

Welcome

Systems Thinking and Mātauranga Māori

Tuesday 14 September
4.30pm – 6.30pm



LEARNING SERIES

SYSTEMS THINKING AND
MĀTAURANGA MĀORI




SYNERGIA



1. Introductions
2. Prelude: the place from which our stories emerge
3. Mātauranga Māori– some key ideas
4. Systems Thinking– some key ideas
5. Stories from the field
6. Concluding Comments



A Starting Place for Systems Thinking & Mātauranga Māori

In defence of science

A recent report from a Government NCEA working group on proposed changes to the Māori school curriculum aims "to ensure parity for māhōrangā Māori with the other bodies of knowledge credentialled by NCEA (particularly Western/Pākehā epistemologies)". It includes the following description as part of a new course: "It promotes discussion and analysis of the ways in which science has been used to support the dominance of Eurocentric views (among which, its use as a rationale for colonisation of Māori and the suppression of Māori knowledge) and the notion that science is a Western European invention and itself evidence of European dominance over Māori and other indigenous peoples."

This perpetuates disturbing misunderstandings of science emerging at all levels of education and in science funding. These encourage mistrust of science. Science is universal, not especially Western or European. It has origins in ancient Egypt, Mesopotamia, ancient Greece and later India, with significant contributions in mathematics, astronomy and physics from mediaeval Islam, before developing in Europe and later the US, with a strong presence across Asia.

Science itself does not colonise. It has been used to aid colonisation, as have literature and art. However, science also provides immense good, as well as greatly enhanced understanding of the world. Science is helping us battle worldwide crises

such as Covid, global warming, carbon pollution, biodiversity loss and environmental degradation. Such science is informed by the united efforts of many nations and cultures. We increasingly depend on science, perhaps for our very survival. The future of our world, and our species, cannot afford a lack of science.

Indigenous knowledge is critical for the preservation and perpetuation of culture and local practices, and plays key roles in management and policy. However, in the discovery of empirical, universal truths, it falls far short of what we can define as science itself.

To accept it as the equivalent of science is to patronise and fail indigenous populations; better to ensure that everyone participates in the world's scientific enterprises. Indigenous knowledge may indeed help advance scientific knowledge in some ways, but it is not science.

Kerill Clements
Professor, School of Biological Sciences, University of Auckland

Garth Cooper, FRSNZ
Professor, School of Biological Sciences, University of Auckland

Michael Corballis, FRSNZ
Emeritus Professor, School of Psychology, University of Auckland

Douglas Elliffe
Professor, School of Psychology, University of Auckland

Robert Hale, FRSNZ
Emeritus Professor, Department of Philosophy, University of Auckland

Elizabeth Rata
Professor, Critical Studies in Education, University of Auckland

John Werry
Emeritus Professor, Department of Psychological Medicine, University of Auckland

GP SHORTAGE

Could the Government could immediately address the GP shortage ("Burnout", July 24) is to work with the Medical Council of New Zealand to fast-track foreign doctor registration, which is apparently outrageously difficult and takes a ridiculously long time.

C Johnston
(Auckland)

I know of three over-trained doctors who are working in other jobs. When I asked one (a rest-home carer) why he had not gone through the processes required to register here, he said he had to earn a living for his family and could not afford the fees and loss of paid working time.

Surely we could set up a scheme whereby we retrained and assessed these doctors while paying them a salary? We could then bond them to work as GPs (or hospital doctors) for a set term. Any who failed the assessment would obviously be a cost to the system, but that would be offset by the benefits from those who succeeded.

I am also interested in the example set by the Fred

Hollows Foundation. In this country, cataract operations are done by doctors with full medical training, but is it necessary to understand the anatomy of limbs, for example, to operate on a cataract? Maybe we should be training highly specialised technicians to do a lot of the jobs that doctors now do, releasing doctors to diagnose and treat patients whose needs are less clear.

Carol Dossor
(Napier)

A good GP is a wonderful resource, but the decline in number and availability is now long-standing and unlikely to change even if another medical school were to be created.

Nurse practitioners are experienced registered nurses with an additional master's degree who are legally able to deliver exactly the same diagnostic, prescribing, referral and management of presenting conditions as a GP. This country has well over 500, some of whom have been in their position for 20 years.

Importantly, nurses are the only profession who remain well distributed throughout the country, and so with a relatively small investment could become nurse practitioners in the rural areas and small towns in which the shortage is being felt most keenly.

Letters to the editor (listenerletters@aremedia.co.nz)
The Editor, NZ Listener, PO Box 63222, Kingsland, Auckland 1382

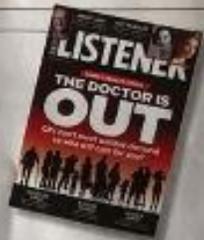
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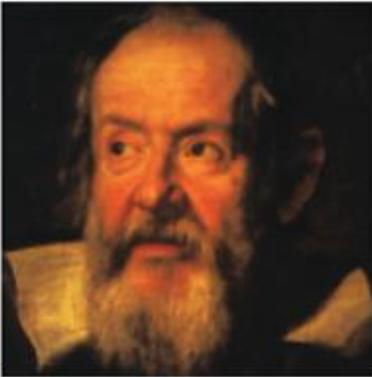
Science and Faith



Thomas Aquinas
(1225 - 1277)



Francis Bacon
(1561 – 1626)



Galileo Galilei
(1564 – 1642_)



René Descartes
(1596 – 1650)



(2021)

I think, therefore I am”

René Descartes

Since only humans possess reason, they surmised, and reason was what made humans divine, then the rest of the natural world lacked divinity. Nature was thus a mere machine without intrinsic value....

