



Health Policy Evaluation: A complex systems perspective

Brian Castellani, PhD

Director, Durham Research Methods Centre

Co-Director, Wolfson Research Institute for Health and Wellbeing



Overview

- What is CECAN?
 - What is a complex systems approach to evaluation?
 - What is the role of methods?
 - Three examples:
 - PRSM participatory systems mapper
 - COMPLEX-IT
 - Complex Evaluation Toolkit
-
- To access these tools, go to Sociology and Complexity Science Blog
 - <https://sacswebsite.blogspot.com/>

The Centre for the Evaluation of Complexity Across the Nexus





- CECAN is the result of the recognition that evaluation of policy interventions in a **complex social world** cannot be tackled by traditional evaluation approaches.
- CECAN is pioneering, testing and promoting **innovative policy evaluation approaches** and methods across nexus domains such as food, energy, water and the environment, through a series of 'real-life' case study projects.

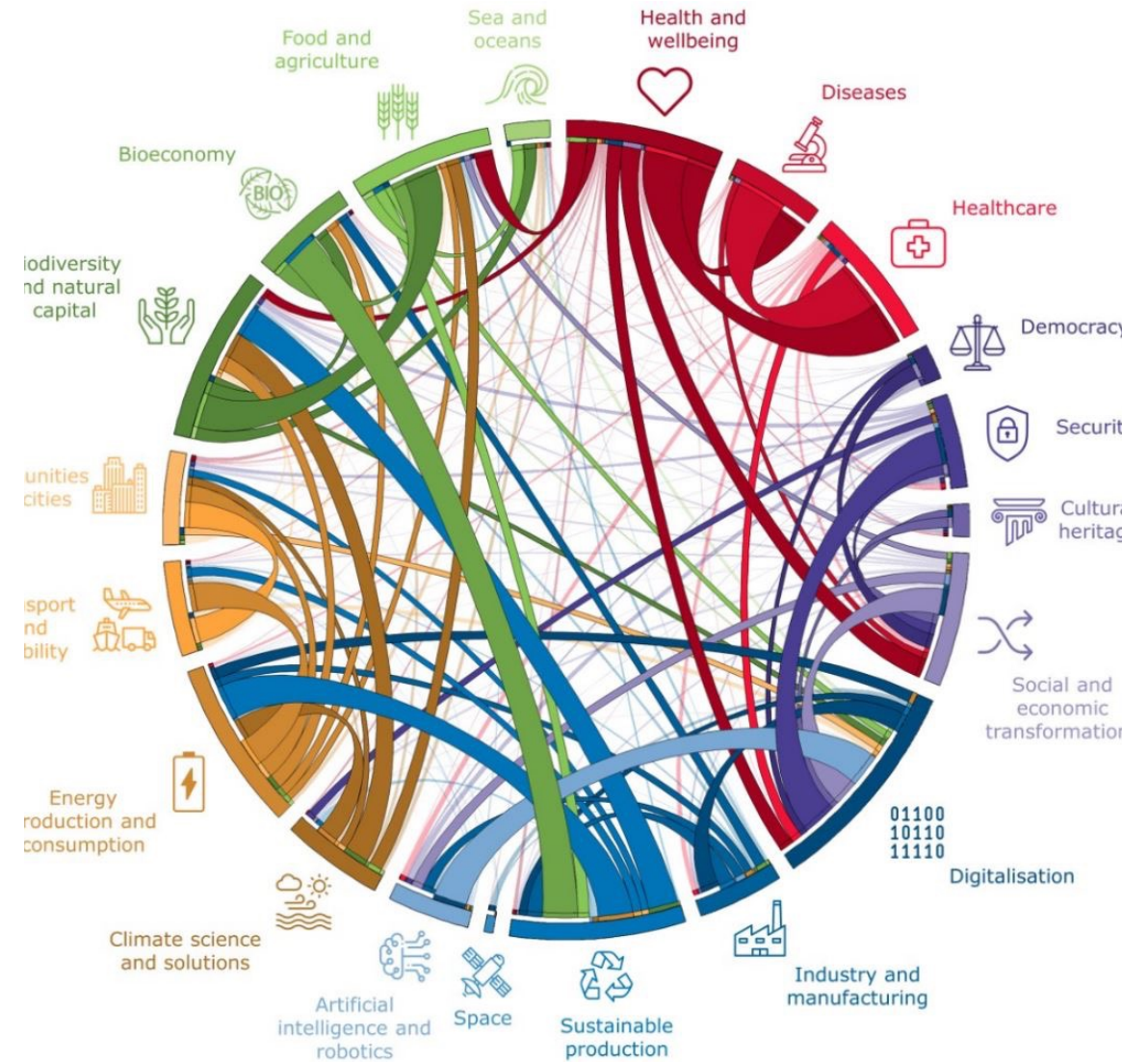
Introduction to the Complexity Sciences

Thinking about social policy from a complex systems perspective

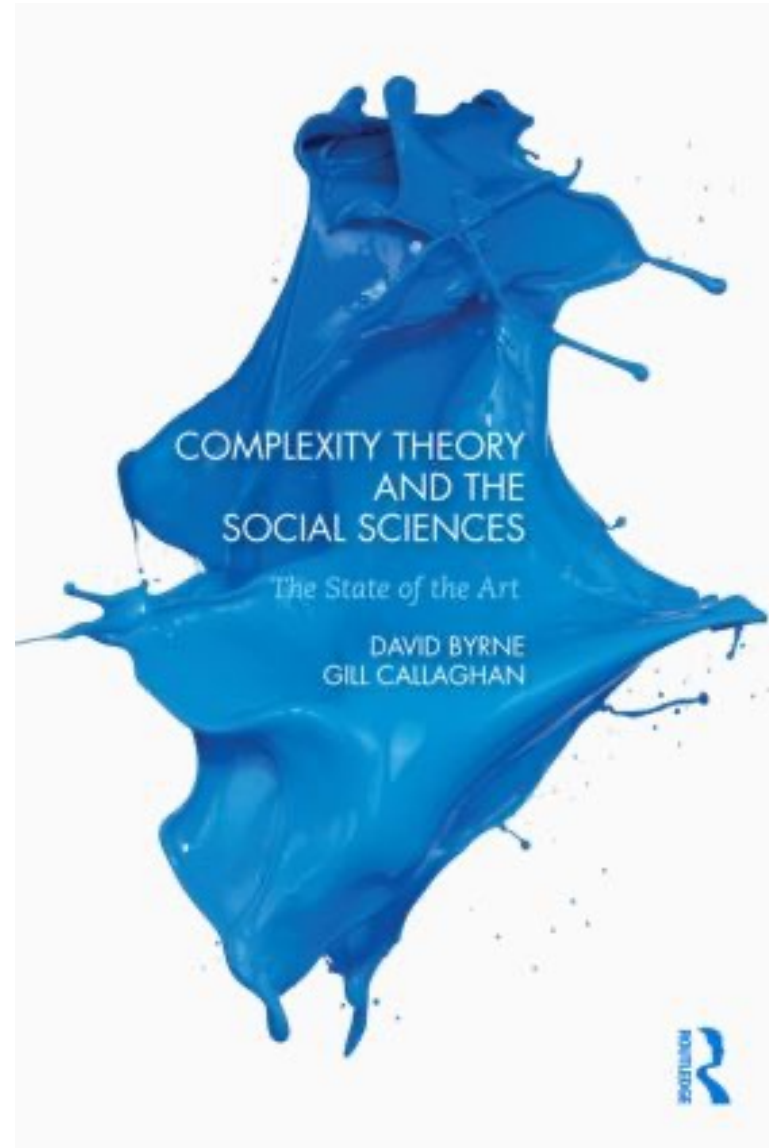


Social science in the 21st Century

- NEXUS ISSUES
- (WICKED PROBLEMS)



What Is
social
complexity?



