

A network diagram with red and black nodes and connecting lines, set against a light red background.

The Impact of Social Sciences and Humanities on Society

14-16 October 2020, Ottawa

13.45pm – 15.00pm

Indicators of SSH Impact

Kate Geddie (Chair) - CIFAR

Vera Hazelwood - Researchfish

Kara Scally-Irvine – Aotearoa New Zealand Evaluation Association

INDICATORS OF SSH IMPACT

Kate Geddie, Senior Director of Research, CIFAR

AESIS Conference: Impact of Social Sciences and Humanities

October 14, 2020



SESSION:

Building more reliable and feasible metrics for evaluation of societal impact by SSH research.

SPEAKERS

Kate Geddie

Vera Hazelwood

Kara Scally-Irvine

Questions:

How do metrics differ for monitoring vs evaluation efforts?

Can impact metrics be standardized or should they be bespoke?

What challenges exist with using metrics for social impact assessment, and in particular for SSH research?

How do research timescales come into play?

CIFAR supports
interdisciplinary programs
addressing
questions of global importance

profoundly changes or creates a
field of study of importance to our
understanding of the world

is sufficiently bold, novel and
high-risk to warrant CIFAR's long-
term investment (five year,
renewable)

needs CIFAR's model to pursue
the question

CIFAR at a Glance

Founded in

1982

Number of research programs since inception

27

Institutions

130+

Annual Budget

\$41M

Number of researchers

400+

Nobel laureates since inception

20

Number of research programs

13

Number of countries

20

CIFAR Portfolio of Programs

LIFE & HEALTH



Fungal Kingdom: Threats & Opportunities
What can we uncover in an unknown biosphere?



Humans & the Microbiome
How do the microbes that live on and in us affect our health, development and behavior?



Molecular Architecture of Life
How does life originate and what processes make life possible?

INDIVIDUALS & SOCIETY



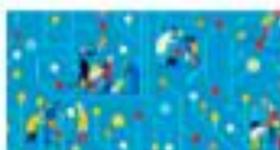
Azrieli Brain Mind & Consciousness
What are the origins and mechanisms of consciousness?



Boundaries, Membership & Belonging
Is it possible to have a world without "us" and "them"?



Child & Brain Development
How do childhood experiences affect lifelong health?



Innovation, Equity & the Future of Prosperity
How can innovation be beneficial for all?

EARTH & SPACE

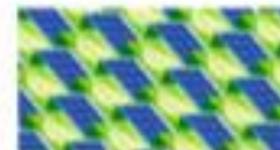


Earth 4D: Subsurface Science & Exploration
How do we understand the life, groundwater and environment deep below the surface of a planet?



Gravity & the Extreme Universe
What is the nature of extreme gravity, and how can it help us understand the origin and evolution of the universe?

INFORMATION & MATTER



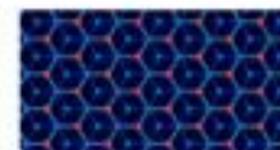
Bio-Inspired Solar Energy
How can we learn from nature to harvest energy from the sun?



Learning in Machines & Brains
How do we understand intelligence and build intelligent machines?



Quantum Information Science
How do we harness the power of quantum mechanics to improve information processing?



Quantum Materials
How could quantum materials transform our society?

Boundaries, Membership & Belonging



Irene Bloemraad
Will Kymlicka

Yasmeen Abu-Laban
Allison Harell
Frederick Cooper
Victoria Esses
Evan Lieberman
Audrey Macklin
Nathan Nunn
Stephen D Reicher
Prerna Singh
Andreas Wimmer

Keith Banting
Catherine Dauvergne
Hazel Markus
Vijayendra Rao
Ayelet Shachar

Can we redraw boundaries in a way that is more inclusive without losing solidarity and the possibility of collective action?