In defence of science

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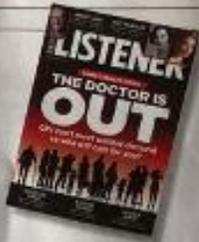
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Rather than celebrate the enormous achievements of the scientific method they work within, while acknowledging its weakness and limitations, they argue that it is only by following their path that we will discover "empirical, universal truths".

They adopt the stance of many fundamentalists, ignoring the unproven beliefs that underpin their pathway, and criticising those who do not adhere to them.



Mātauranga Māori and Systems Thinking begin from the belief that the world is an organic whole, filled with life, connected in a myriad of ways, much of which we do not see, are not aware of, yet within which we are intimately entwined.

Photo by [Sandy Millar](#) on [Unsplash](#)



Mātauranga Māori: Some Core Ideas

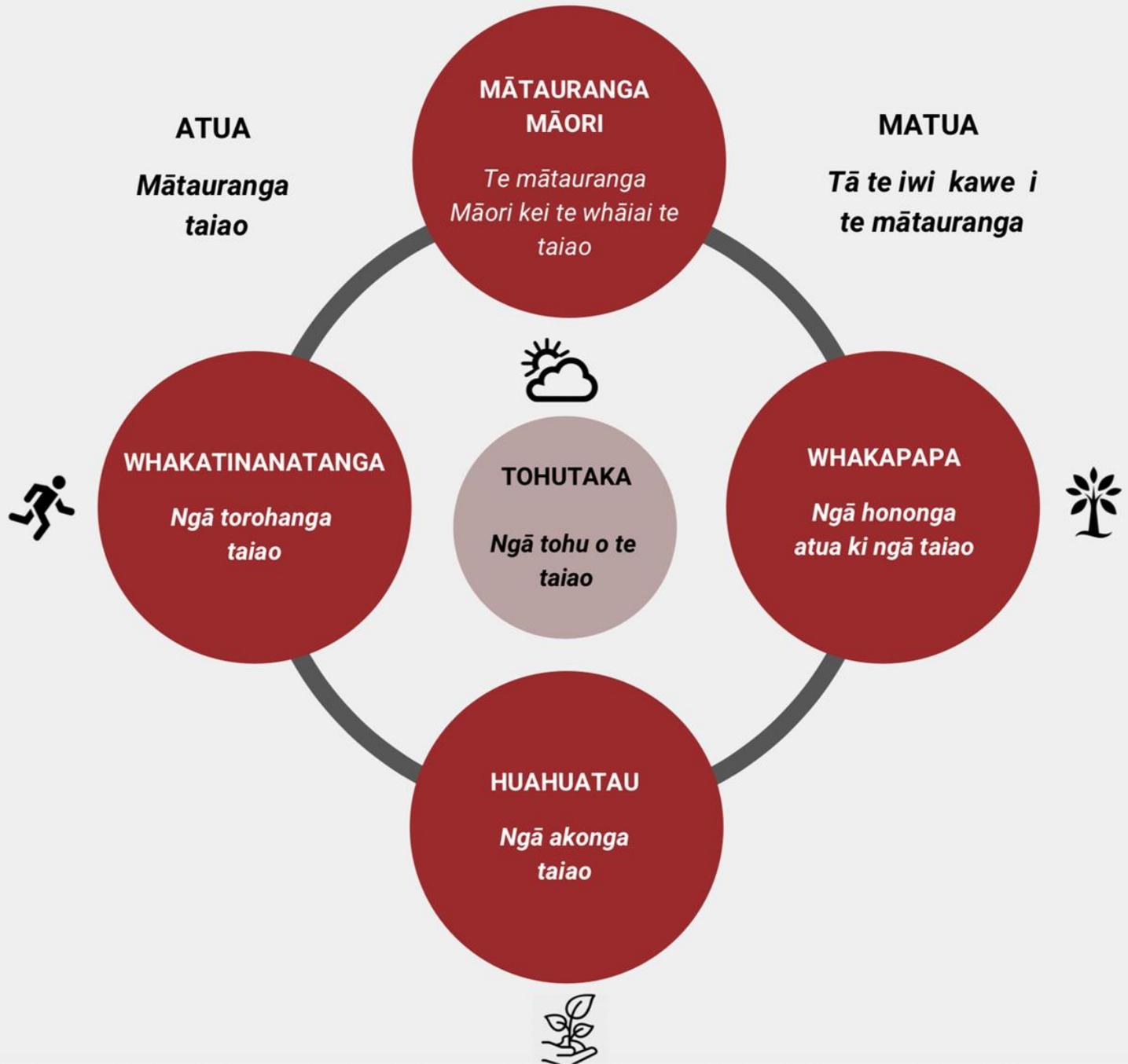


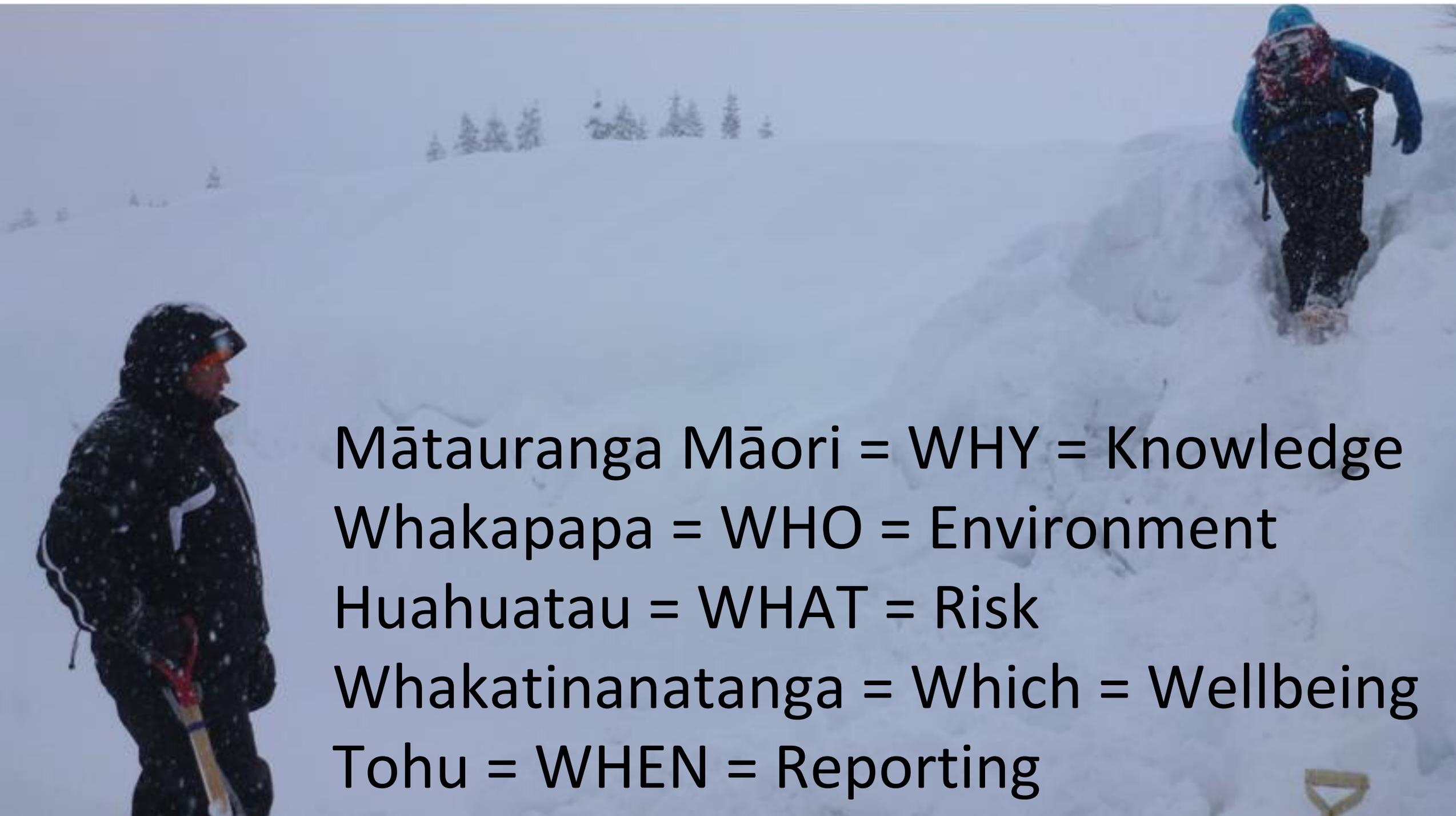
ATUA MATUA





Mātauranga
Mōhiotanga
Maramatanga





Mātauranga Māori = WHY = Knowledge
Whakapapa = WHO = Environment
Huahuatau = WHAT = Risk
Whakatinanatanga = Which = Wellbeing
Tohu = WHEN = Reporting

A dirt path winds through a dense forest. The path is reddish-brown and leads into the distance. The forest is filled with tall, thin trees and large, lush green ferns. The lighting is soft, suggesting a shaded forest environment.