What is social complexity?

By complex we mean that

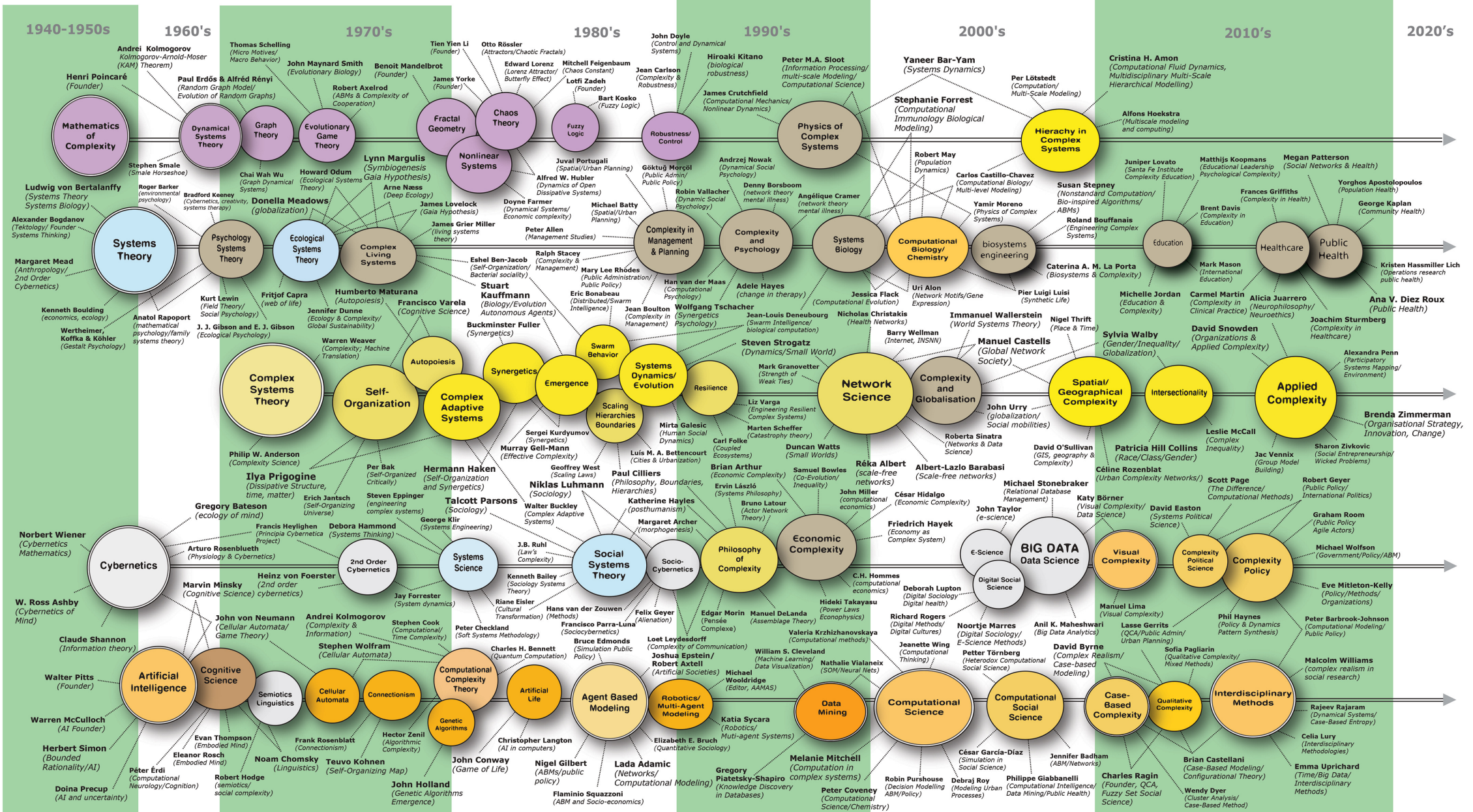
- Most topics of social inquiry are . . .
 - emergent, self-organizing, nonlinear, chaotic, dynamic, network structured, etc.
- But, more important, they are . . .
 - situated within different systems and factors, as such, they are causally complex.
 - evolve differently across time-space.
 - are comprised of different major and minor trends, different sub-types and sub-trajectories.

