



**KOI TŪ:
THE CENTRE FOR
INFORMED FUTURES**

The Science–Policy Interface

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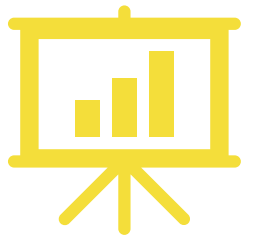
Koi Tū: The Centre for Informed Futures and the Liggins Institute
University of Auckland, New Zealand

Chair; International Network for Government Science Advice (INGSA)
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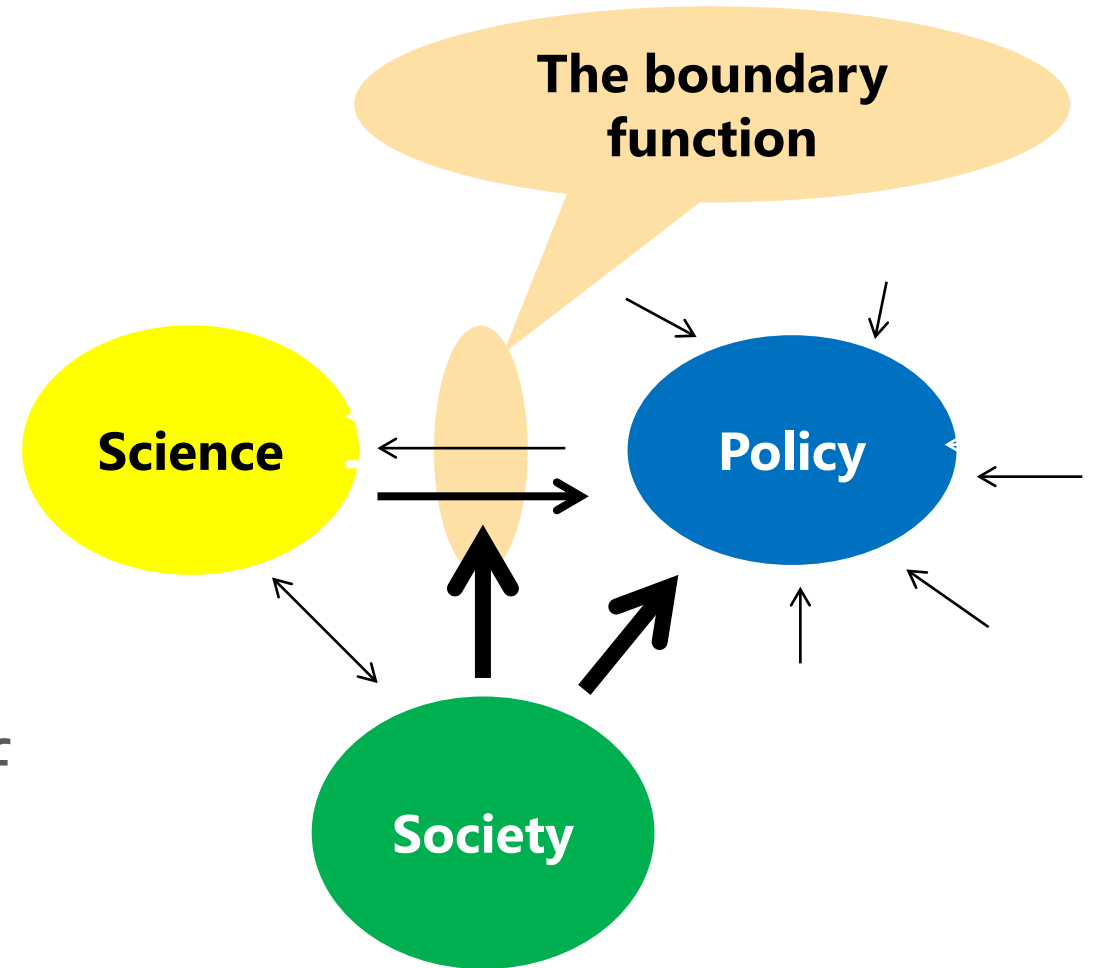
Science and technology advice

Informing or influencing policy through evidence involves much more than simply providing policymakers and politicians with factual results of scientific and technological research, and expecting that these results are applied to policy deliberations and decisions.