**Tinana
Hinengaro
Wairua**



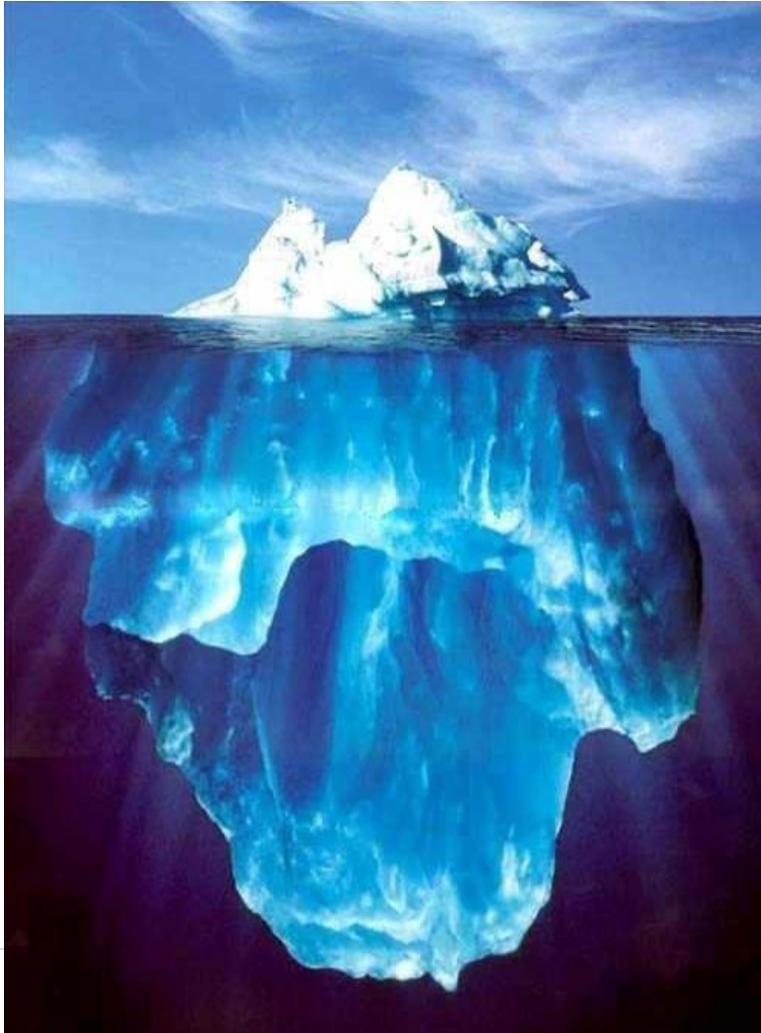
Systems Thinking: Some Core Ideas



A fish is swimming along one day when another fish comes up and says “Hey, how’s the water?” The first fish stares back blankly at the second fish and then says “What’s water?”