What is social complexity?

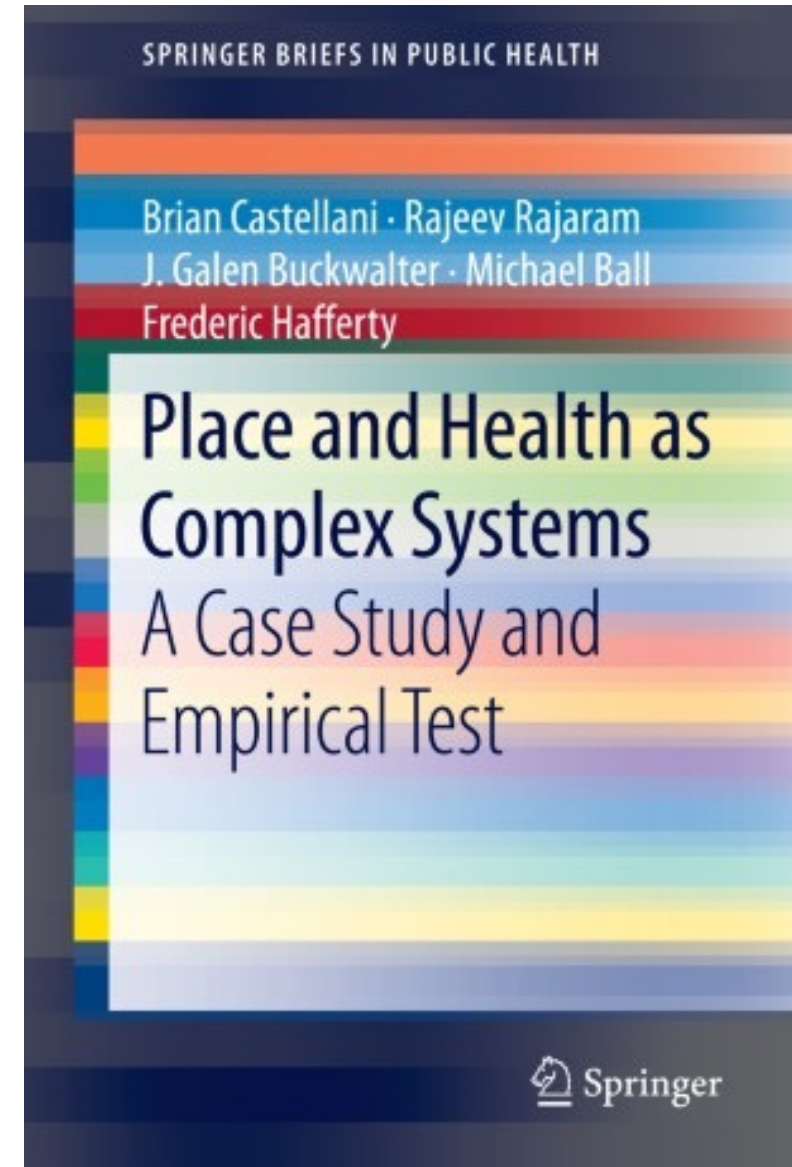
- But, more important, they are . . .
 - Comprised of relations of power.
 - Involve issues of inequality, exploitation, domination, governance, resistance, conflict, etc.
 - Comprised of varying levels of complex psychology, from the individual to the collective.
 - In need of different interventions and approaches to change, as wicked problems are not easily sorted or if ever solved.
- **KEY: demand different evaluation frameworks**
- **KEY: demand different methods**

