



UNIVERSITY OF  
PLYMOUTH  
Sustainable Earth Institute

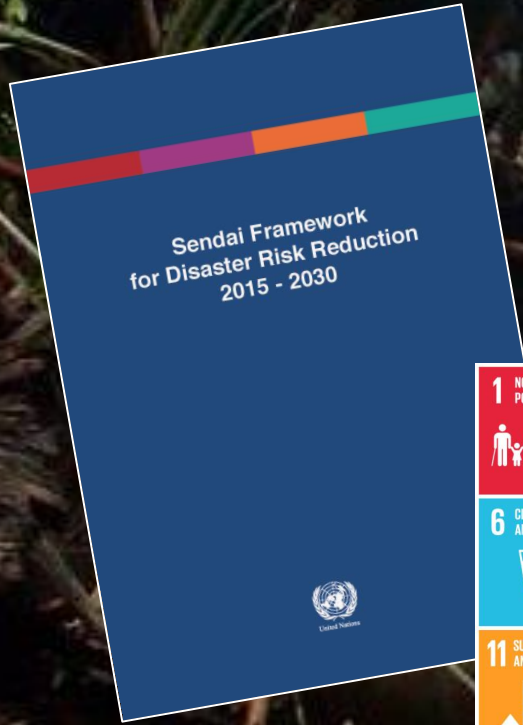


# Selling Planet Earth



re-purposing science communication for  
sustainable human progress





2015: a new science-society contract ?

*'the problems of living'*





Project 685 Geology for Sustainable Development





# NERC

## SCIENCE OF THE ENVIRONMENT

By capturing and communicating the impact of NERC science to government and other key stakeholders, NERC seeks to demonstrate the importance of its investment and thereby maximise government support for this crucial science area.







## The Bodmer Report

THE  
ROYAL  
SOCIETY

‘...a better public understanding of science can be a major element in promoting national prosperity, in raising the quality of public and private decision-making and in enriching the life of the individual...Improving the public understanding of science is an investment in the future, not a luxury to be indulged in if and when resources allow.’

The Royal Society (1985)



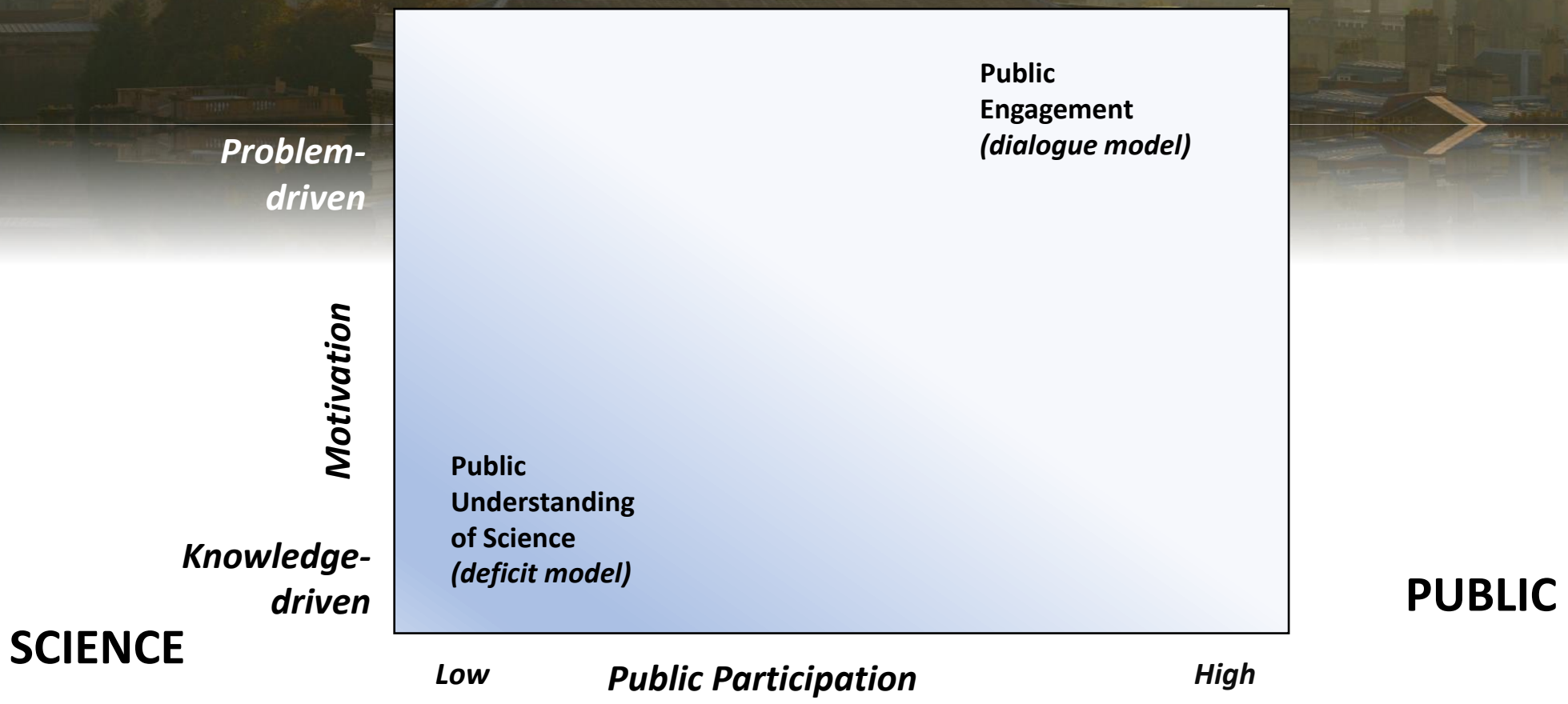
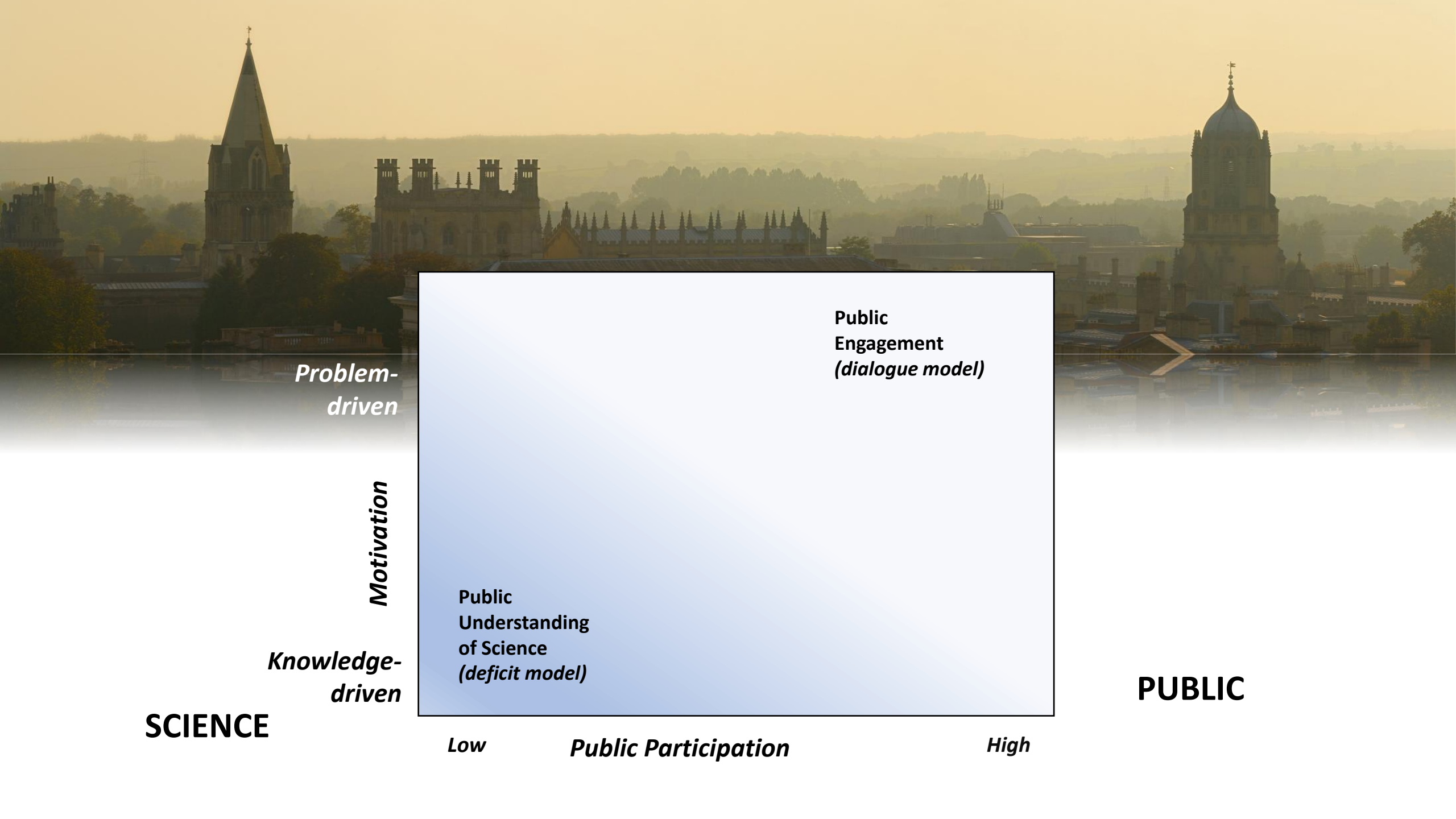
Looking at the list below, what do you think is the main reason for scientists and engineers generally to engage with the non-specialist public? (Unweighted Base 1473, Weighted Base 1478)