Seeing Systems Through Structure

Increasing Leverage



EVENTS

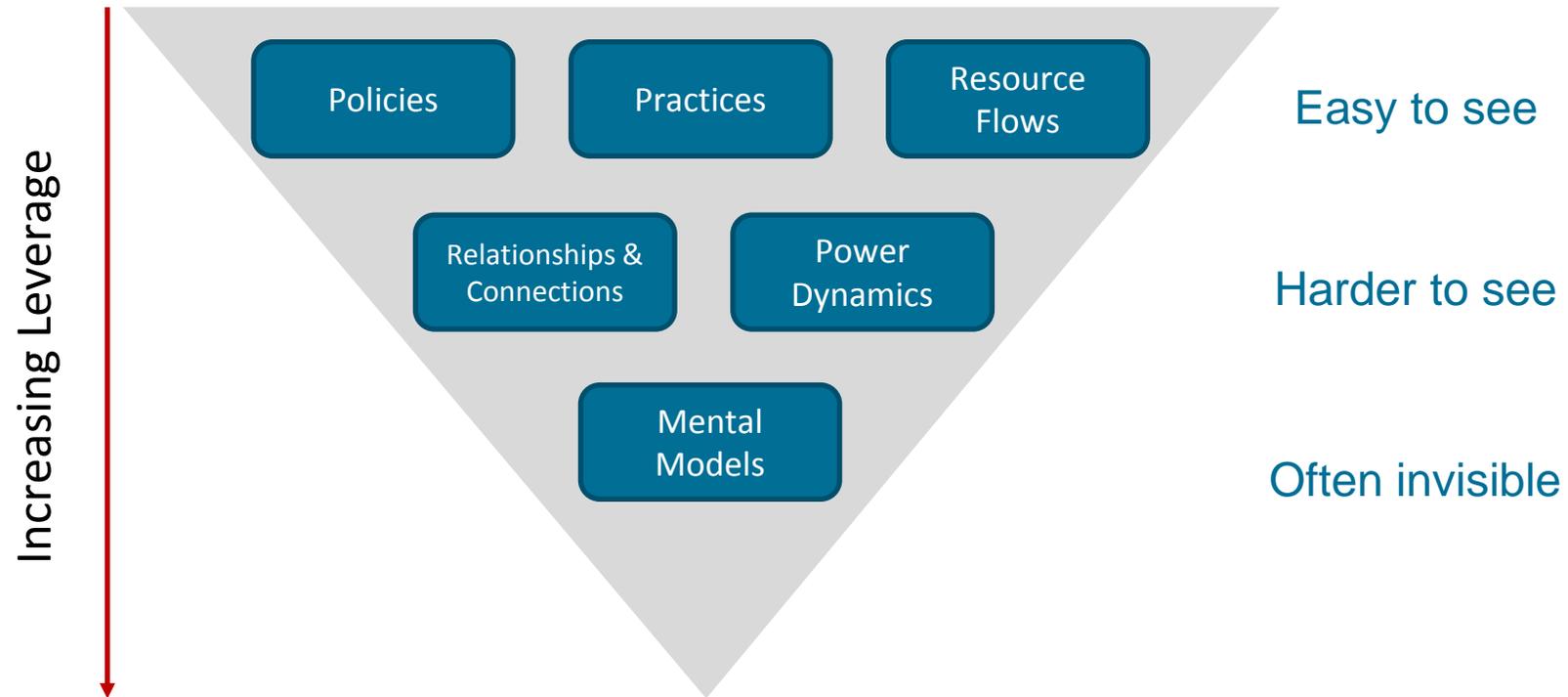
PATTERNS

STRUCTURE

MENTAL MODELS

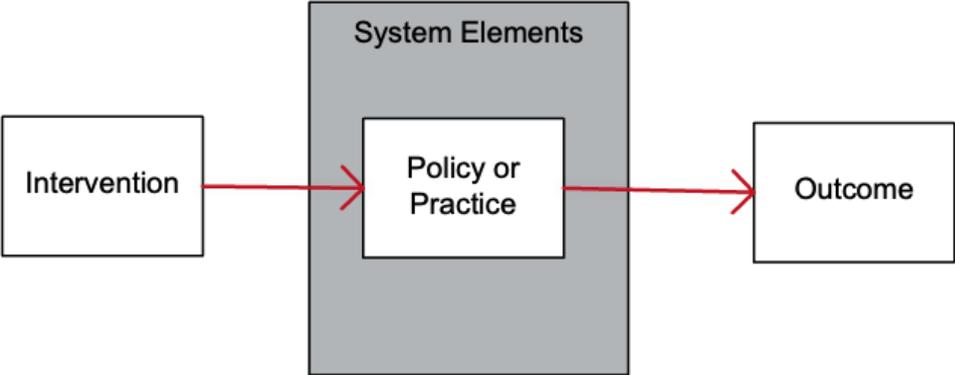
VALUES

Seeing the System Conditions

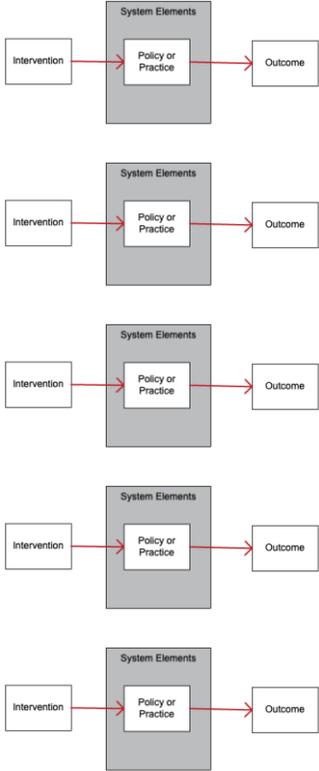


Adapted from:
Kania, J., Kramer, M., & Senge, P. (2018).
The Water of System Change