Artificial Intelligence



1983: Artificial Intelligence, Robotics & Society

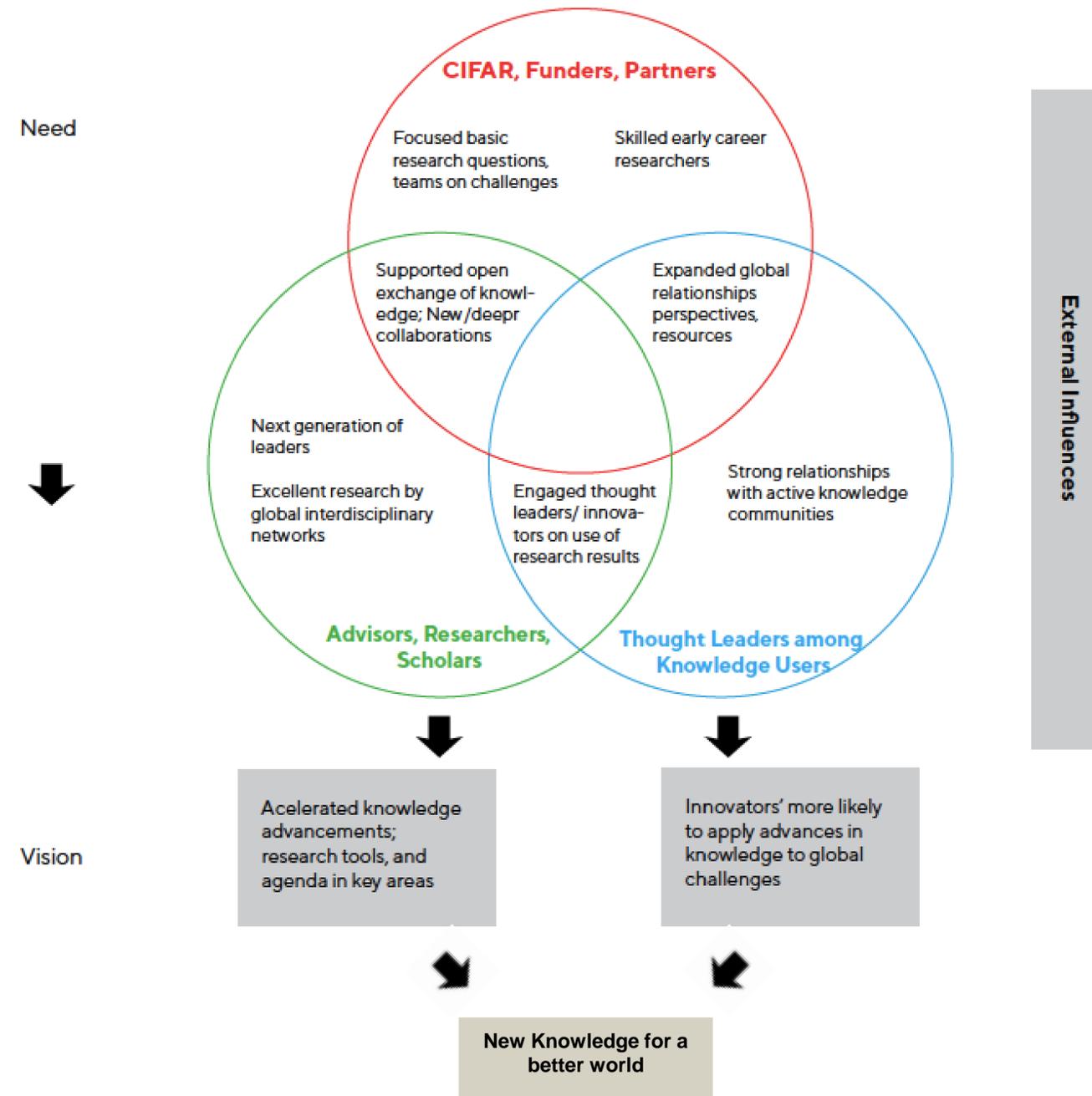
2004–2014: Neural Computation & Adaptive Processing

2015–Present: Learning in Machines & Brains

2017–Present: Pan-Canadian AI Strategy

forthcoming impact assessment report

CIFAR Theory of Change & Logic Model



INPUTS	ACTIVITES	OUTPUTS	SHORT-TERM OUTCOMES	INTERMEDIATE-TERM OUTCOMES	LONG-TERM OUTCOMES
<p>CIFAR staff, Board, Partners, Advisors, Fellows, Scholars, AI chairs</p> <p>Funds, Strategic and Operating Plans, Performance Monitoring Strategy</p> <p>Strategic Communications, IT, Finance, Advancement</p>	Advancing interdisciplinary knowledge creation	Complex research questions of global importance identified and research programs built around them	Outstanding and diverse researchers form long-term commitments to the research programs	Portfolio of research programs is addressing complex, global challenges	CIFAR approach accelerates knowledge advances in key areas and develops new research communities
		Outstanding researchers, from around the world, and from diverse backgrounds, convened in research programs			
		Research-enhancing interactions facilitated	Interactions open exchange of knowledge and deepening synergies		
		Partnerships with governments, research organizations, industry + foundations established	Resources leveraged + network expanded		
		PCAIS program of activities implemented and chairs hired	AI talent is developed, attracted, and retained in Canada; AI research productivity is increased; Collaboration across Canada is increased		
	Supporting long-term growth of next generation initiatives	Exceptional, diverse global scholars engaged and selected	Early career researchers have increased knowledge, research collaborations and networks, leadership skills and experiences	Global scholars' careers are accelerated by enhancing knowledge, skills, training and networks	Early career researchers from Global Academy become changemakers in academia, policy, and/or business
		Opportunities for mentorship, program engagement and leadership training provided		Trainees and next-generation researchers professionally developed	
	Driving societal impact through knowledge mobilization	KM plans for programs developed	Increasingly focused quality engagements with thought leaders in target sectors; Communities are developing and regularly engaged	Communities begin innovating on ideas to develop new innovations in practice, policies, programs and products	
		Key sectors early and iteratively engaged			
		PCAIS AI & Society program implemented	AI&S program participants better understand relevant emerging societal implications of AI		

Using metrics to assess our goal:

New knowledge for a better world

metrics for monitoring & evaluation (what we do and what our programs achieve)

gathering annual scholarly & societal impact data from community

regular five-year expert panel evaluations

power of case studies on longer-term socioeconomic impact

If you would like access to Vera
Hazelwood's presentation, please mail
Vera at vera.hazelwood@interfolio.com



INDICATORS OF *SSH* IMPACT

Building more reliable and feasible metrics for evaluation for societal impact by SSH research.

