



Perspectives on science advising: what are the skills needed?

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The science – policy nexus

- » Presumption: That governments are more likely to make better decisions when they use well-developed evidence wisely
- » Virtually every challenge a government faces has a scientific dimension
- » But science alone does not make policy; many values and political considerations
- » Is robust science available, will it be used, misused, manipulated or ignored?
 - The challenge of populist politics and media
 - The vilification of elites and experts
 - But science and scientists also have played a role in creating the problem
- » The need for an effective and trustworthy science advisory ecosystem

Policy making informed by scientific evidence

~~Evidence based policy making~~



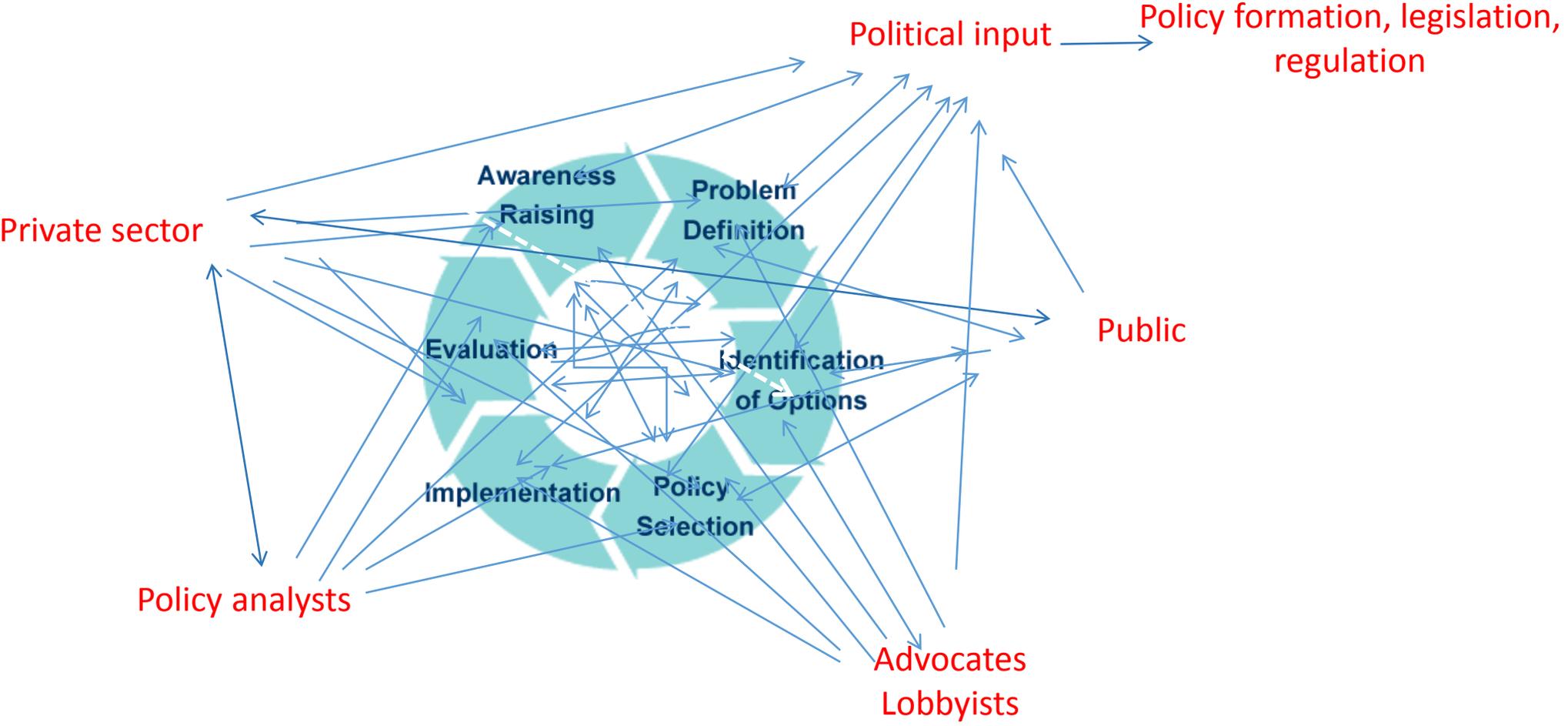
What is evidence

- Politicians and policy makers have many sources of evidence
 - Tradition
 - Prior belief
 - Anecdote and observation
 - Science
- Scientific evidence is argument supported by information produced according to a set of formal processes
- Scientific processes aim to obtain relatively objective understandings of the natural and built world. Science is defined by its processes which are designed to reduce bias and enhance objectivity.
 - But important value judgments lie within science especially over what question and how to study it. But the most important in the context of policy is the sufficiency and quality of evidence.