10%	To be accountable for the use of public funds
11%	To contribute to public debates about science and scientific issues
5%	To contribute to discussions about the social and ethical issues science can raise
8%	To generate / stimulate additional funds for universities and colleges
4%	To recruit students to your subject
35%	To ensure the public is better informed about science and technology
11%	To raise awareness about your subject
12%	To raise awareness of science generally
*	There are no reasons to engage with this group

science  
communication

excellence in science









*Problem-driven*

*Motivation*

*Knowledge-driven*

**SCIENCE**



**PUBLIC  
PUBLIC**

**Sense  
and  
Respond**

**Make  
and  
Sell**

*Low*

*Public Participation*

*High*



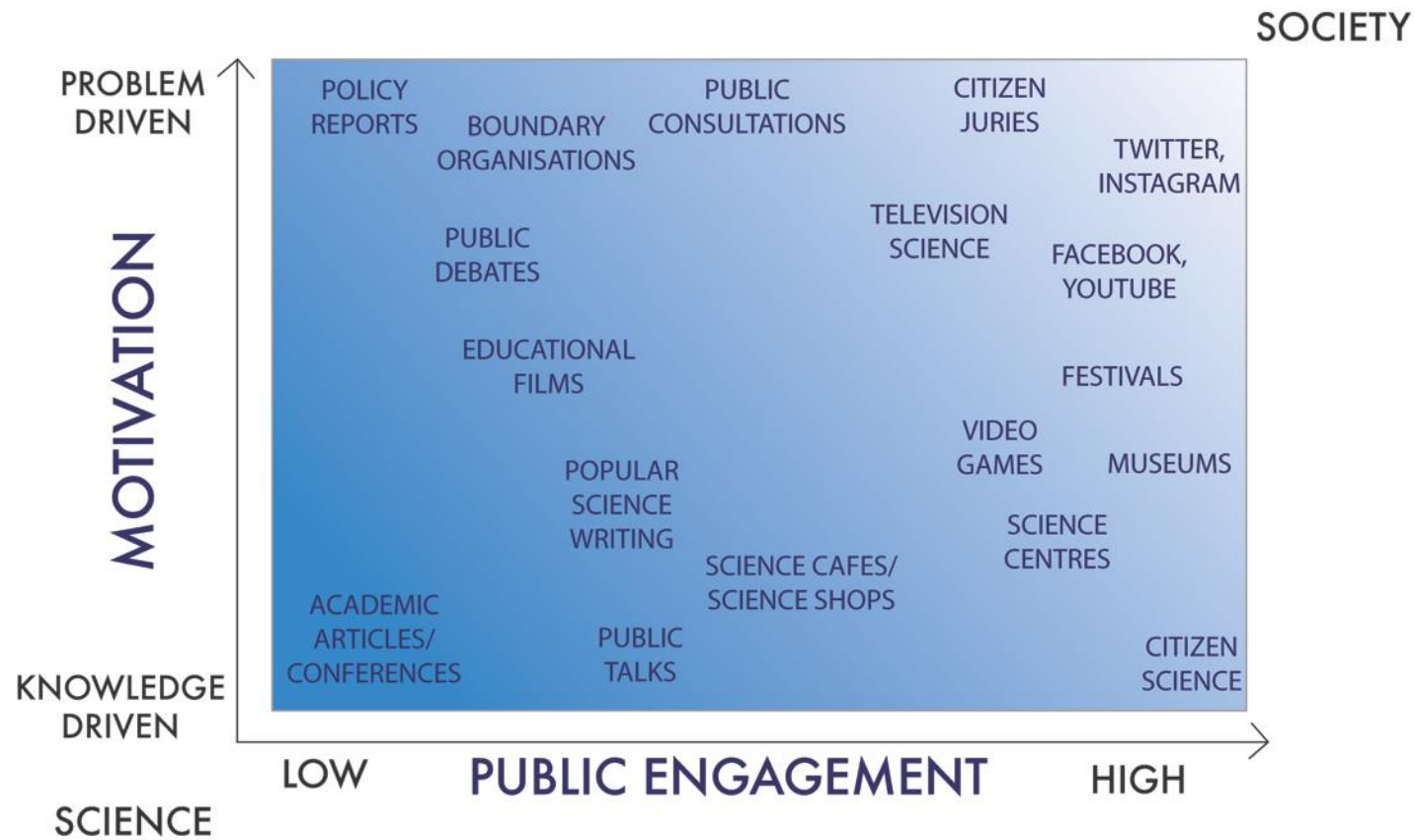
A man in a blue shirt and brown pants stands on a vast, cracked salt flat. The ground is covered in a complex pattern of white, polygonal salt crusts. In the background, there are low, brown mountains under a blue sky with scattered white clouds. The text "ACT 1" is overlaid on the left side of the image.