Science and policy making

- Science and policy making have very distinct cultures, methods and epistemologies
- The place of societal values is very different in science and policy making
- There is increasing recognition of the need for boundary structures to link these cultures



The science–policy nexus

- Virtually every challenge governments face has a scientific dimension, which may or may not be recognised
- But science alone does not make policy; there are many values and political considerations
- We increasingly face the challenge of a post-expert, post-elite, post-truth world, and of the misinformation age
- Presumption: *That governments are more likely to make better choices when they use well-developed evidence wisely*
- What is a fact, what is data?
- Is robust science available? Who defines it as 'robust/reliable'?
- Will it be used, misused, manipulated or ignored?

Changing nature of science and technology

- From linear to non-linear
- From singular to multidisciplinary to systems-based
- From certainty to probabilistic
- The impact of big data and AI
- From normal to post-normal...
 - The science is complex
 - The science is impacting increasingly on society
 - Facts uncertain, much is unknown
 - Stakes are high
 - Decision making is urgent
 - There is a high values component and values are in dispute
- **The science applied or needed in the policy space is generally 'post-normal'**

Science and policy making

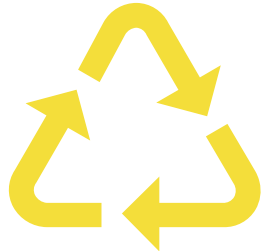
- Policy is rarely *determined* by evidence, but policy can and should be informed by evidence.
- Inputs into policy:
 - The science: evidence of need, possible solutions, impact
 - Public opinion
 - Community values
 - Political ideology
 - Electoral contract
 - Fiscal objectives and obligations
 - Diplomatic issues and any international obligations

What is evidence ?

- Politicians and policy makers have many sources of evidence:
 - Tradition and prior belief
 - Local knowledge
 - Anecdote and observation
 - Science
- Data \neq information; data \neq knowledge/evidence
- Science is defined by its processes which are designed to reduce bias and enhance objectivity by minimising values.
- Important value judgments lie within science especially over what question and how to study it, and especially over the *sufficiency and quality of evidence* on which to draw conclusions. (“inferential risk”)
- But the use of science by society is values rich, and in general societal values are very diverse.

Policy making

- Often has **mixed and not always clear objectives**.
- It is impacted on by acute externalities, as well as by political and societal values.
- It is about making **choices**:
 - between different options,
 - which affect different stakeholders in different ways,
 - with different consequences,
 - many of which are not certain.
- Virtually all policy making carries **complexity, risk and uncertainty**.
- But perceptions of complexity, risk, cost and benefit vary between stakeholders.
- The political perspectives of stakeholder effects, interests, electoral positioning and electoral risk are always present.



The understanding of risk

- Actuarial/probabilistic
- Perceptual
 - The role of cognitive biases
 - Availability
 - Representational
 - Confirmational
 - Anchoring
 - Asymmetry
 - Perception of gains and losses, benefits and burdens
- Reputational and political