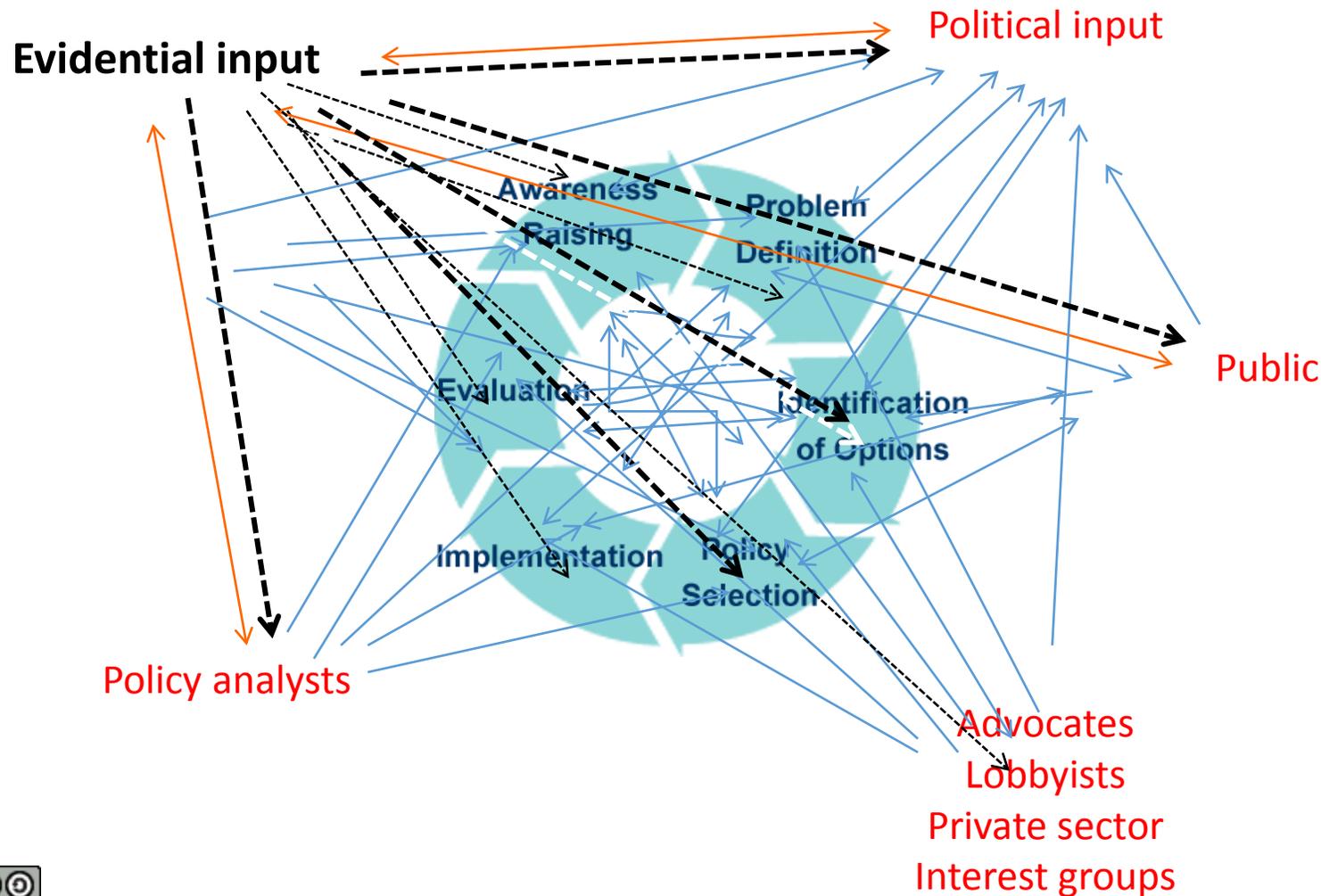
- The policy process is rarely as described in textbooks



Policy making is messy



So what is the value of science advice in the 'post-trust context'?