ACT 1

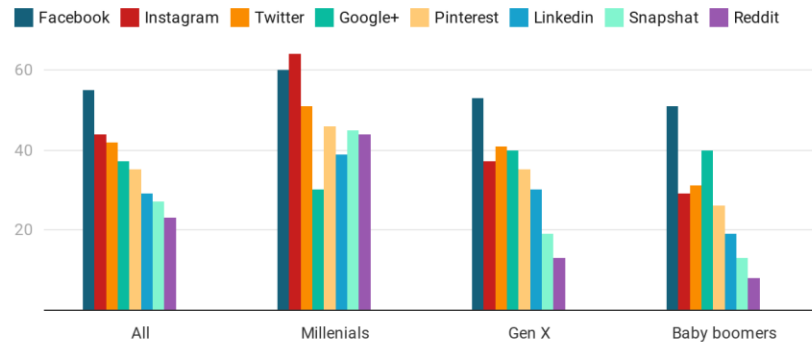
Make and Sell

understanding how to communicate





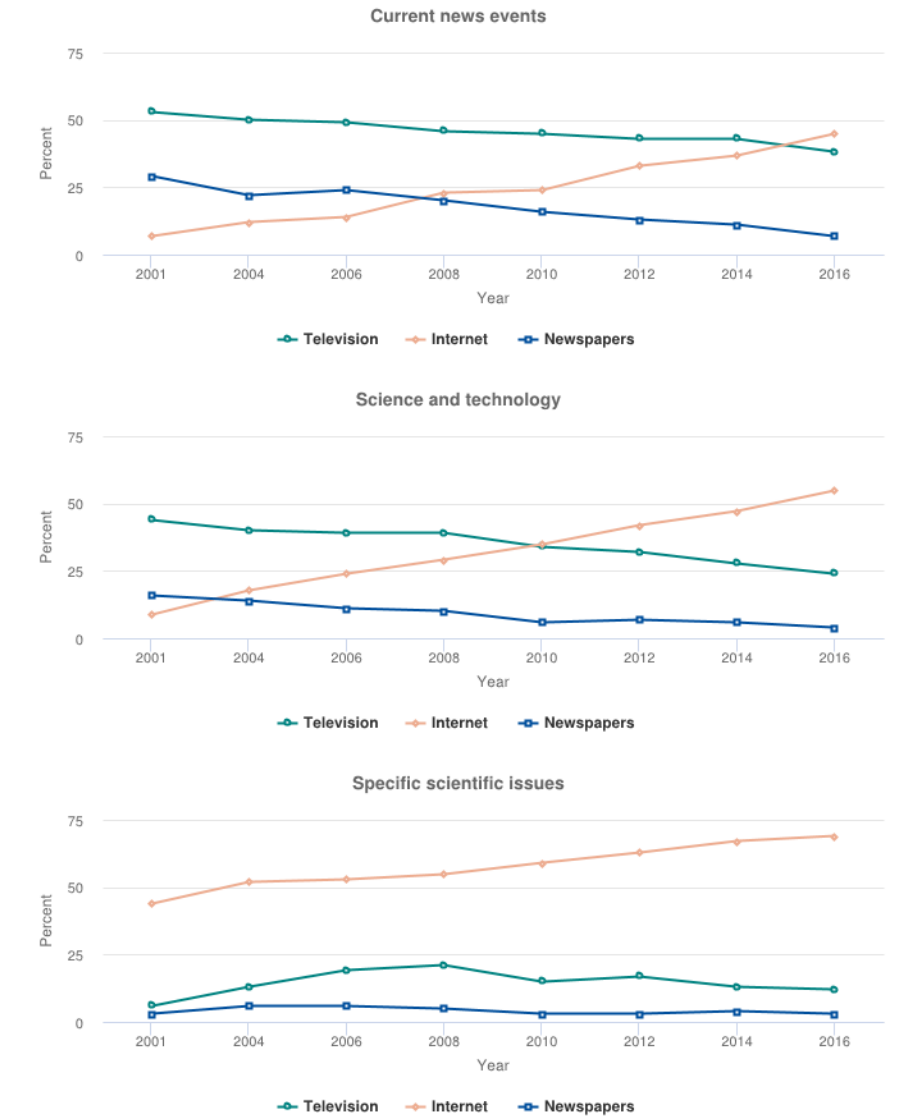
**UK top social media platforms 2019**



Source: YouGov • Created with Datawrapper

Figure 7-6

Primary source respondents used to learn about current news events, science and technology, and specific scientific issues: 2001–16



Source(s): National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16). See Appendix Table 7-3 through Appendix Table 7-5.

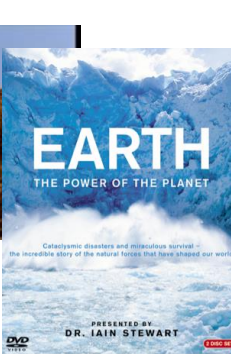




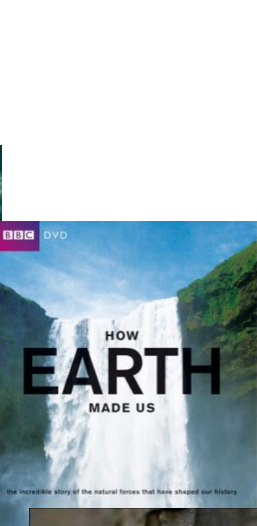
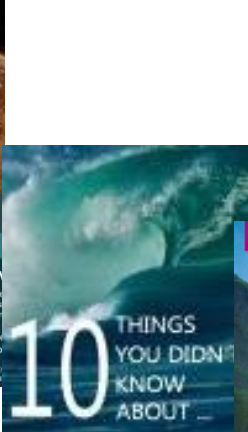
2004



