ We can distinguish between two different classes of problems – ‘difficulties’ and ‘messes’. We experience them differently and dealing with them usually requires different approaches.

The first class of problem is *difficulties*. These may be quite intractable but, broadly speaking, I can be fairly sure of the sort of solution I'm looking for. The problem itself is likely to be fairly well defined and most people involved will more or less agree on what it is. A difficulty is fairly bounded; that is, it only affects a limited set of things, events, people and processes. Political and ethical considerations intrude in only a minor way.

Messes, on the other hand, are much more difficult even to describe. There is likely to be little consensus about what the problem actually is. This means it is often hard to imagine what a solution might look like. Uncertainty is characteristic of messes. Not only does the problem solver not have enough information; it's not easy to see what information will be needed to improve the situation. This uncertainty and lack of information can generate a sense of unease around the problem. The problem seems to be multifaceted and densely interconnected with a large number of things, events, people and processes. The problem appears to be unbounded: it seems to be interconnected with its environment. Human values, often conflicting, are often a feature of the problem. Often there have been previous attempts to deal with the problem. These may even have appeared to be successful for a time but it is a characteristic of a mess that the problem re-emerges later, perhaps in a slightly different form. Thus messes often have a characteristically longer time-scale than difficulties. Attempted solutions often precipitate the emergence of new forms of the problem. The problem owner may experience ‘problem paralysis’: whatever solution she thinks of seems likely to cause still further problems. A mess can be thought of as a tangle of interconnected problems.

Aims and Objectives of this ‘Quick Sprint through Soft Systems Methodology’

Aims

- To give some experience of tackling an issue using Soft Systems Methodology
- To share some ideas about, and experiences of, tackling complex ‘real world’ situations in order to improve them

Objectives

- Create a rich picture that captures the essential features of the situation that you need to improve
- Identify some themes that emerge from considering the rich picture
- Identify a conceptual, relevant system using *CATWOE* criteria
- Specify a *root definition* of the relevant system
- Construct a *conceptual model* of the relevant system
- Discuss how the conceptual model can be compared with the ‘real world’ complex situation to identify mismatches and how the insights generated can be taking forward through a process of debate and learning.