More important than ever

But it matters how it is done

It needs sensitivity to the complex dynamics

It needs to work with this complex entanglement of formal and informal actors

Scientists and policy making

- Scientists are
 - Very good at problem definition
 - Less so at finding workable, scalable and meaningful solutions
 - They often approach the policy maker with considerable hubris.
 - They often fail to consider the multiple domains that go into policy formation
- But they have a critical role in the policy process through the science advisory ecosystem

Policy makers

- » Have limited bandwidth and often limited manouvvrability
- » They lurch to problems
- » The policy cycle is generally very short and getting shorter
- » Most relevant science incomplete and much is ambiguous
- » Policy makers cannot be expected to be scientific referees
 - » The need for translation and brokerage
- » Policy makers see evidence is one of a number of inputs
 - » In what sense is science privileged and how is that privilege maintained? The role of the broker.

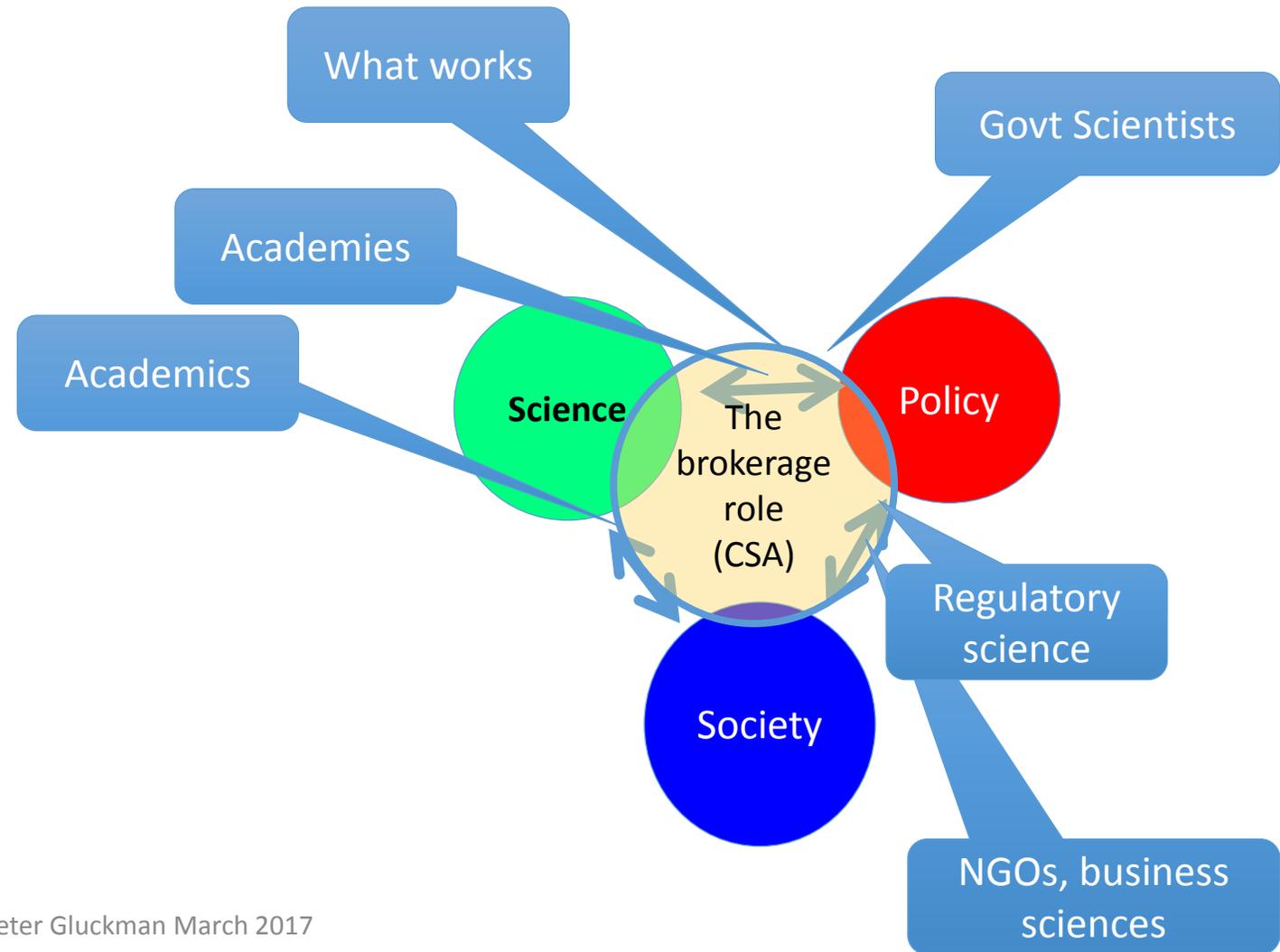
The challenge of science at the policy-societal nexus