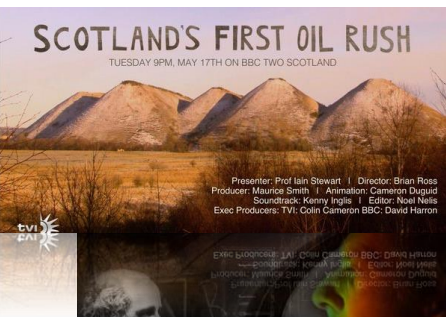
2006



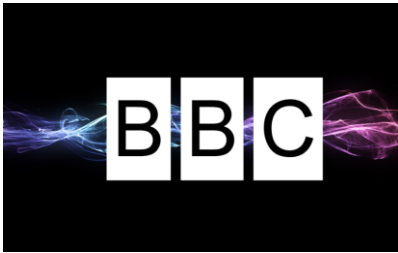
2007



2010

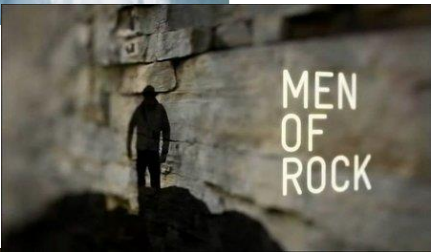


2016



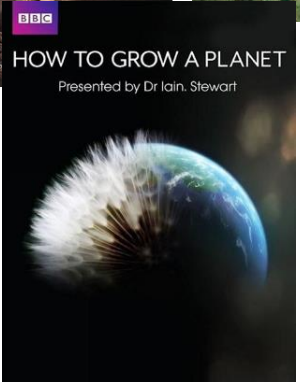
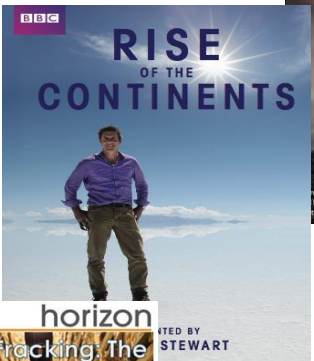
2012

2011



2014

2013





# ABOUT WONDER

“...where gaps exist among the facts of geology the space between is often filled with things ‘geo-poetical’...”

*John McPhee*

*‘Annals of the Former World’*





IT'S NOT ABOUT FACTS....



.... IT'S ABOUT STORIES

‘Try to craft messages that are not only simple but memorable, and repeat them often. Make more effective use of imagery, metaphor and narrative. In short, be a better storyteller, lead with what you know, and let your passion show.’

*(Sommerville & Hassol 2011)*

So much methane fizzes from Sherry Vargson's tap that she can light it like a stove. The contamination began, she says, after Chesapeake Energy drilled on her Pennsylvania farm. The company denies responsibility. "I keep about three windows open year-round so we don't blow up," Vargson says.

# IT'S ABOUT 'So What'

Background

Supporting  
details

Results /  
conclusions

Scientist

Bottom line

So what?

Public

Supporting  
details



A photograph of two men sitting in a lush green forest. The man in the foreground is wearing a light blue t-shirt and a dark cap, looking towards the camera. The man in the background is wearing a dark blue t-shirt and a dark cap, looking away. The forest is dense with tall trees and green foliage.

## IT'S ABOUT PEOPLE

'It is a fact often overlooked by scientists that most (other) people are mostly interested in other people, and they are mostly not interested in anything else. The fact that scientists are more interested than average in things and ideas ... marks them out as mentally very unusual.'

(Stewart & Nield, 2012)





**IT'S ABOUT YOU**



‘We need to approach the media and the public less from the point of view of educators;

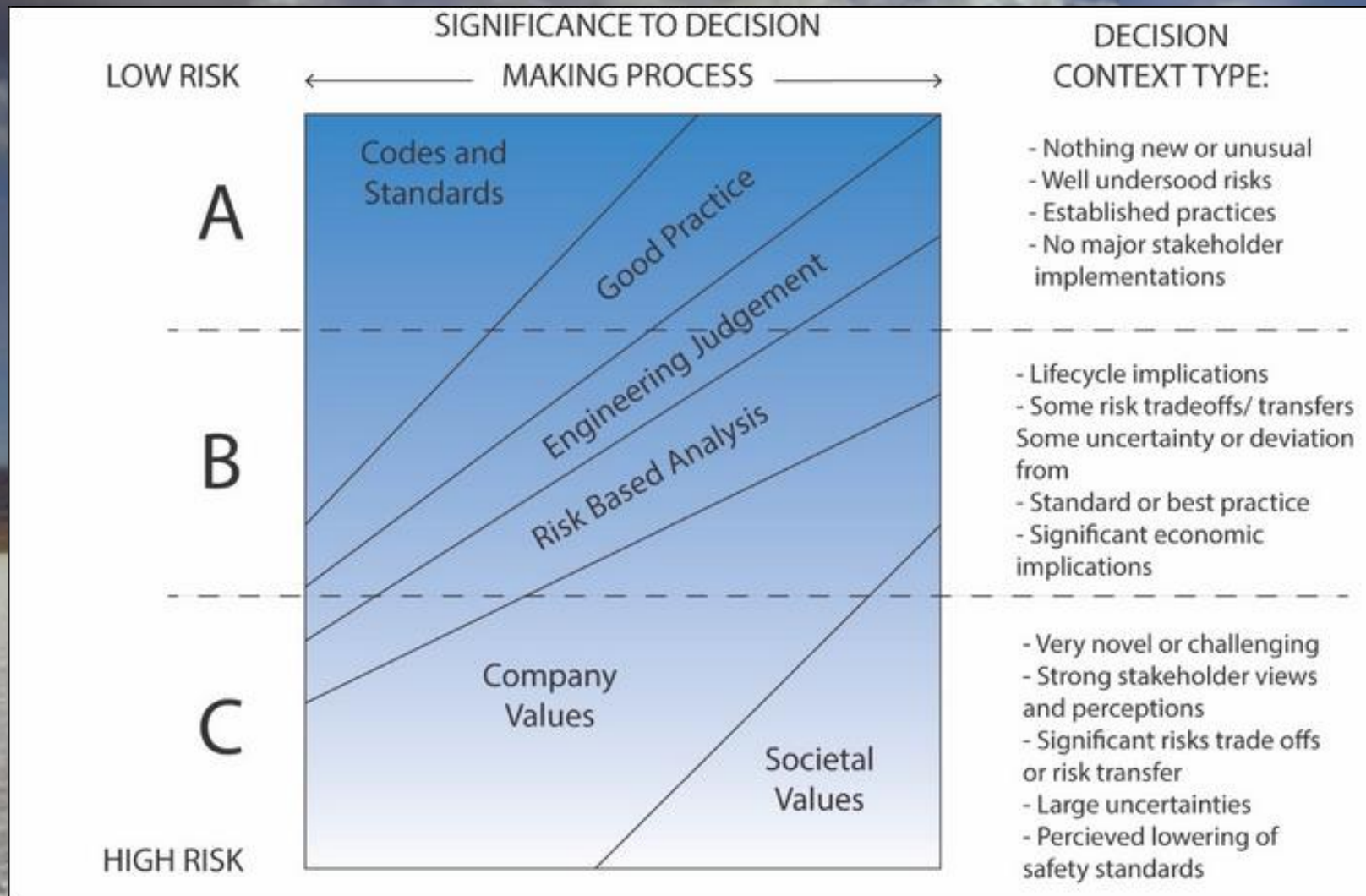
the truth is that science communication is done not primarily for the conveyancing of facts, but (like all public relations activity), for the purpose of inculcating warm feelings.