Some important caveats about this workshop

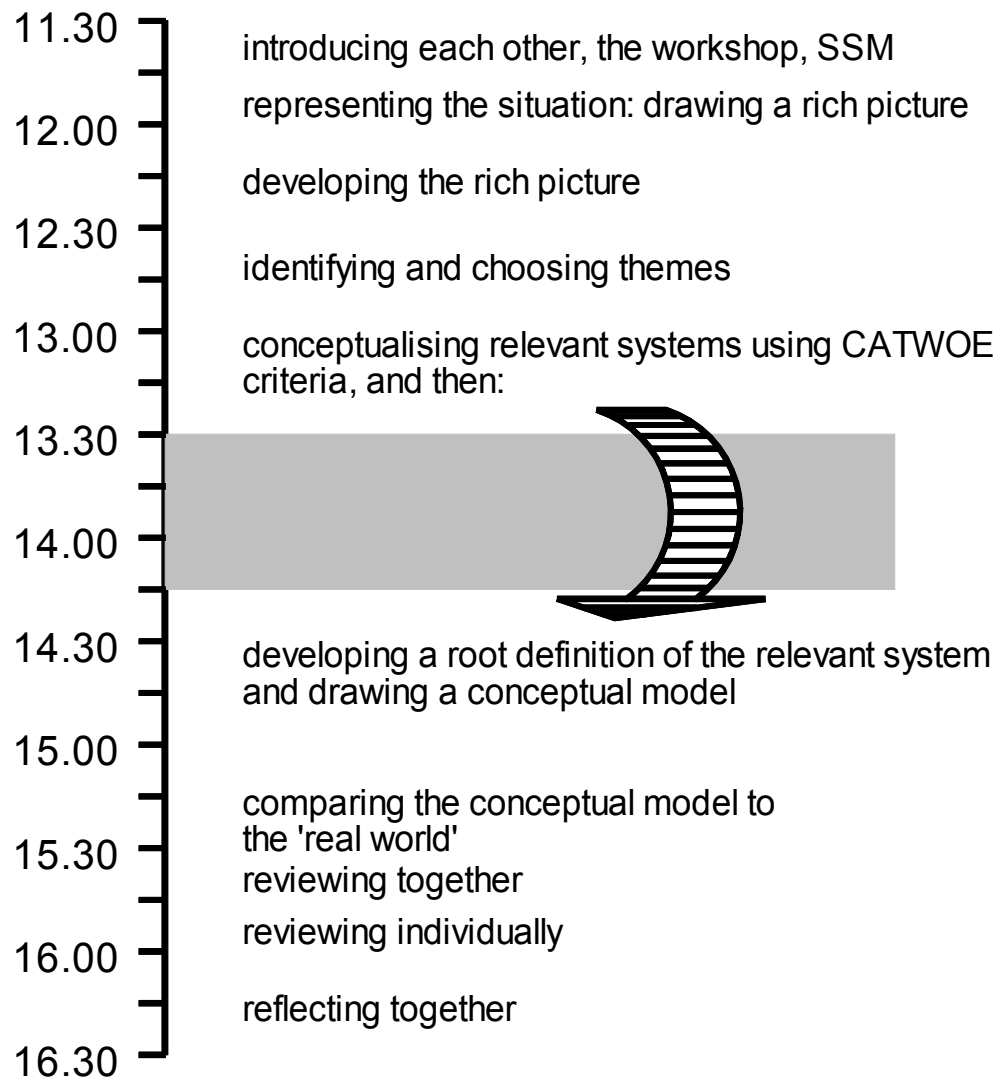
This workshop is based on what is now called 'Mode 1 SSM' or 'Seven-step SSM'. Checkland now espouses Mode 2 SSM. I am using a Mode-1 approach in this workshop for several reasons:

- Experience of using Mode 1 provides a good basis for progressing to exploration of Mode 2.
- Mode 2 requires experience and talent to work well. The same is true of Mode 1 but in my experience almost anyone can find now insights and ways forward using Mode 1.
- The essential spirit of Mode 2 is present in Mode 1, especially when Mode 1 is used iteratively.
- Mode 1 gives a clear 'map' of the methodology so that, although SSM is not meant to be a step by step procedure, beginners know where they are without prejudicing a worthwhile outcome.

Ideally SSM is a methodology, rather than a method. This tends to be obscured by over-proceduralised use of Mode 1. It needs awareness to avoid the trap of becoming methodology-focused. Remaining problem-focused is easier in Mode 2

Timetable

Even at a lightning sprint, we will have to stay very focused to meet our objectives.



Timetable for 'A quick sprint through SSM'

Soft Systems Methodology

I am indebted to my colleagues at the Open University for the materials that form the basis of some of the slides I have used (the ones with the borders). Although many of the slides are based on those used in Open University Systems courses, I take sole responsibility for those used here. I am indebted to Ruth and Viola for permission to use the materials relating to their complex 'real-world' issue.