- Too much science
- The changed nature of science
- The challenge of values within and beyond science
- The post-normal nature of much science
- Different perceptions of risk
- Different perceptions of expertise
- The behavior and reciprocal perceptions of scientists and policy makers
- The utilitarian positioning of science

Enhancing the uptake of scientifically developed knowledge into public policy

The four audiences

- Politician
- Policy maker
- Media and public
- The science community



Different roles in a science advisory ecosystem

	Knowledge generators	Knowledge synthesizers	Knowledge brokers
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		+	+++

The audience for science advice

	Public	Unsolicited Policy input	Requested policy advice	Politician
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	++	++	+++	+++

Types of advice

	Informal but external	Deliberative (unsolicited)	Deliberative (requested)	Informal and internal
Individual academics	++			
Academic societies/professional bodies		++		
Government employed practicing scientists			+	
Scientists within regulatory agency			++	
Independent think tanks	+	++	+	
What works units etc		++	++	
National academies		+++	++	
Government advisory boards/science councils			+	+
Science advisors			++ (conduit)	+++

The nature of advice

	Policy for science	Evidence for policy: options (strategic)	Evidence for policy: Implementation (operational and tactical)	Evidence for policy: Evaluation (strategic and tactical)	Horizon scanning	Crises
Individual academics	+	±	±	±	±	
Academic societies/profess'l bodies	+++	+	+	±	±	
Gov't employed scientists		+	++	+	+	+
Scientists within regulatory agencies		+	++	++		
Independent think tanks		++	±	±	+	
What works units etc			++	±		
National academies	+++	+			+	
Gov' t advisory bds/science councils	++	+	+		+	
Science advisors	+	++++	++	++	++	+++

Different perceptions in a science advisory ecosystem

	Advocate	Broker
Individual academics	+++	
Academic societies/professional bodies	+++	+
Government employed practicing scientists		+
Scientists within regulatory agency		+++
Independent think tanks	+	++
What works units etc	++	++
National academies	+++	++
Government advisory boards/science councils	+	++
Science advisors		+++

The skillset for effective external input

- Understanding of the complexities of science
- Get beyond single disciplines (natural and social sciences)
- Understanding the policy 'cycle'
- Being timely
- Understanding the limits of advocacy versus brokerage

- Understanding brokerage
 - *What is known, what is the expert consensus*
 - *What is not known*
 - *Other caveats*
 - *The inferential gap, risk management*
 - *How it relates to other considerations, alertness to social implications*
 - *Options and tradeoffs*

- Remembering there are multiple audiences
- Avoiding hubris
- Maintaining integrity and trust

The skillset for effective internal brokerage

- Understanding of the complexities of science
- Get beyond single disciplines (natural and social sciences)

- Understanding the policy 'cycle'
- Being linked to the key players in the policy 'cycle'

- Understanding brokerage

- Excellent diplomatic skills
- Good communication skills to the four audiences,
- Understanding of the post-trust environment
- Avoiding hubris
- Maintaining integrity and trust with the four audiences

Integrity, trust, EQ and diplomatic skills, humility, breadth of knowledge, access, communication skills, understanding of the policy community and the science community, standing.

Academies and science advice

- A source of deliberative advice (solicited or unsolicited)
- Many academy reports have little impact on policy – why?
 - Not timely, not requested, not needed
 - Do not answering policy relevant questions directly
 - Often not well equipped to deal with post-normal issues
 - Do not always appreciate the policy space and assume a linear model from evidence to policy
 - Do not understand the nature of brokerage
 - Language not accessible
 - Focused on showing academic standing
- Many academies need to rebuild and represent themselves to have greater impact (*and deal with issues of elitism, post-expert, post-trust, post-truth, post-fact etc*)

INGSA

INGSA founded in 2014 under the aegis of ICSU
Memorandum of understanding with UNESCO
Concerned with all dimensions of science advice

Networking

Research

Forum, resources, networking

Capacity building workshops –academies (Auckland April 2017), small nations (Apia April 2017)

Copenhagen April 2017, Johore June 2017, Nigeria Nov 2017) institutions, demand side

Thematic workshops (eg foreign ministries, environment)

Partnerships (eg with JRC)

Principles of science advice (WSF 2017)

Membership : academics, practitioners, policy makers (>1000 members, 75 countries)

African chapter, Arab chapter under development, foreign ministry chapter under development

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