Kara Scally-Irvine

**AESIS Conference: Impact of Social
Science and Humanities**





ABOUT ME

- Professional journey
 - Multi-disciplinary graduate
 - Role in government - Monitoring of environmental legislation
 - Interest in big real world problems: 'triple bottom line' 'sustainable development'
 - International development: very long history of M&E
 - PhD: systems, interdisciplinary (deep qualitative and quantitative systems modelling)
 - Accidentally fell into the Evaluation profession – 10 years in now!

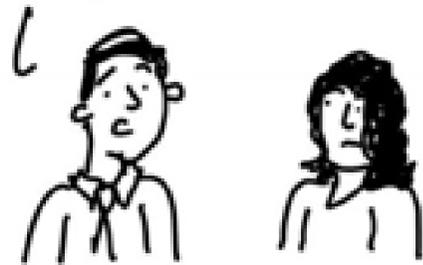


WHY IS THIS IMPORTANT FOR TODAY?

- Its about perspective
- SPOILER!
 - I'm a scientist at heart. I **LOVE** a good metric
 - But have become a jaded professional
- Having good evidence one my critical inputs
 - But I have it *infrequently*
- Acting as a **provocateur** for our discussion!



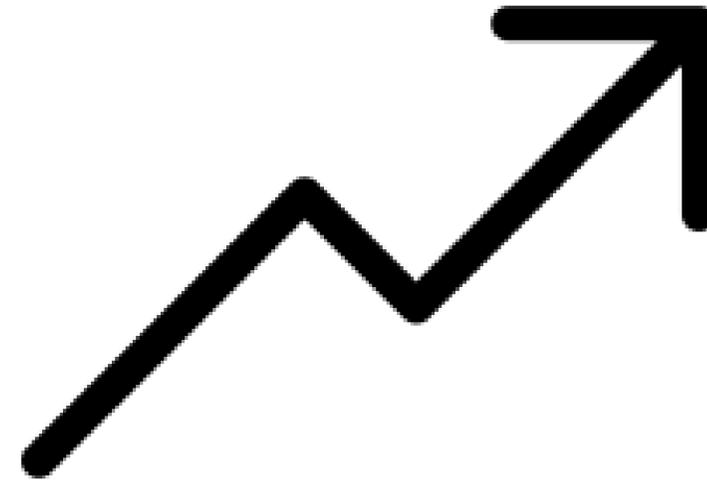
Uh oh, it looks like our evaluator is coming to chat about our project performance.



freshspectrum

MONITORING THE HSNO ACT 1991

- First NZ legislation to *REQUIRE* monitoring *effectiveness*
- BUT no resources to do so
 - Relied on other agencies data
 - Our own incidents data
- Told us very little about how the Act was actually performing:
 - if it was making a difference
 - achieving it's objectives



