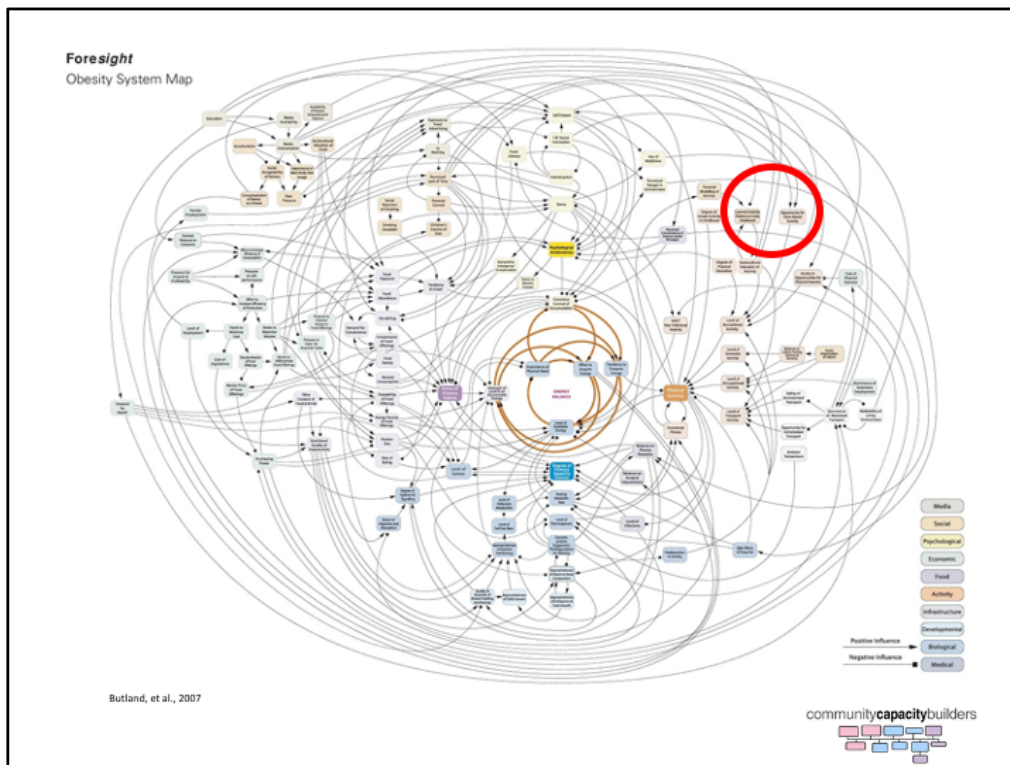


# Systems Thinking

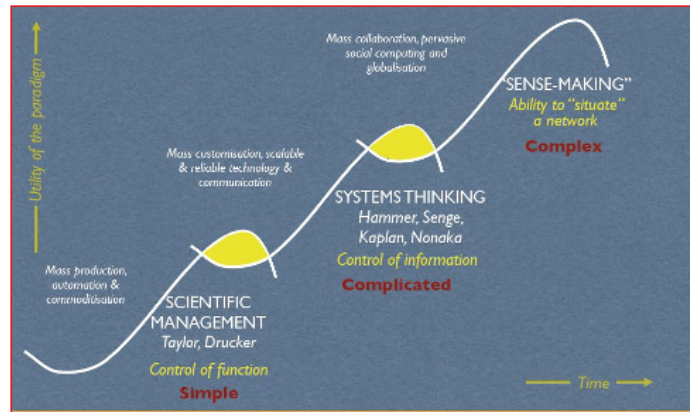


In this lecture we are going to look at the concept of systems thinking.



In Unit 1 we highlighted that social entrepreneurs that take a Social Innovation School approach create systems change by selecting and addressing some of the underpinning causal factors of the problem situation – the ones that they consider will produce the greatest impact (Martin & Osberg, 2015).