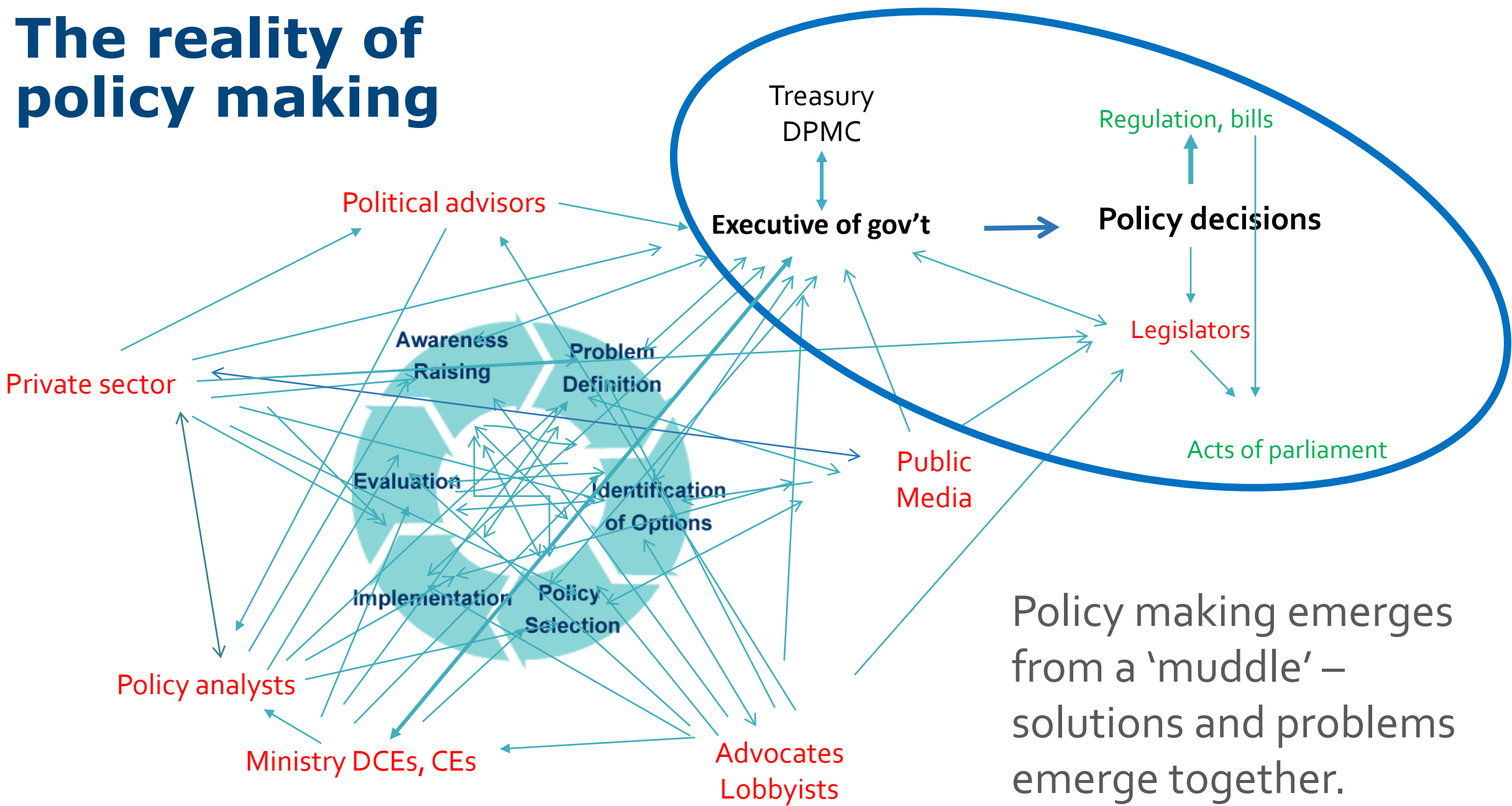


The mythological metaphor of policy making



The cycle implies a rationality that is almost never there.

The reality of policy making

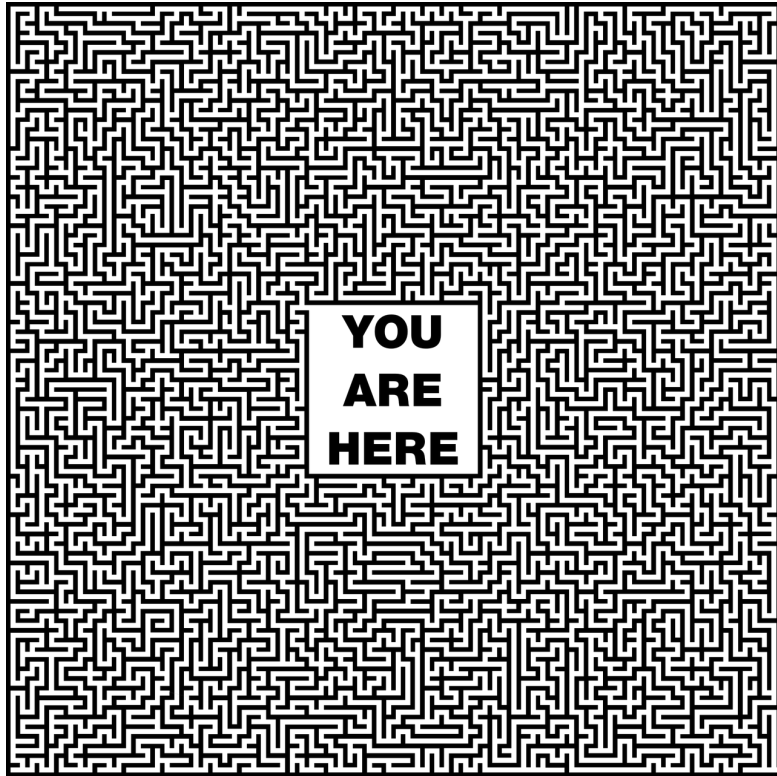


Questions that the policy and political audience will always have

- Why do we have to do something now?
- Why is it a priority?
- Have we got the option that meets our broader needs?
 - Who will it benefit, who won't it benefit?
 - Does it benefit priority stakeholders?
 - What are the risks, and to whom?
 - What is the political risk of doing or not doing?
- What will it cost?