Mental Models Driving Interventions

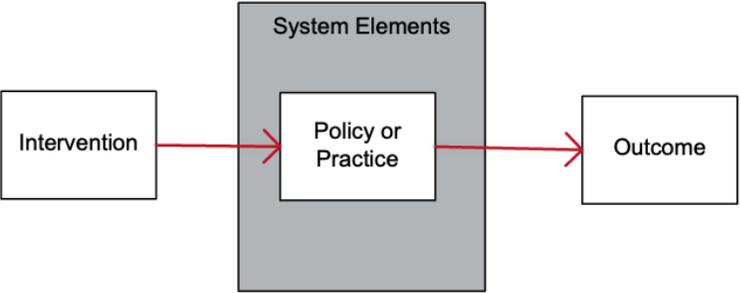


How people think systems function

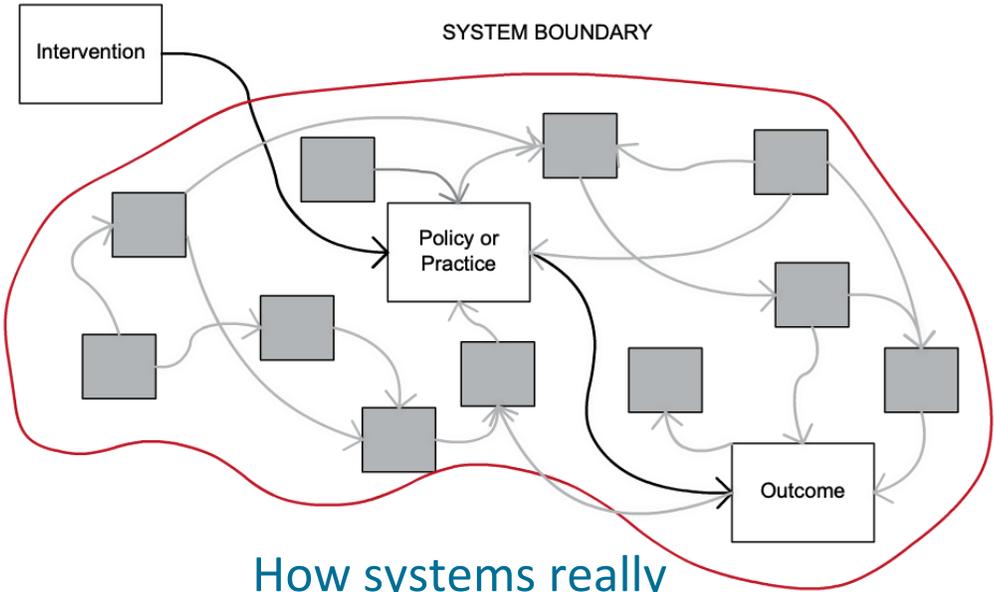


...and change efforts becomes a set of discrete projects & tasks

Mental Models Driving Interventions



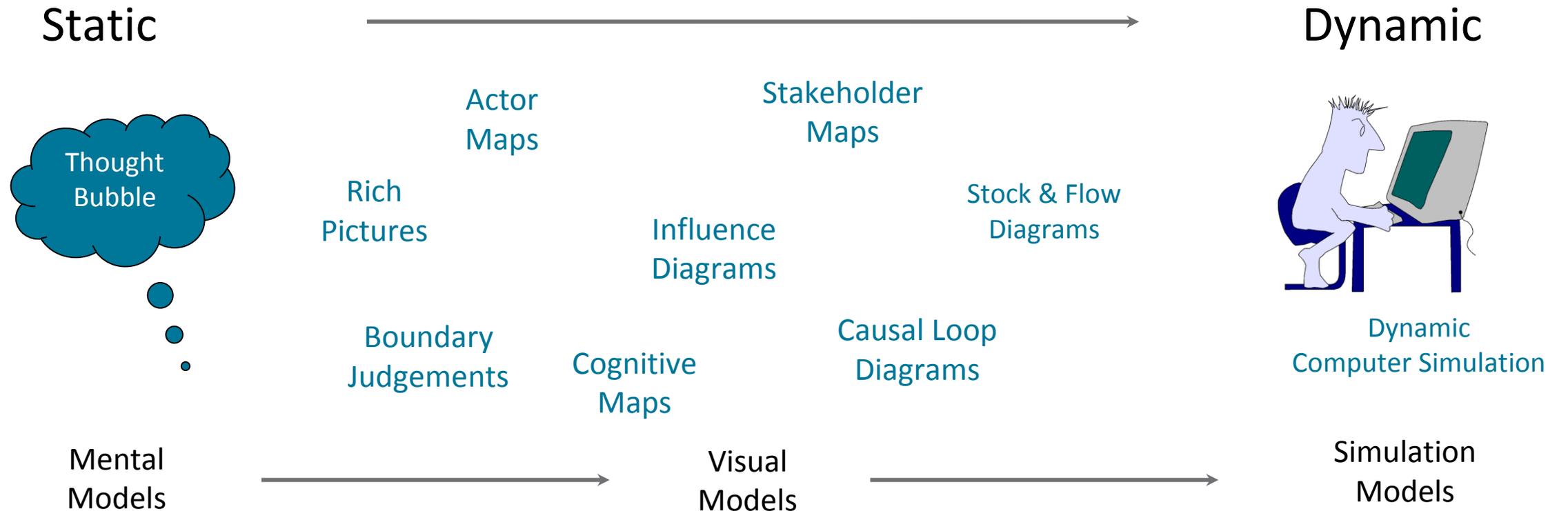
How people think systems function



How systems really function

Adapted from:
Foster-Fishman, P. G., et al. (2007).
Putting the system back into systems change:
a framework for understanding and changing organizational and community systems.
American Journal of Community Psychology, 39(3-4), 197-215