Increasing hazardous substance incidents

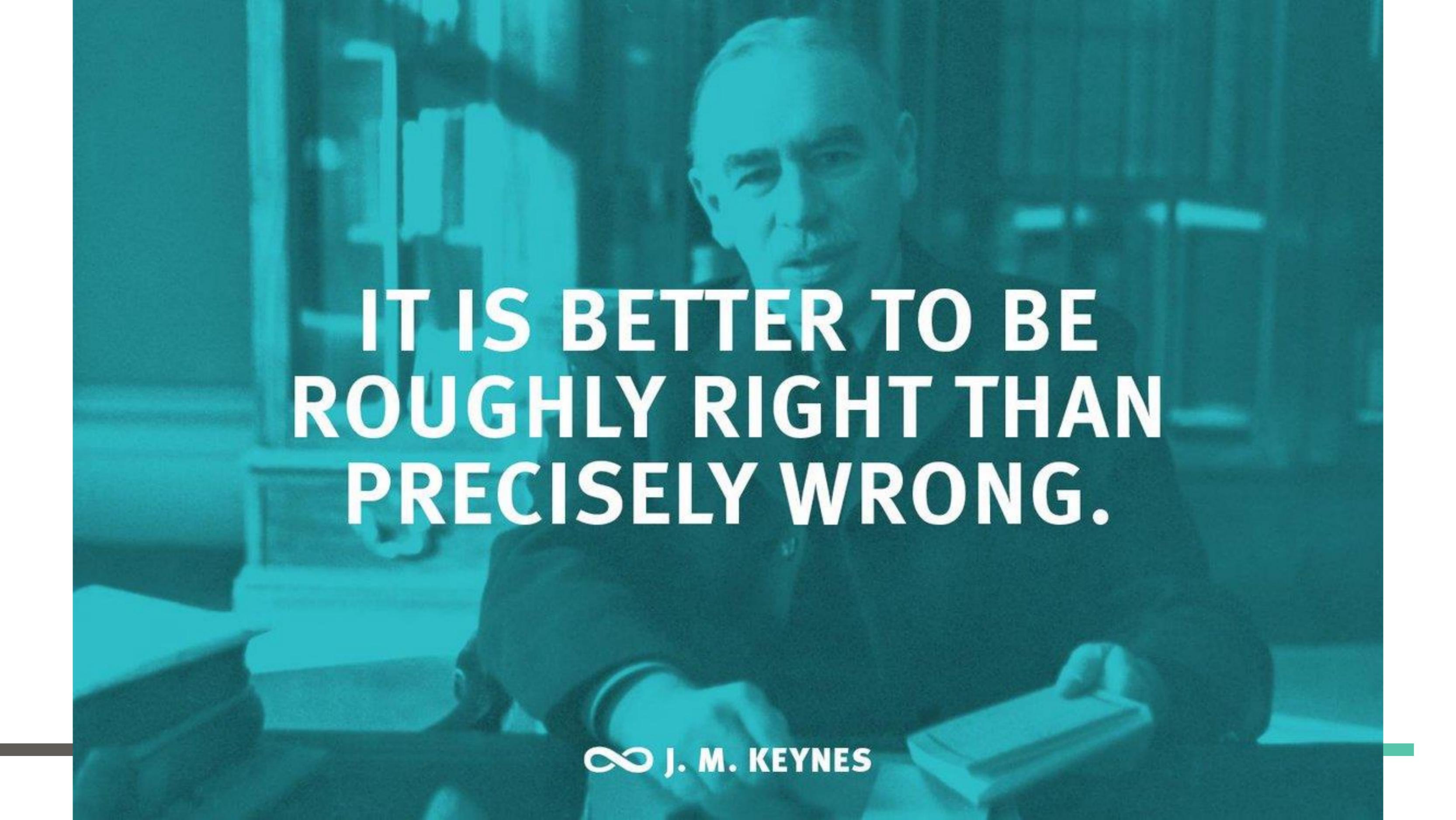
What does that mean?

HUMAN WILDLIFE CONFLICT - CAMBODIA

- Damage to upland rice fields
 - We conducted field measurements of damage and also asked for estimates
 - To inform management responses
 - Estimates order of magnitude higher than 'reality'
 - But that wasn't the reality for those who were victims
 - And had a material impact on the relationship between locals living in the conservation area & the managing authority
- **Who's measure/metric do we privilege?**