...a favourable impression of “brand geoscience”.’

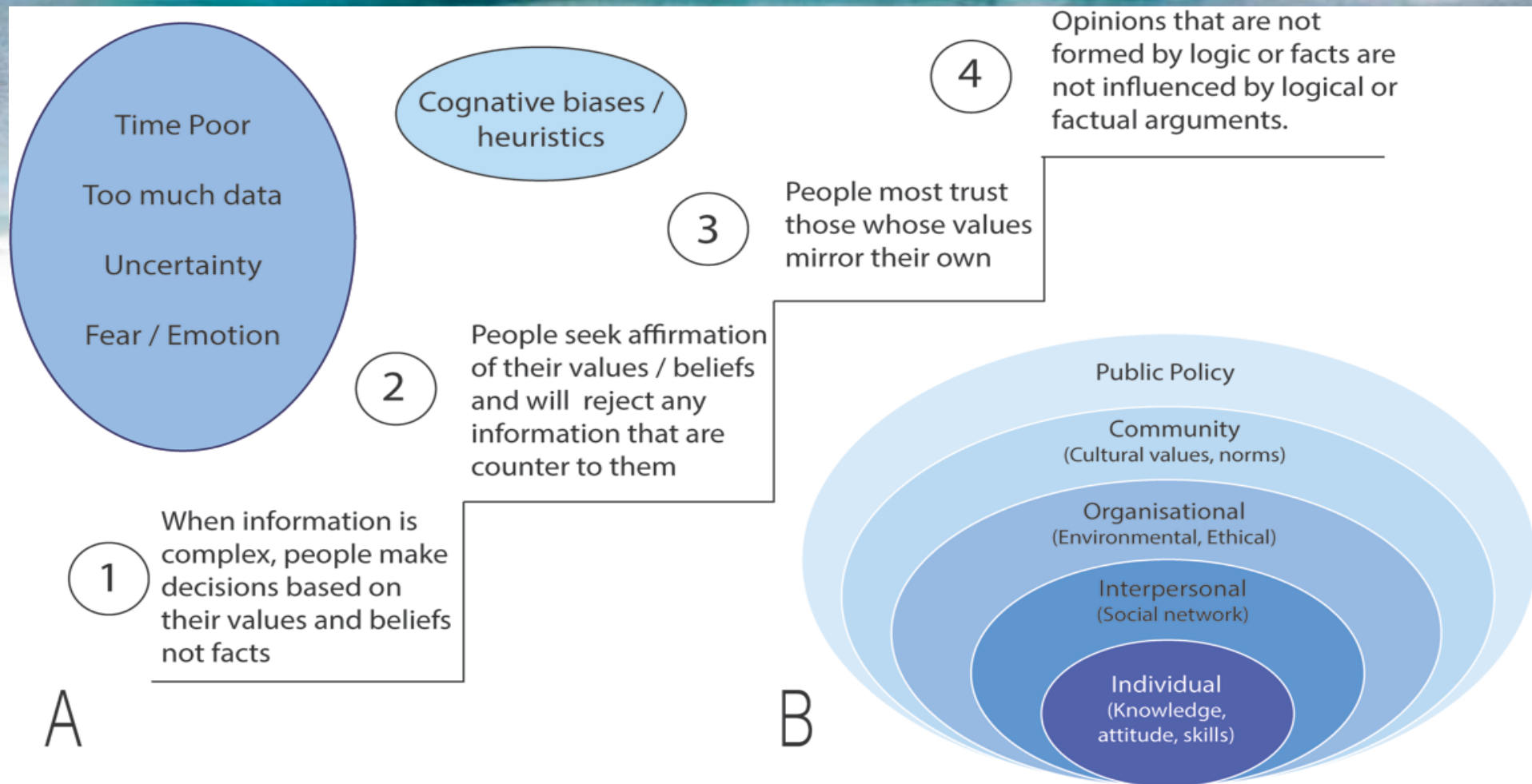
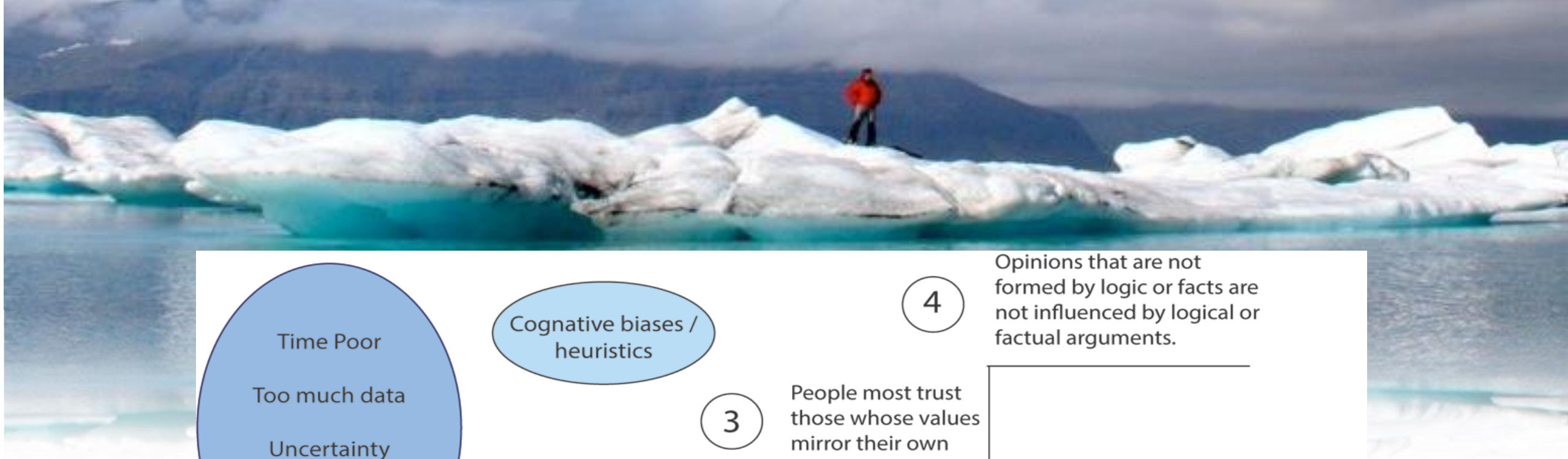
(Stewart & Nield, 2012)