2021 Map of the Complexity Sciences

Brian Castellani & Lasse Gerrits



1	The Complexities of Place Approach	1
2	Definitional Test of Complex Systems	11
3	Case-Based Modeling and the SACS Toolkit	15
4	Methods	27
5	Places Are Complex	35
6	Places Are Emergent and Self-Organizing	39
7	Places Are Nodes within Larger Networks	47
8	Places Are Dynamic and Evolving	51
9	Places Are Nonlinear	55
10	Places Are Subjective and Historical	59
11	Places Are Open-Ended with Fuzzy Boundaries	63
12	Places Are Power-Based Conflicted Negotiations	67
13	Places Are Agent-Based	69
14	Conclusion	75
	References	77
	Index	81





Exploring complex data from a case-based perspective

Build the Model

1. Build Database and Import Cases
2. Cluster Cases

Test the Model

3. The Computer's turn
4. Compare and Visualise Results

Extend the Model

5. Simulate Interventions
6. Predict New Cases

Export Results

7. Generate Report

beta version
release 2019

COMPLEX-IT is a beta-tested R Shiny available online and in downloadable form on GitHub.

COMPLEX-IT is designed to increase access to the tools of computational social science (i.e., artificial intelligence, micro-simulation, predictive analytics), which it does through its tab-driven interface. The result is a seamless and visually intuitive learning environment for data classification, visualisation, exploring simulated interventions and policy changes, and data forecasting.