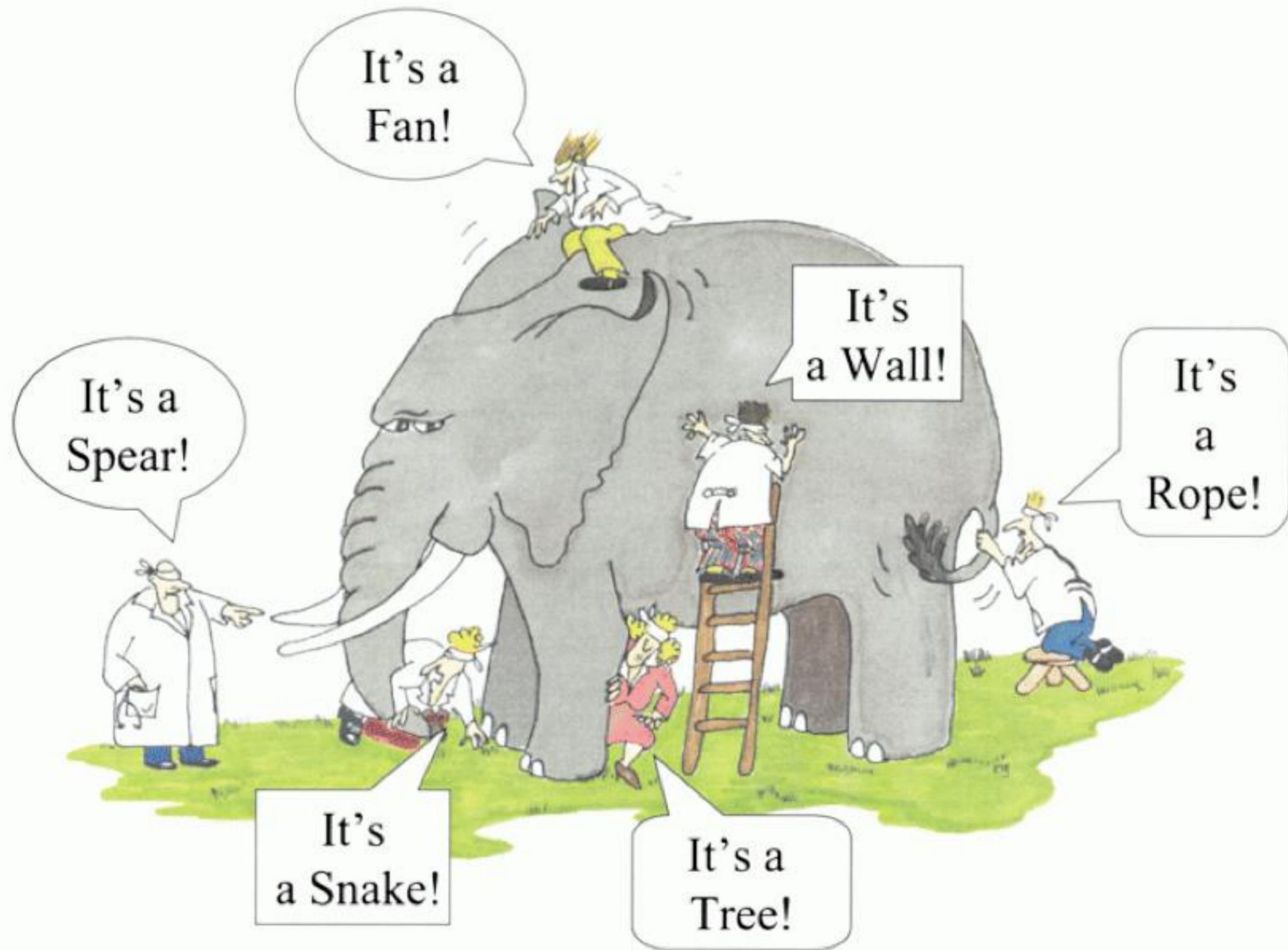
This requires a human value judgement



A photograph of a man in a dark suit and tie, sitting at a desk in what appears to be a library or study. He is looking towards the camera with a neutral expression. The background shows bookshelves filled with books. The entire image is overlaid with a semi-transparent teal color. Centered over the image is the quote "IT IS BETTER TO BE ROUGHLY RIGHT THAN PRECISELY WRONG." in white, bold, uppercase letters.

**IT IS BETTER TO BE
ROUGHLY RIGHT THAN
PRECISELY WRONG.**

 **J. M. KEYNES**



Himmelfarb J et al. Kidney International 2002; 62: 1524

This represents a particular *way of thinking* & *perspective* & *position about knowledge* (ontology & epistemology)



Dr. Duane Hamacher

“Aboriginal oral traditions contain detailed knowledge about the natural world. These include stories about rare events like tsunamis, earthquakes, volcanic eruptions, meteorite impacts and solar eclipses,”...

“By merging scientific data with descriptions in oral tradition we can show that many of the stories are accounts of real-life events. So Aboriginal stories could lead us to places where natural disasters occurred.”

Aboriginal legends an untapped record of natural history written in the stars



03 MAR 2015 | AMY COOPES

Aboriginal legends could offer a vast untapped record of natural history, including meteorite strikes and tsunamis, stretching back thousands of years, research by UNSW's Indigenous Astronomy Group has found.