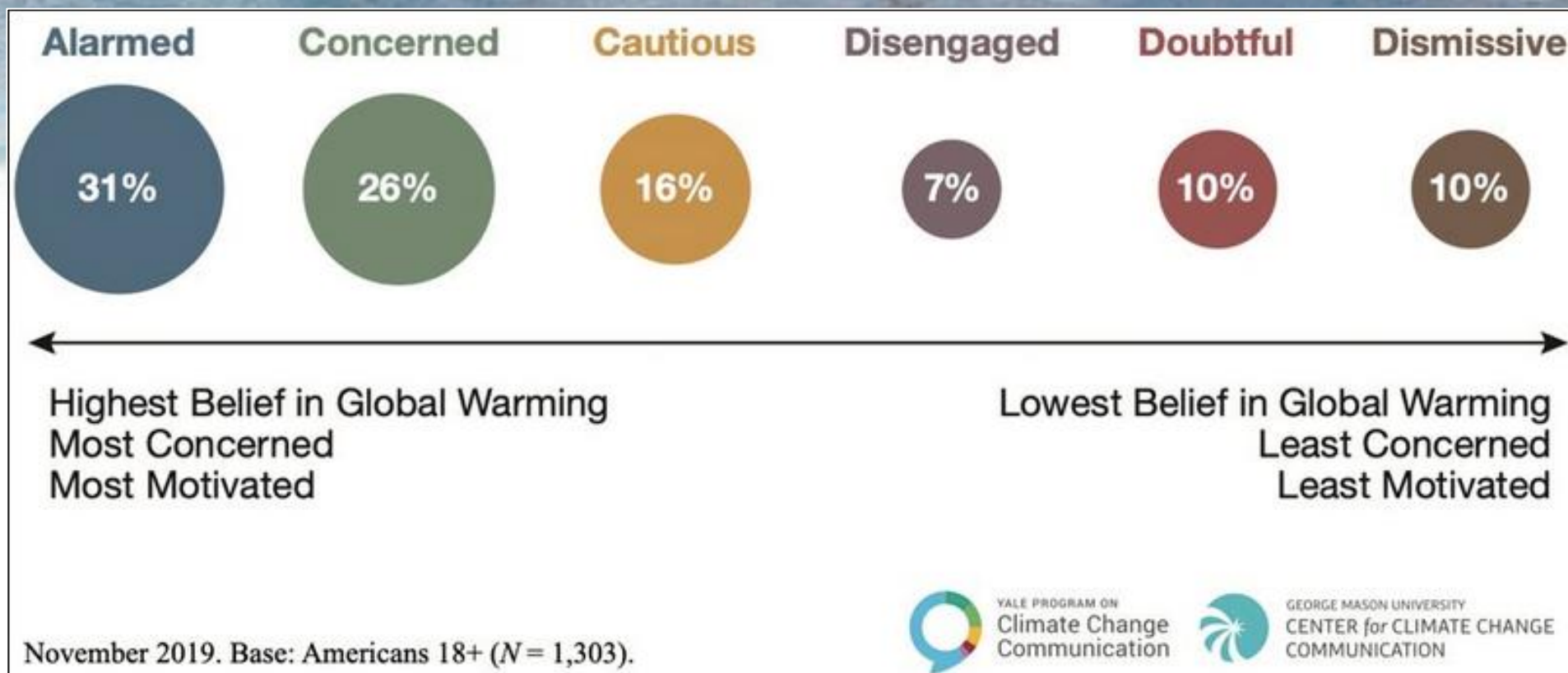






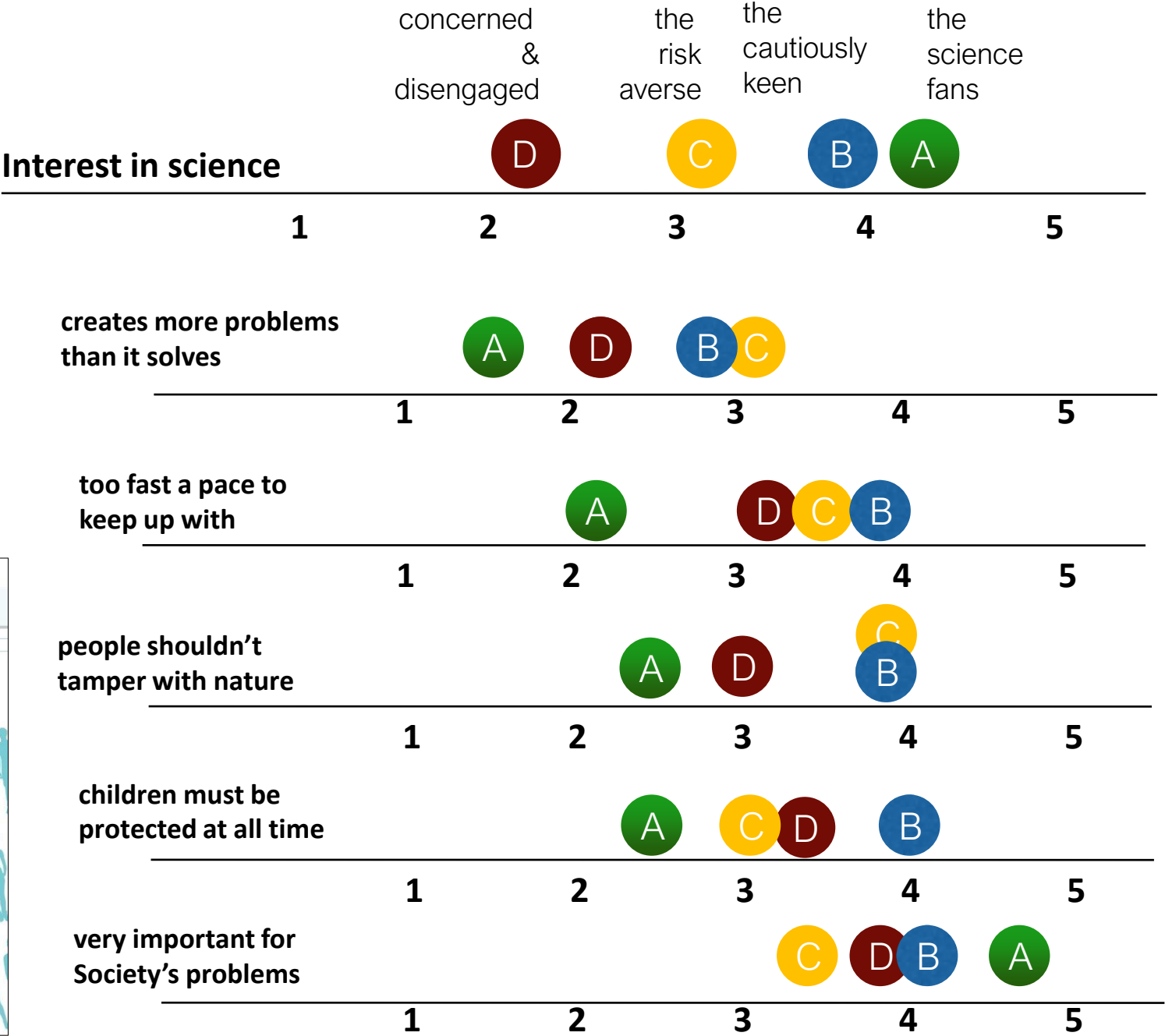
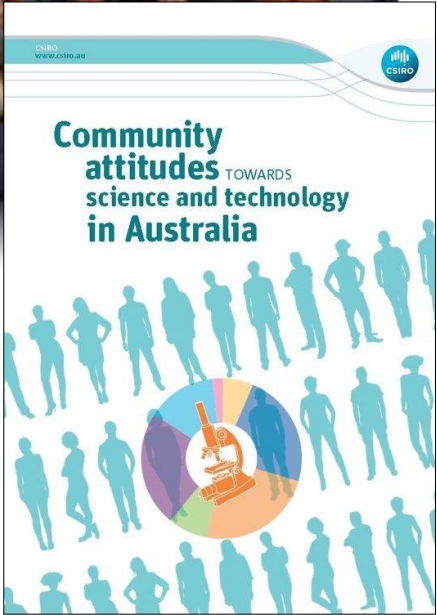