**DOWNLOAD
VERSION**



**WEB
VERSION**

USER RESOURCES

Video Tutorials
Step-by-step User Guide
Additional Readings

Meet the team



Brian Castellani



Corey Schimpf



Michael Ball



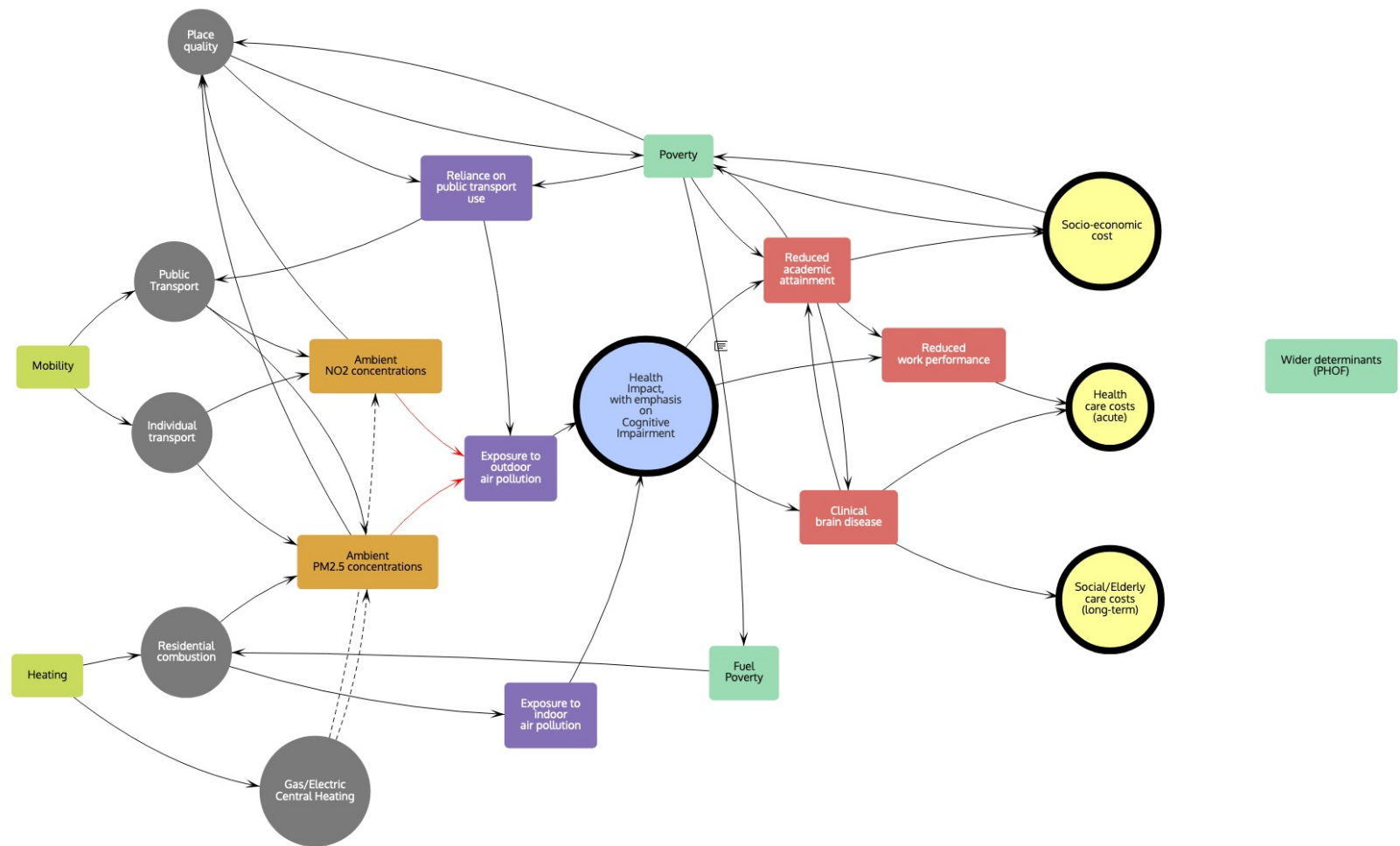
Peter Barbrook-Johnson





PRSM

The Participatory System Mapper (PRSM) is a free, open-source and secure tool for mind-mapping and system visualisation



The background of the slide is a colorful mosaic of small, irregular tiles in shades of blue, grey, and white. Overlaid on this are two large, semi-transparent circles: a light blue one on the left and a dark blue one on the right, which overlap in the center. The title text is positioned within the dark blue circle.

The Complexity Evaluation Toolkit

Complex Evaluation Toolkit

Aimed at those who have some basic knowledge or experience of evaluation and are seeking guidance and signposting on how to handle complexity.

This includes policy analysts in government, evaluation consultants in the private sector, evaluators working in NGOs and charities and so forth.

Complex Evaluation Toolkit

The Toolkit draws from, summarises and builds upon concepts and guidance in key contributions that CECAN has made, such as the Magenta Book Supplementary Guidance (2020), and the Complexity Evaluation Framework (CEF) (2019).

This Toolkit signposts the reader to a range of evaluation resources.

The full reference for each resource including their URL is detailed in Appendix 1: Tools and resources

Each resource is listed in the order that they are mentioned in each Chapter.

Some resources, bolded within the main text, include a hyperlink to their web location.

Chapter 1: Introduction to evaluation and complexity	04
Chapter 2: Commissioning a complex evaluation	07
2.1 Assess the scope and scale of the evaluation	07
2.2 Specify the invitation to tender (ITT)	09
2.3 Develop and submit a response to the ITT	09
2.4 Evaluate bid	10
2.5 Initiate the evaluation	10
Chapter 3: Designing an evaluation	11
3.1 Developing a complex evaluation system	11
3.2 Establishing a Monitoring, Evaluation and Learning Framework (MEL)	11
3.3 Evaluability assessment	12
3.4 Selecting approaches for complex evaluation	14
3.5 Selecting methods	20
3.6 The challenges of data	21
Chapter 4: Managing an evaluation	23
4.1 Management of complex evaluations	23
4.2 Adaptive and agile management	23
4.3 Quality standards in complex policy evaluation	24
4.4 Data Quality	25
Chapter 5: Achieving impact	27
5.1 What happens after a complex evaluation, and why does it matter?	27
5.2 What are the barriers/enablers to complex evaluations being used and having impact?	27
5.3 Analysing past evaluations: an overlooked resource	30
5.4 Commitment to building capacity and capability in evaluation staff	30
Appendix 1: Tools and resources	33
Appendix 2: Glossary of terms and acronyms	40
Acronyms	42