## Need to Situate a Network



Dave Snowden (cited in Graves, T., 2010)

communitycapacitybuilders

We also highlighted previously in this unit, that the initiatives that the social innovation school approach to social entrepreneurship creates addresses complicated problems using systems thinking.

## Systems Thinking

- 'defined as the ability to analyze systems as a whole, including the recognition of essential interrelationships within the system and between subsystems, and any changes and patterns that arise out of the networks of relationships and interactions'.

Colbert, 2011



So what actually is systems thinking.

Systems thinking can be 'defined as the ability to analyse systems as a whole, including the recognition of essential interrelationships within the system and between subsystems, and any changes and patterns that arise out of the networks of relationships and interactions'.

Colbert, 2011

## Blind Men and the Elephant

Beyond Ghor, there was a city. All its inhabitants were blind. A king with his entourage arrived nearby; he brought his army and camped in the desert. He had a mighty elephant, which he used to increase the people's awe.

The populace became anxious to see the elephant, and some sightless from among this blind community ran like fools to find it. As they did not even know the form or shape of the elephant, they groped sightlessly, gathering information by touching some part of it. Each thought that he knew something, because he could feel a part. .

. . The man whose hand had reached an ear . . . said: "It is a large, rough thing, wide and broad, like a rug." And the one who had felt the trunk said: "I have the real facts about it. It is like a straight and hollow pipe, awful and destructive." The one who had felt its feet and legs said: "It is mighty and firm, like a pillar."

Each had felt one part out of many. Each had perceived it wrongly.

Cited in Meadows, 2008



Systems thinking recognises that the behaviour of a systems cannot be known by just knowing the element or parts of which the system is made.

This ancient Sufi story about the Blind Men and the Elephant highlights this point.

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## System Dynamics Thinking

- Applies general systems thinking principles to managerial and societal issues
- Looks to the patterns of cause and effect relationships within a system to explain system behaviour
- Principles to understand the structure of systems and determine where to intervene include:
  - interaction characteristics
  - positive and negative feedback
  - unexpected consequences

Foster-Fishman, 2007



Systems thinking is not a single approach – it is a broad field with a number of theories. Two of these theories are system dynamics and soft systems methodology.

Jay Wright Forrester is credited with introducing system dynamics thinking. Systems Dynamics Thinking gained in popularity through the work of Donella Meadows (Meadows, 2008).

System dynamics thinking aims to apply general systems thinking principles to managerial and societal issues by looking to the patterns of cause and effect relationships within a system to explain system behaviour.

System dynamics theorists focus on understanding an issue's root causes. They seek to identify the originating factors within a system that give rise to an identified complex problem.

System dynamics thinking includes principles that assist changemakers to understand the structure of systems and to determine where to intervene. These include interaction characteristics, the impact of positive and negative feedback, and how unexpected consequences from actions can create new conditions or problems.

Foster-Fishman, 2007

## Soft System Methodology

- Systems that are built around human activity are different than systems in the natural or physical world
- Properties of human activity systems are usually experienced and understood differently by different stakeholders
- Encourages change agents to understand the system as a problem situation
- Engages multiple stakeholders in developing “rich pictures” of a problem situation and desired state

Foster-Fishman, 2007



Soft systems methodology was developed by Peter Checkland. In contrast to system dynamics thinking, it challenges the notion that systems that are built around human activity, such as a system for addressing poverty, are subject to the same assumptions that are used to understand systems in the natural or physical world.

For human activity systems, soft systems methodology considers the properties of these systems are usually experienced and understood differently by different stakeholders.

Given this belief, soft systems methodology focuses on engaging multiple stakeholders and encouraging these change agents to understand the system as a problem situation including its social, cultural, and political elements

To assist in this process multiple stakeholders are engaged in developing multiple “rich pictures” of a problem situation and desired state. These rich pictures reflect a given world view rather than an objective reality. The process of developing these rich pictures does not strive for consensus, but seeks to accommodate the different worldviews of stakeholders.

Foster-Fishman, 2007

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