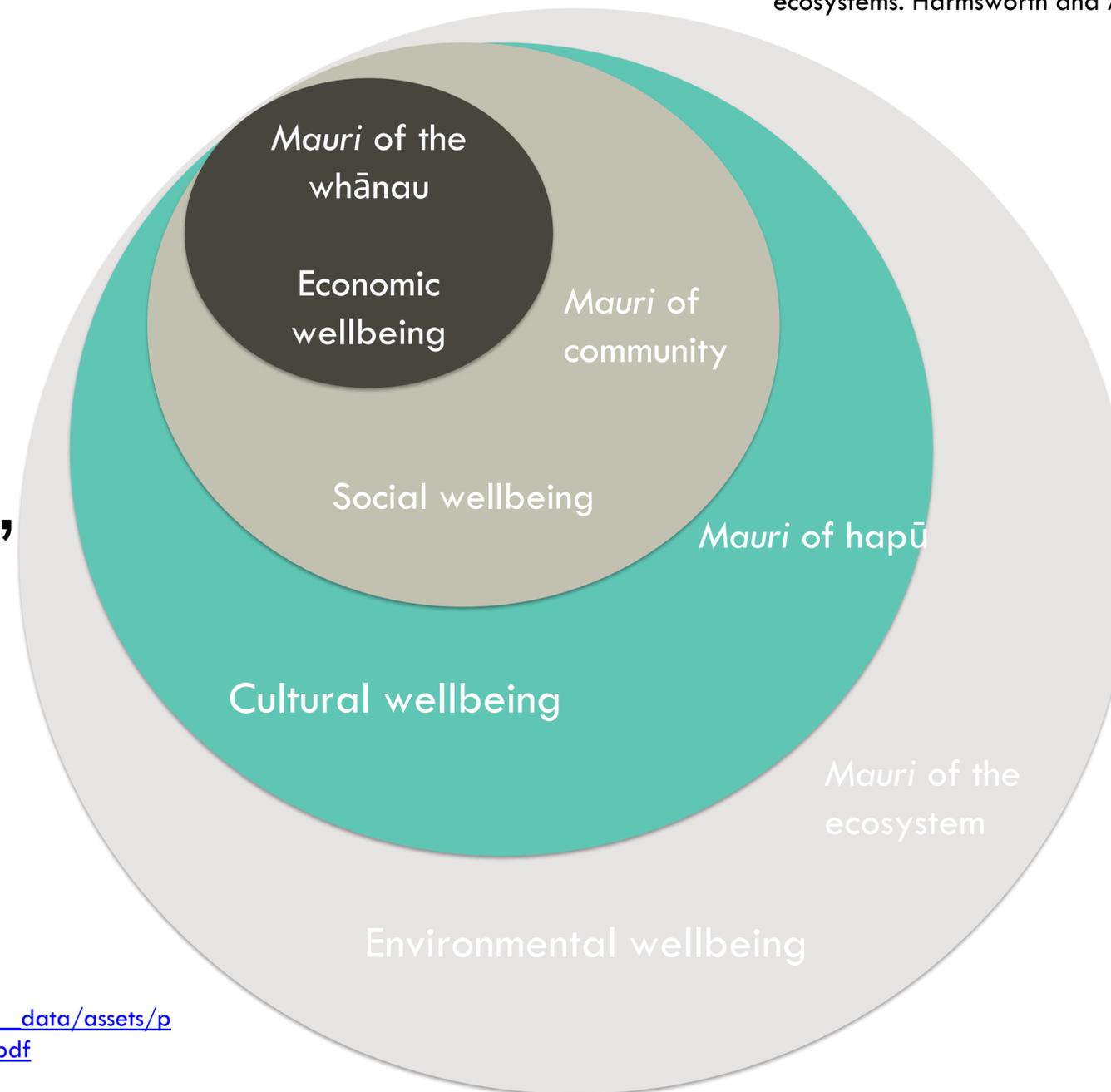


<https://newsroom.unsw.edu.au/news/science-tech/aboriginal-legends-untapped-record-natural-history-written-stars>

MĀTAURANGA MĀORI: Management of resources/natural resources

Indigenous Māori Knowledge and perspectives of ecosystems. Harmsworth and Awatere (2013).

- Nested structure of wellbeing with the environment being central
- Management 'tools' culturally (and now legislatively) embedded
 - Rahui
 - Mātaitai
 - Taiāpure

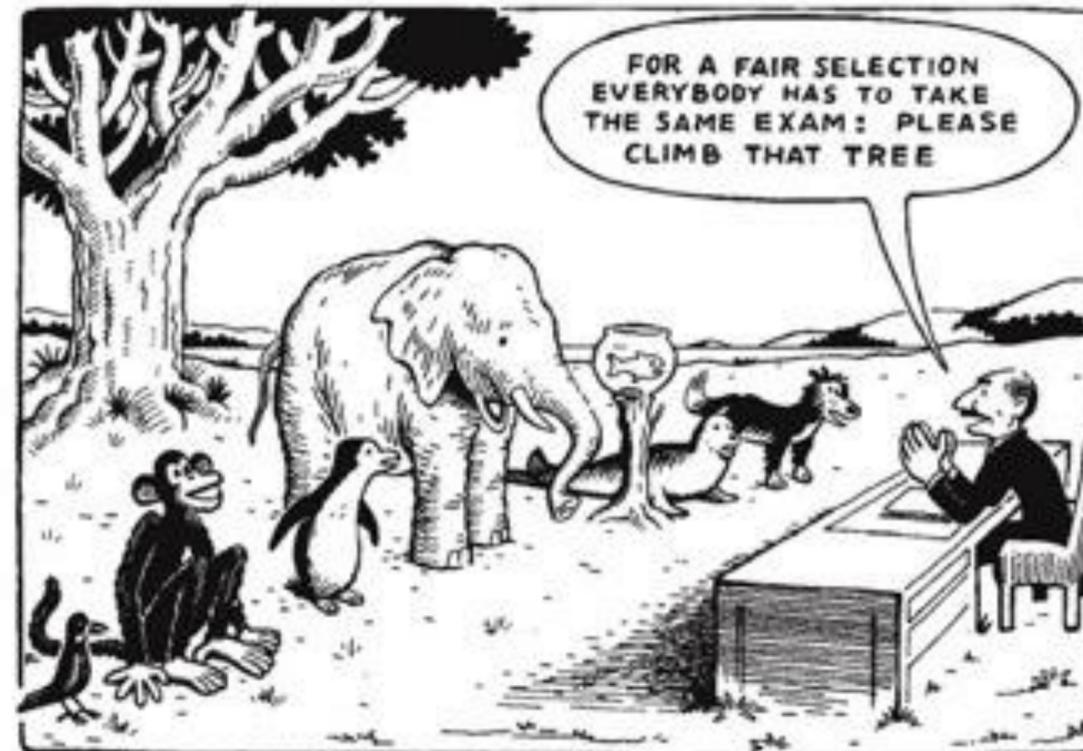
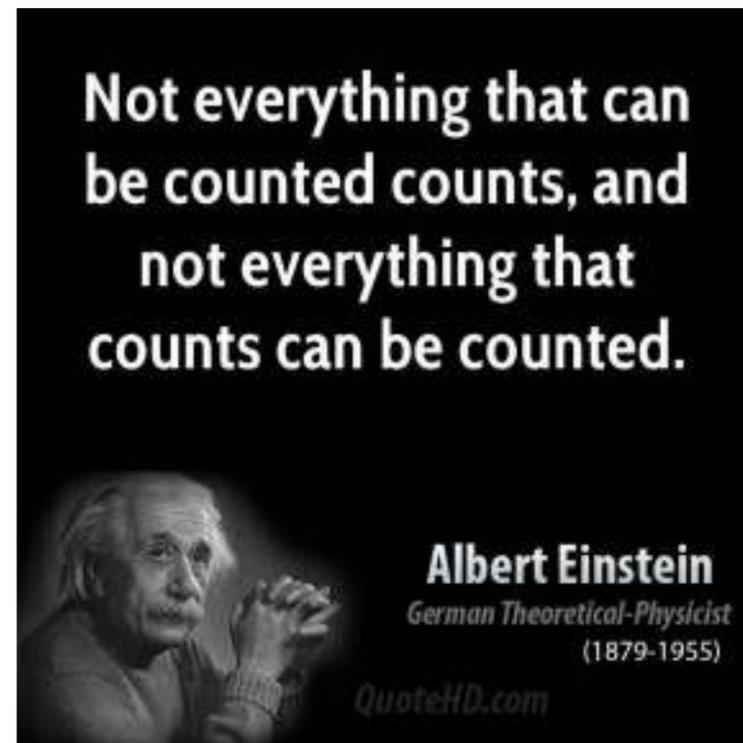