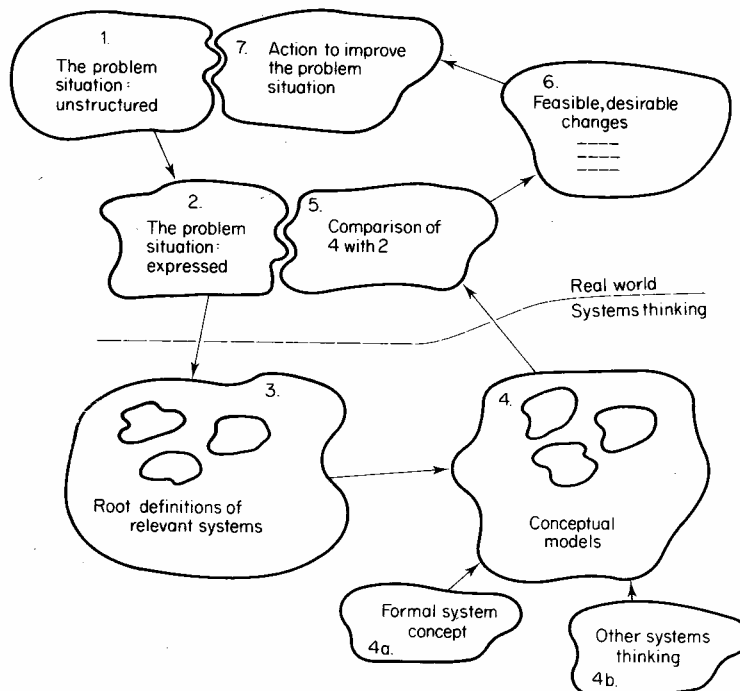
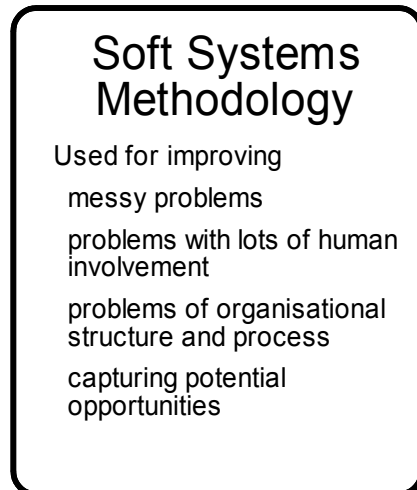


Figure 1 The Methodology in summary (from Checkland, 1993)

'[...] the most effective users of the methodology have been able to use it as a framework into which to place purposeful activity during a systems study, rather than as a cookery book recipe.' (Checkland, 1993, p. 162-3)

Step 1: The problem situation unstructured

Find out all you can about the situation from as many different perspectives as possible. Talk to as many of the people involved as you can – not just those ‘in charge’ of the situation.

Unstructured problem situation

Look at the **problem
situation** , not the **problem**

'unstructured' means look at
the situation with an open
mind and from different
perspectives

Step 2: Representing the situation

'the richest possible picture' (Checkland, 1993).

Situation ~~expressed~~ **captured**

Draw some representation of the situation:

include:

hard information - facts, data, structure

soft information - shared or individual perceptions, relationships, etc.

Guidelines for rich pictures I

DO NOT impose a structure on the situation

represent the situation, not 'the problem'

recognise and express your role in the situation

clarify your own objectives and motivations for being involved

Guidelines for rich pictures II

do not try to represent the situation in systems terms

include both 'hard' and 'soft' information

include yourself and the client in the picture

get the client to help

look for elements of structure

Guidelines for rich pictures III

look for elements of process - what's going on

look for ways the process elements and structure elements interact

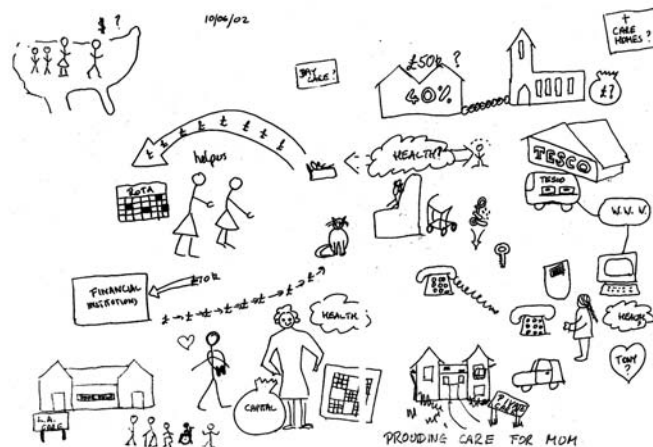


Figure 2 A rich picture might look something like this: it's rich, it uses relatively few words; it has people in it; it carries 'emotional' information; it is sufficiently complex to 'capture' the complexity of the situation.