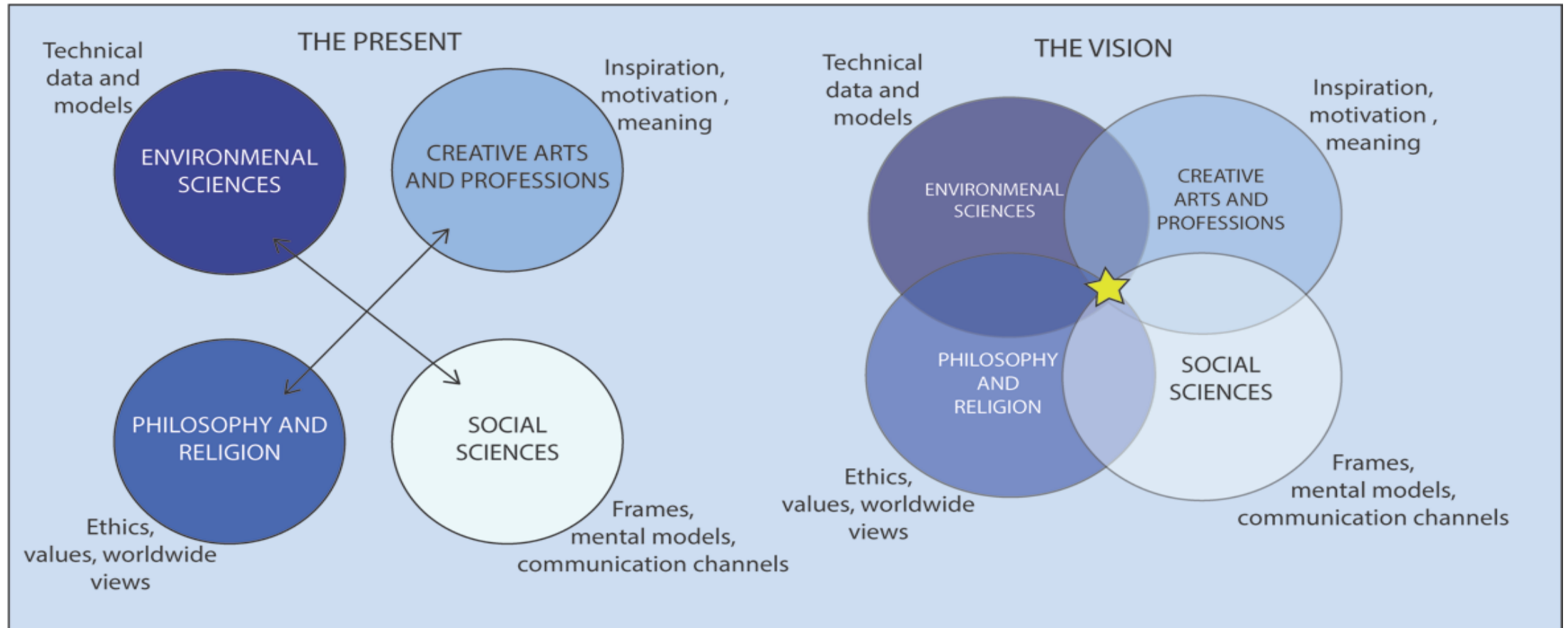




# Multiple Publics, Multiple Views



# The 'Four Cultures'







*Problem-driven*

*Motivation*

*Knowledge-driven*

**SCIENCE**



**PUBLIC  
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**Sense  
and  
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**Make  
and  
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*Low*