https://wwwuat.landcareresearch.co.nz/_data/assets/pdf_file/0007/77047/2_1_Harmsworth.pdf

Back to our session's topic: Building more reliable and feasible metrics....

BUT is this the right GOAL or QUESTION to be asking?

Especially if we acknowledge the questions we care about today are so complex and challenging?



It is better to be roughly right than precisely wrong....

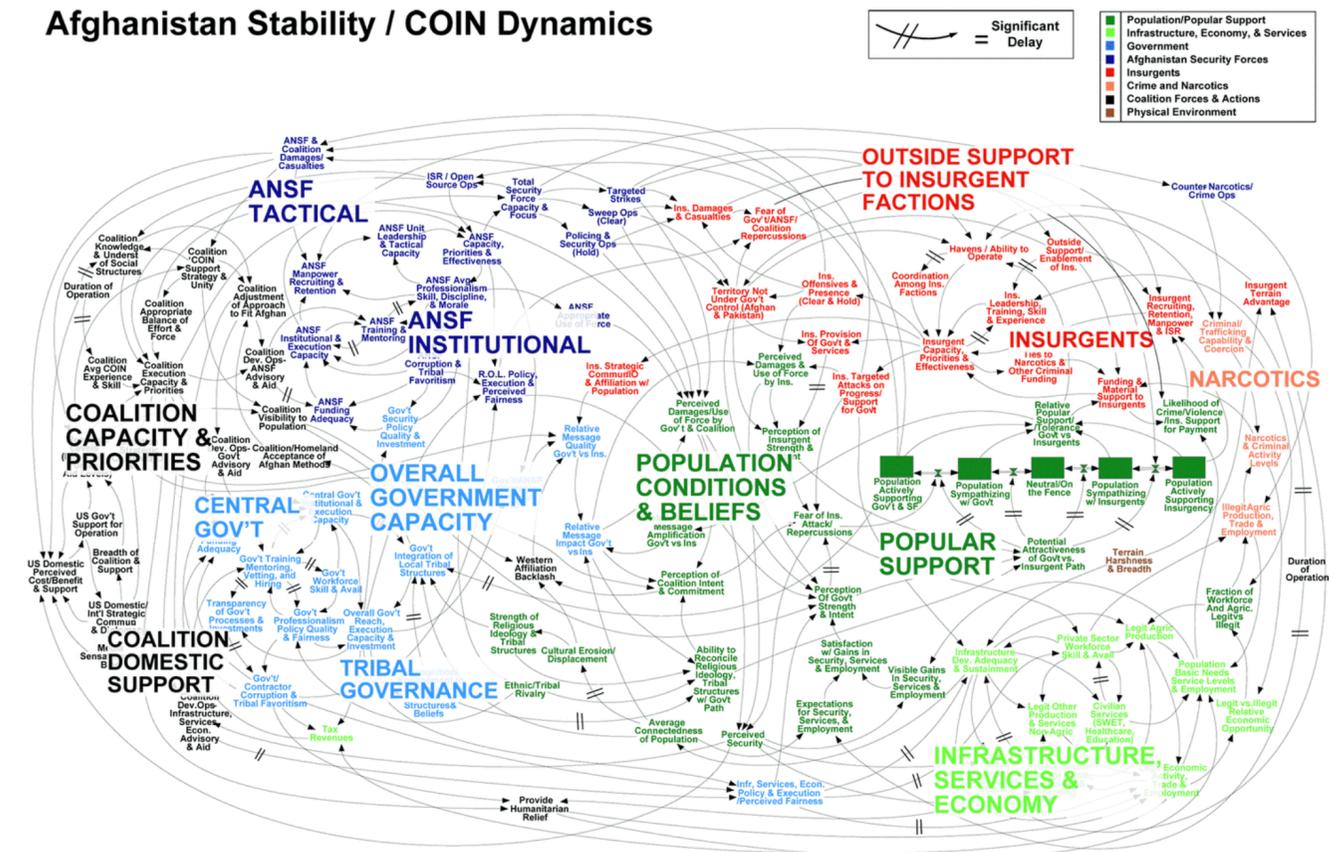
YES this is a simplification

but with SCARES RESOURCES where /
how do we priorities our efforts
 so we can best understand our impact?