Step 2^{1/2}: selecting problem themes

Themes

Look for themes or issues that appear to be important in your rich picture (avoid identifying 'the problem')

² This is not a formal stage in Checkland's original methodology.

Step 3: Define a relevant system in terms of a root definition that meets CATWOE criteria

Relevant systems and root definitions

identify a relevant system that relates to each theme

identify the CATWOE items for one of the systems

formulate a root definition that defines the essential nature of the relevant system and what it does

CATWOE criteria for root definitions

Customers - the beneficiaries or victims of the system

Actors - those who do the constituent activities of the system

Transformation - what is the transformation process

Weltanschauung - the world view that gives meaning to the system

Owners - those who own the system

Environmental constraints

A system for matching Mum's needs to available care-resources for the rest of her life

Customers	Mum, Viola and Ruth
Actors	Viola and Ruth
Transformation	Mismatched resources and needs to matched resources and needs
Weltanschauung	Matching resources to needs is an ongoing need Viola and Ruth need to have time and energy to spend with their partners and need to look after their own health
Owners	Viola and Ruth
Environmental constraints	Availability of suitable care Mum's consent

Root definition

Viola's and Ruth's system through which they continuously match their own and other resources for Mum's care to Mum's needs at each stage of the rest of Mum's life, subject to Mum's consent and the availability of suitable care options.

Figure 3 The CATWOE and root definition of a system relevant to the resources theme in Viola's and Ruth's rich picture

Step 4: Devise a conceptual model of the relevant system

Conceptual model

This model shows how a system defined by the root definition would work

The model shows what the system is as well as what it does

It contains the minimum logical set of activities for the defined system to work

Conceptual model guidelines

The model is an **activity** model

List the minimum set of activities that have to occur to make the system work

Arrange the activities in a logical order

Check the model is coherent with the root definition

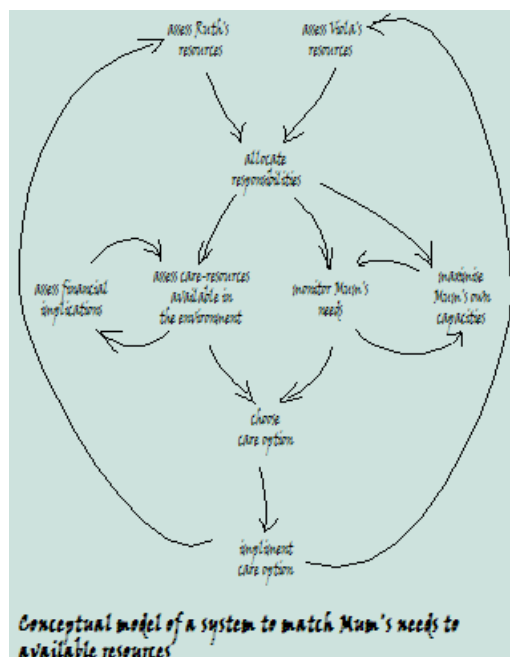


Figure 4 A conceptual model of a system for Viola and Ruth

Step 5: Comparing the conceptual model with the 'real world'

Comparison

Compare the conceptual model with the rich picture

Does the model address the situation in an improving way?

Which elements of the conceptual model are already present?
Which are absent?

Are the elements connected appropriately?

Step 6: Debating feasible and desirable changes

D i s c u s s i o n

~~Debate~~

Take findings back to stakeholders as the agenda for a discussion

Discuss the discrepancies and how the situation might be changed

Negotiate acceptable changes

Step 7: Take action to improve the situation

Implement changes

Implement changes agreed
in the debate

Monitor their effect

References

Checkland, P., (1993), 'Systems Thinking, Systems Practice', John Wiley and Sons, Chichester, England

Further reading

Checkland, P., (1993), 'Systems Thinking, Systems Practice', John Wiley and Sons, Chichester, England

Checkland, P., (2000), 'The emergent properties of SSM in use: a symposium by reflective practitioners' *Systemic Practice and Action Research*, 13, 6, pp 799-814