The challenge of science at the policy-societal nexus



- Too much science
- The changed nature of science
- The challenge of values
- The post-normal nature of much science
- Misinformation
- Mr Google
- Different perceptions of risk
- Different perceptions of expertise
- The behaviour and reciprocal perceptions of scientists and policy makers
- The utilitarian positioning of science

Scientists and policy making

Scientists:

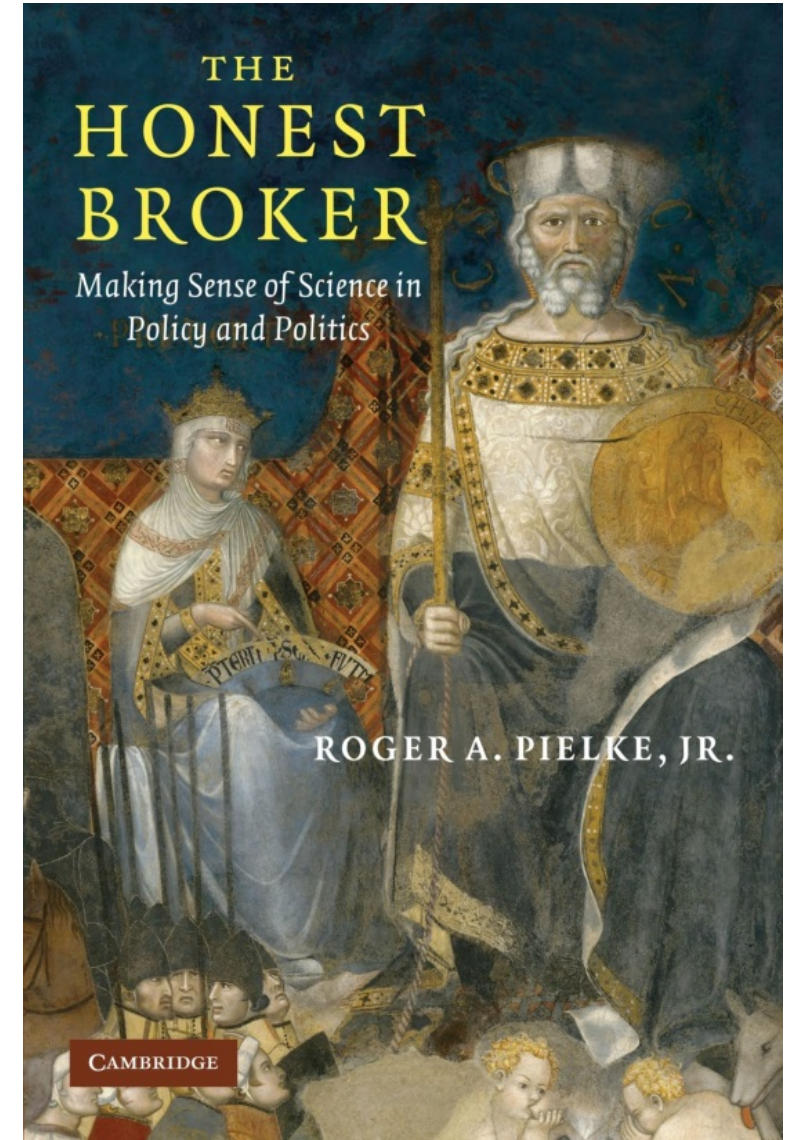
- are very good at public advocacy
- generally can define the science problem but not the policy problem
- are not as good at finding workable, scalable and meaningful solutions
- often approach the policy maker with considerable hubris
- often do not understand the complex processes of policy making
- can have difficulty taking a multidimensional/multidisciplinary perspective
- often fail to recognise that more science will not generally resolve differing world views

Policy makers

- Have limited bandwidth and often limited manoeuvrability
- Are constrained by electoral, fiscal and other considerations
 - Concept of bounded rationality
- Lurch to problems, often driven by externalities
 - The policy cycle is generally very short and getting shorter
 - Much relevant science is incomplete and ambiguous
- May see scientists as good at problem definition (in scientific terms) but not at pragmatic (in the policy/political sense) solution finding
- Cannot be expected to be scientific referees
- See evidence as one of a number of inputs
 - In what sense is it privileged and how is that privilege maintained? The role of the broker?