People are already tackling differently: designing for social change and 'wicked problems'

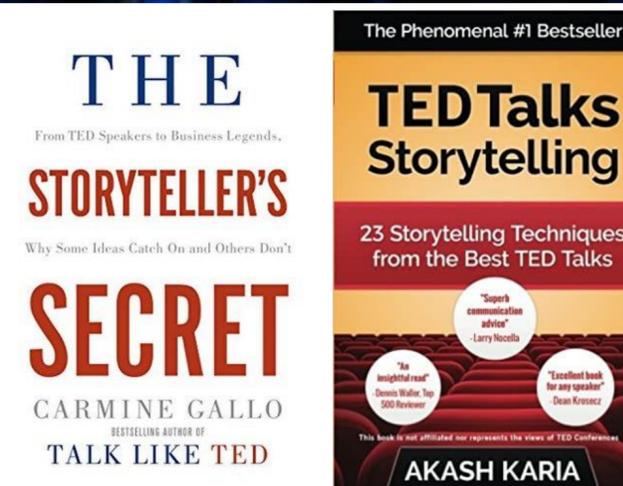
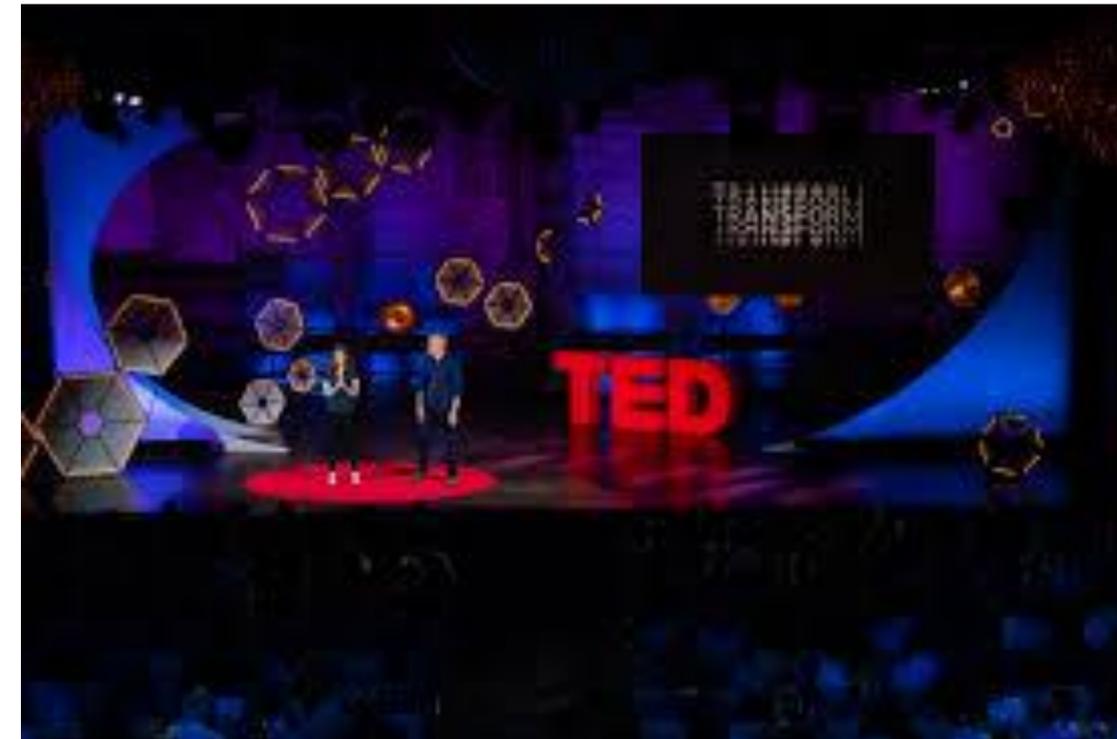
- Wholistic approaches
- More and different perspectives
- Systems thinking approaches & methods

Afghanistan Stability / COIN Dynamics



MY QUESTIONS / PROVOCATIONS

- What 'trade-offs' (to achieve quality and meaningful data – especially quantitative) are acceptable?
 - E.g. do we work harder to get more precision – which comes at a cost?
 - Or do we accept some kind of trade-off and direct some efforts in other useful directions that will give a less precise but broader (more wholistic) understanding of impact
 - We need to go back to purpose
 - why is this information important?
 - And remember message and meaning best understood and remembered when encoded in **STORY**.
- **This all guides what data / evidence / information is prioritised**





THANK YOU!

Dr Kara Scally-Irvine
Director and Principal Consultant
KSI Consulting
kara@ksiconsulting.solutions