Mapping Systems

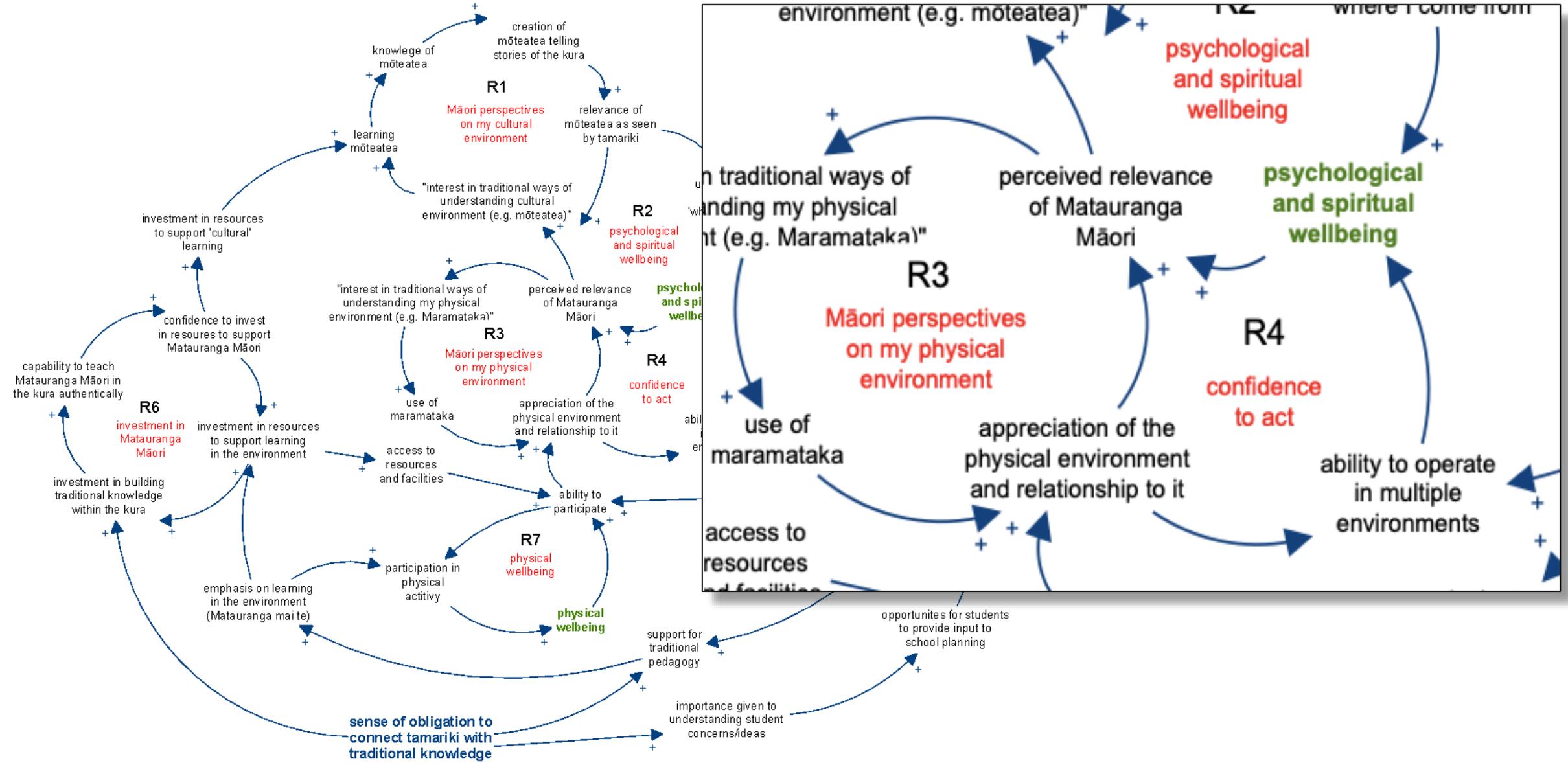




Stories From the Field

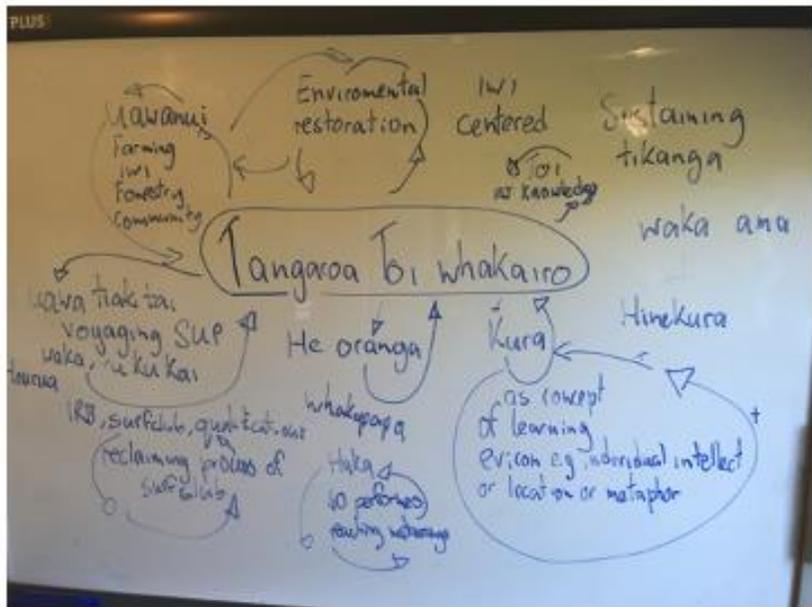
Cases

- Te Kura Kaupapa Māori o Kaikohe
 - Tolaga Bay
 - He Wairua to te Kai: Hawke's Bay
 - Ihi's current work
-





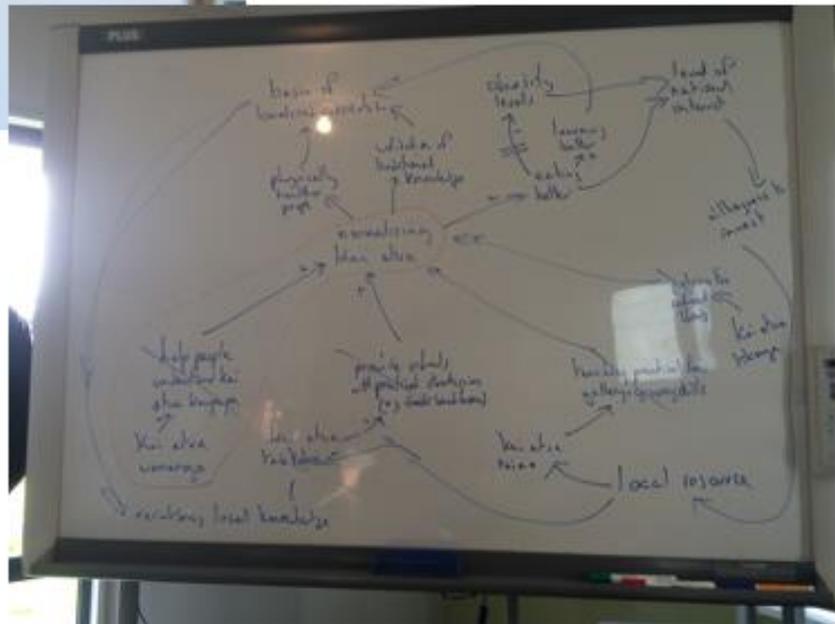
Kaikohe National Leadership
60 Kura owned mountain bikes
50% increase in school role



