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Tackling complexity using interlinked thinking: well-being as a case study

A dissertation presented in partial fulfilment of
the requirements for the degree of

Doctor of Philosophy
in Ecological Economics

at Massey University, Palmerston North
New Zealand

Vicky Elizabeth Forgie

August 2016

Abstract

The world today is made up of a series of highly interconnected complex systems characterised by uncertainty. Human minds struggle with complexity, and the tools available to help us are limited. This often leads to reductionism, focusing on the parts rather than the whole. Working with individual parts ignores the dynamics that result from interdependencies between components. It is these interactions that determine the behaviour we experience in real world situations. This dissertation presents 'interlinked thinking' as a communication and analytical approach to help people work with, rather than ignore, complexity. It aims to build understanding of feedback loops and systems in a way that does not require expert modelling skills. It is a participatory process that allows people not familiar with systems thinking to have a structured dialogue on how components interrelate, and share their mental models. Links between components are debated and decided on in a workshop session. The resultant causal loop diagrams are transcribed to a matrix and an algorithm run to analyse the links in the system.

The interlinked thinking method was tested using three case studies to answer the principal research question: *Does understanding the relationships between indicators add value and progress sustainable well-being?* Well-being is multi-dimensional, and the complex behaviour of the well-being system does not come from individual indicators but from the interrelationships between indicators and resultant feedback loops. Participants who applied interlinked thinking confirmed value was gained from: (1) increased understanding of the indicators in the system; (2) more visible relationships; (3) expanding the toolkit to work with complexity; (4) an increased ability to bring important issues to the attention of decision-makers; (5) consideration of intervention impacts; and (6) encouraging integrated thinking.

Interlinked thinking can be replicated and used in any situation where having a better understanding of interconnectedness is important but time, resources, and modelling skills are limited.

Key words: interlinked thinking; systems thinking; sustainable well-being; causal loop diagrams; complexity; interconnected; feedback loops; mental model

Acknowledgements

My first tribute is to my father Bruce Reaburn who had a deep love of knowledge and was steadfast in ensuring his seven children had the educational opportunities he missed out on.

Foremost thanks go to my supervisor Associate Professor Marjan van den Belt for providing the opportunity to undertake this research, as well as encouragement and direction over the last five years. Sincere thanks also to Dr Garry McDonald (co-supervisor) for his input and always sound advice.

This research was undertaken as part of the Ministry for Business, Innovation and Employment funded Sustainable Pathways 2 (MAUX0906) research project. I would like to formally express my appreciation to the Ministry for funding this research. Sustainable Pathways 2 research team members Dr Beat Huser, Melanie Thornton, and Regan Solomon have contributed in many ways to the outcome of this research for which I am most grateful.

I would especially like to thank Richie Singleton at Greater Wellington Regional Council, Philip Walker at Statistics New Zealand, and Peter Salter at the Ministry for Social Development for their input and assistance organising the case study workshops.

Thanks to the staff and students of the System Dynamics course at Bergen University, Norway for the opportunities, challenges and knowledge they shared. My appreciation also to Dr Anthony Cole for introducing me to Frederic Vester – the source of inspiration for the route I took with this study.

Special thanks to Janet Lowe for the great work on formatting, Anne Austin and Pippa Grierson for proof reading, and Tomas Burleigh Behrens for writing the algorithm code.

Richard, Rhiannon, Samuel and Lucy (Forgie) deserve the credit for sustaining my well-being throughout the PhD candidature. Thank you for your love, encouragement and support.

To my caring friends, Heike Schiele and Virginia Cook my sincerest gratitude: 'No road is long with good company.'¹

¹ Turkish proverb

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Glossary

Abbreviation	In Full
ANS	Adjusted Net Savings
BRAINPOoL	Bringing Alternative Indicators into Policy
DGPI	Dynamic Genuine Progress Indicator
FEEM SI	Fondazione Eni Enrico Mattei Sustainability Index
GDP	Gross Domestic Product
GHG	Greenhouse gases
GNH	Gross National Happiness
GNP	Gross National Product
HDI	Human Development Index
HPI	Happy Planet Index
Hshld	Household
MSD	Ministry of Social Development
OECD	Organisation for Economic Co-operation and Development
PCA	Principal component analysis
PSM	Participatory Systems Mapping
QoL	Quality of Life
SNZ	Statistics New Zealand
SP2	Sustainable Pathways 2
SR	Social Report
SUPERU	Social Policy Evaluation and Research Unit
TNS	The Natural Step
UNDP	United Nations Development Program
WCED	World Commission on Environment and Development
WR	Wellington region
WR-GPI	Wellington Region Genuine Progress Index
WRS	Wellington Regional Strategy