Advocacy versus brokerage

- **The Issue Advocate** is the scientist who collects and presents data with a view to servicing a cause
- **The Honest Broker** tries to identify and overcome biases to present what is known, what is not known, what is the scientific consensus, what are the implications for policy and action and the tradeoffs of various options



Cambridge University Press, 2009

Different roles

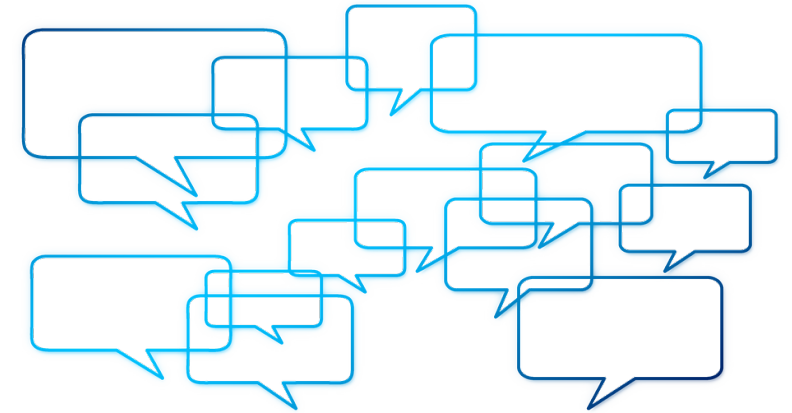
	Knowledge generators	Knowledge synthesizers	Knowledge brokers	Policy Evaluation
Individual academics	+++	++		+
Academic societies/professional bodies		+		
Government employed practicing scientists	+++	+		++
Scientist within regulatory agency	+	++	++	
Independent think tanks		+++	+	+
What works units etc		+++	+	++
National academies		+++	++	
Government advisory boards/science councils		++	++	
Science advisors to executive of government		++	++++	
Science advice to legislators		+	++	±

Purposes of evidence in informing policy

- To provide an explanation of complex (open) systems so options can be explored
- To define options for action to achieve a particular outcome(s) and explore implications of each option
- To address a particular implementation issue or scientific question
- Emergencies/crises
- To define and plan an intervention
- To evaluate the impact and effect of the intervention

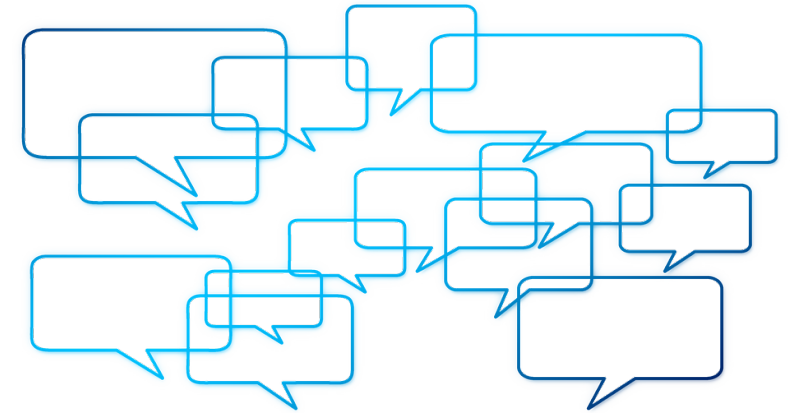
The skills of evidence synthesis

- Framing the question
- Does it require a transdisciplinary approach?
- What level of detail is required
- Understanding uncertainty
- Systematic and unbiased
- Transparency
- Presenting it in useful form
- Peer review



The skills of brokerage

- Ensure alignment of question and answer
- Policy facing, public facing
- Synthesize what we know
- Acknowledge what we don't know
- Caveats on above
- Presentation of options
- Communication of uncertainties
- Constraints on conclusions, what is the inferential gap
- Tradeoffs and non-scientific implications
- Recognition of other epistemologies, alternate narratives
- Present in an appropriate manner and ensure comprehension



Some final tips for reaching into policy

Modified from Oliver & Cairney 2019, Cairney & Kwiatkowski 2017, Gluckman 2014, among others

- Understand the context and challenges of policy making
- Understand policy processes
- Understand the role of cognitive biases on both sides
- Humility and trust
- Do not overload them with information
- Decide if you want to be an issue advocate or honest broker
- Find the right time to act
- Find pragmatically acceptable solutions
- Build relationships (and ground rules) with policymakers; understand their perspective





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**International
Science Council**

- An integral part of the ISC for **science-policy** and **science-diplomacy**
- Over 5,000 members from over 100 countries
- Secretariat based in Auckland (Koi Tū)
- Regional chapters: EU, NA, LATAM, Asia, Africa
- Science international relations and diplomacy division (SPIDER)
- Knowledge centre
- Forum for sharing, coordinating, networking
- Capacity building activities
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- Reports and research

Ngā Mihi

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