Takaro tawhito Talking succession vs doing succession

Tangaroa Bi Whakairo

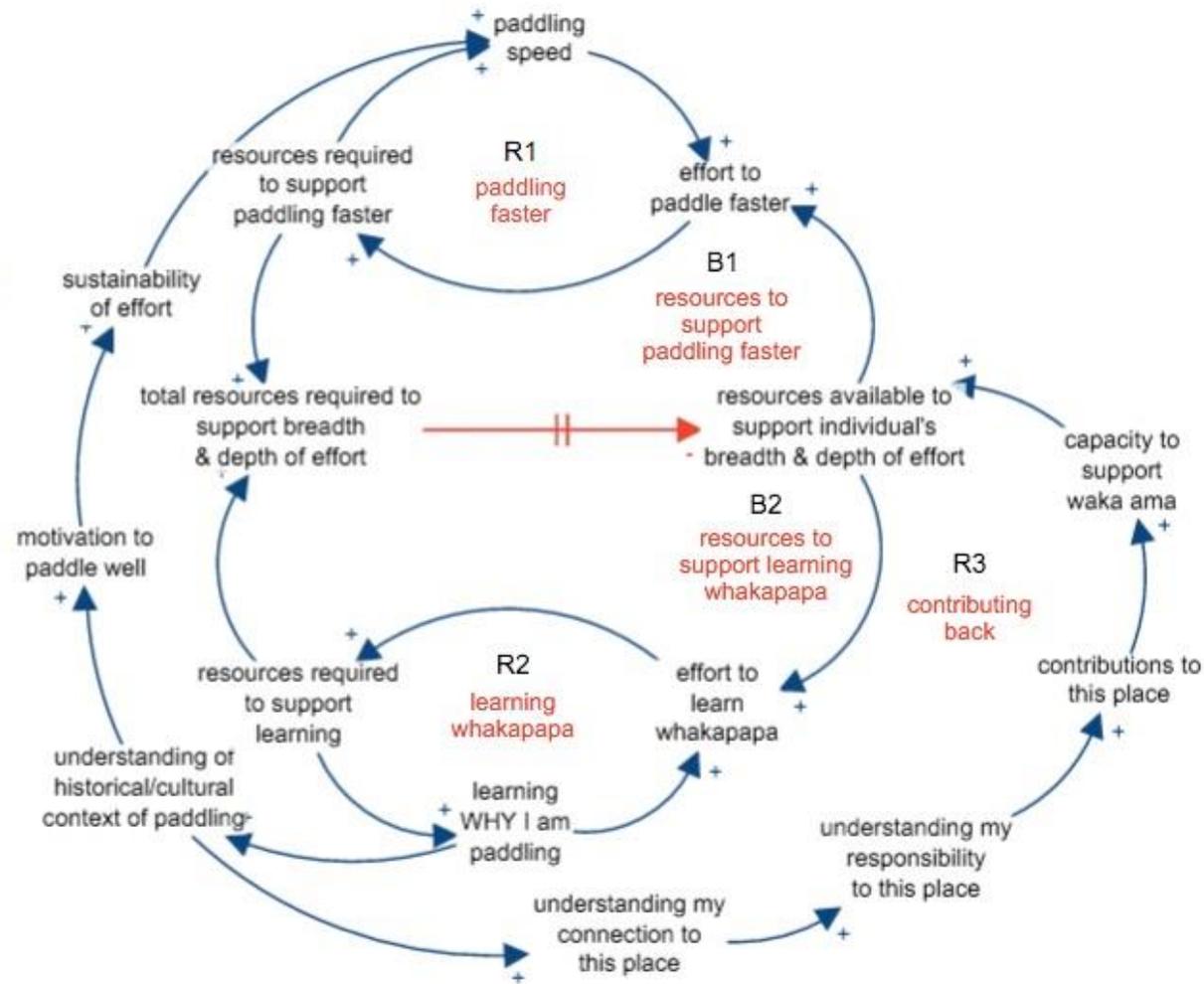
Creating responsibility - obligation Returning members young people decision-making



Waka Ama: more than just winning races?

A second possible way of resolving this resource conflict is to see the 'long term game'.

In this story, *understanding of historical/cultural context of paddling* contributes to *understanding my connection to this place*, which then increases *understanding my responsibility to this place*, their *contributions to this place*, which then, over time, increases the community's *capacity to support waka ama*. This is because the athletes maintain a strong connection to the community and potentially stay longer and/or return more often.



...map extract



Horouta Waka Club
Uawa Navigation Centre
Anaura Ocean Training
Centre



He wairua tō te kai

HAUORA FOR OUR CHILDREN



Nourishing Hawke's Bay: He Wairua tō te kai

Educational research centre

 Follow



Tapuwaekura
Auckland Council
Southern Cross Insurance



Concluding Comments



“Modern Systems Science, bound up with jargon, computers and equations, hides the fact that it traffics in truths known at some level by everyone. Translate the language, and it is often possible to make a direct translation from system science to traditional wisdom”

“The fundamental concepts of a systems approach are connectedness, relationships and community – concepts which are the essence of a deep spiritual awareness “

Donella (Dana) Meadows – Biophysicist and System Scientist



He Whakaaro: 'Kahore he aha i hangahia, i puta noa mai ranei, kia noho wehe i tenei ao. Ahakoa matangaro, ka rangona te mauri.

'Nothing in this world was created, or simply emerged, to exist in isolation. Even the invisible can be detected by its impact [on something else].

Rev. Tukaki Waititi - Master Carver.

Our next event:

**Systemic Approaches to
Obesity Prevention**

Tuesday 2 November

**Prof. Boyd Swinburn
Dr. David Rees**



LEARNING SERIES

SYSTEMIC APPROACHES
TO OBESITY PREVENTION



SYNERGIA