*Public Participation*

*High*



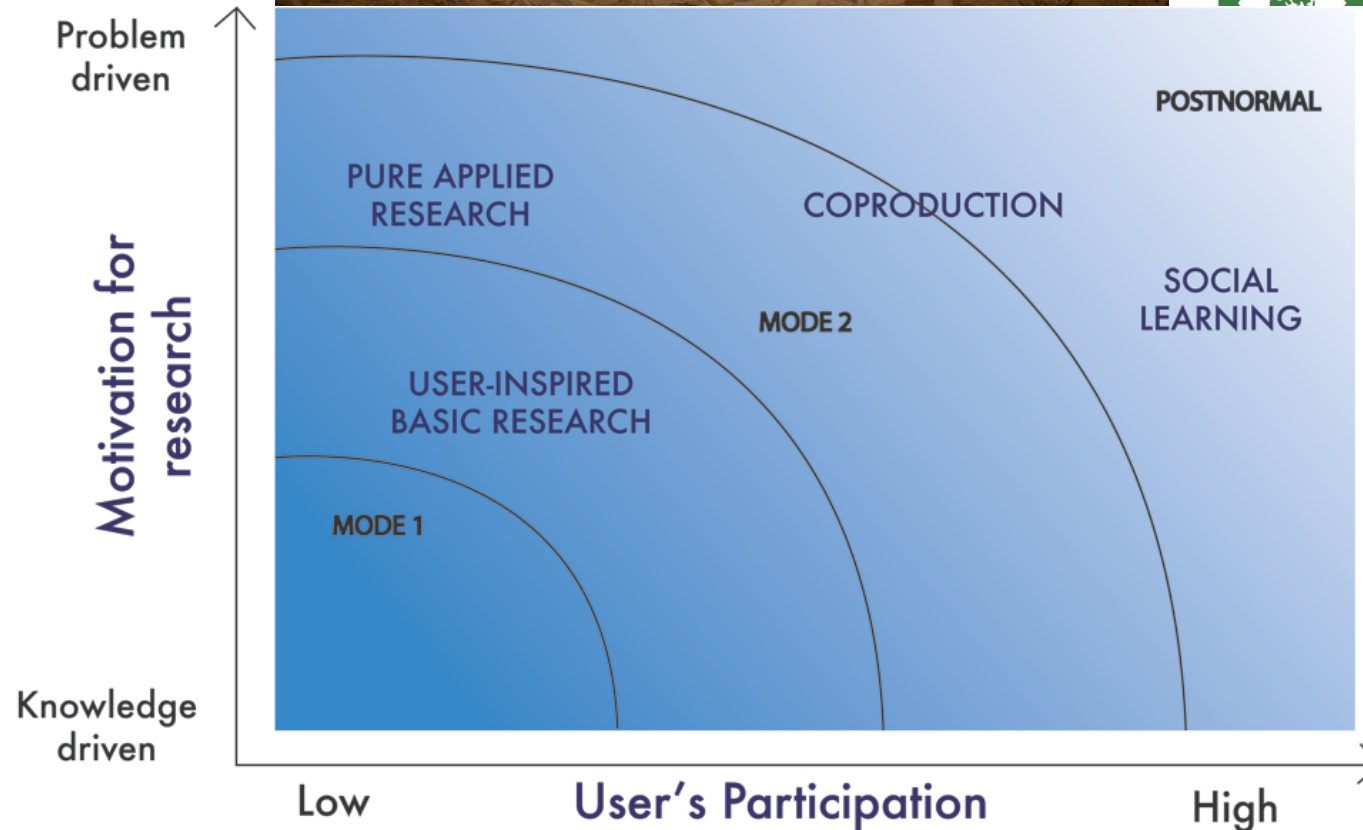
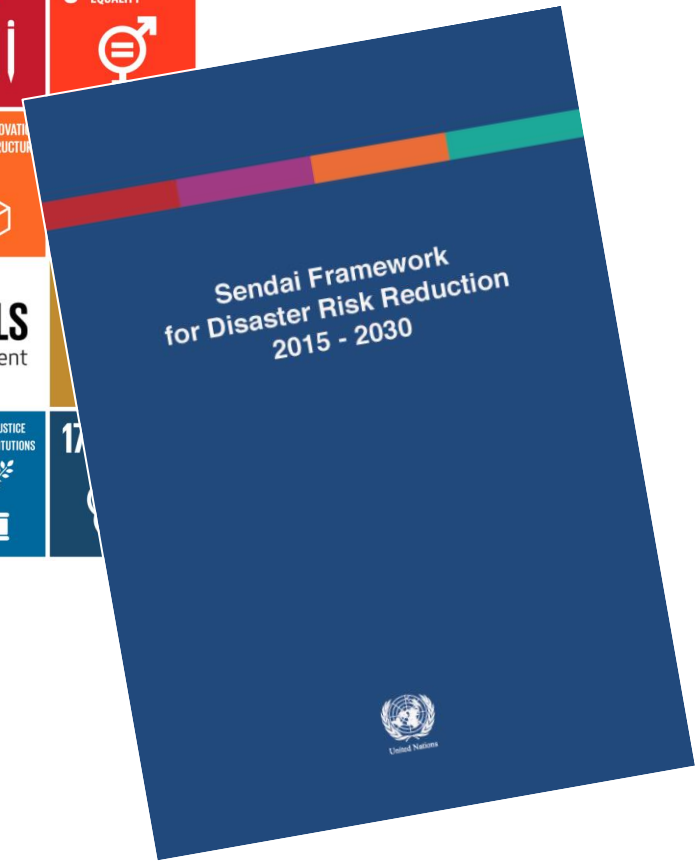
A full-page background image showing a man in a blue shirt and brown pants standing on a vast, cracked salt flat. The ground is covered in a complex, white, polygonal pattern of salt crusts. In the distance, there are low, brown mountains under a blue sky with scattered white clouds. The text is overlaid on the left side of the image.

ACT 3

Guide and Co-create

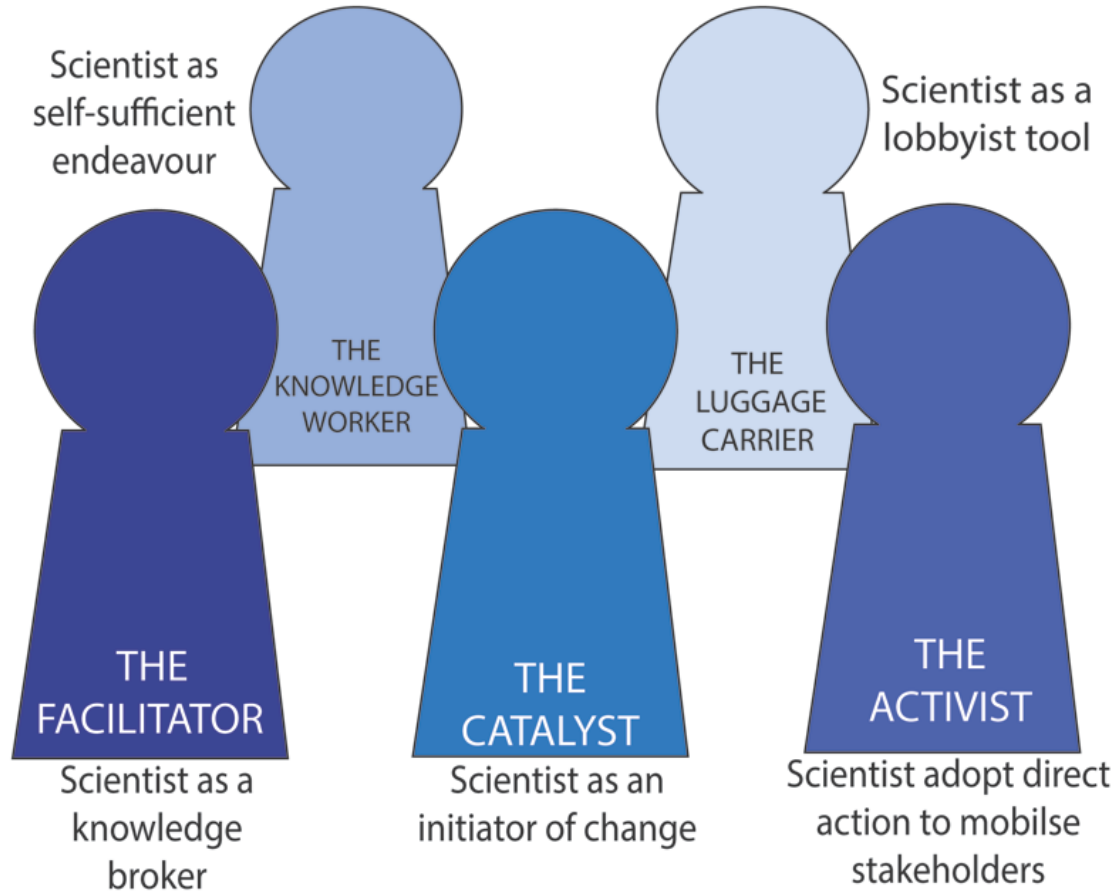
understanding your purpose





Post-normal /  
transformative science

## CONVENTIONAL (NORMAL) SCIENCE



## TRANSFORMATIVE (POST-NORMAL) SCIENCE

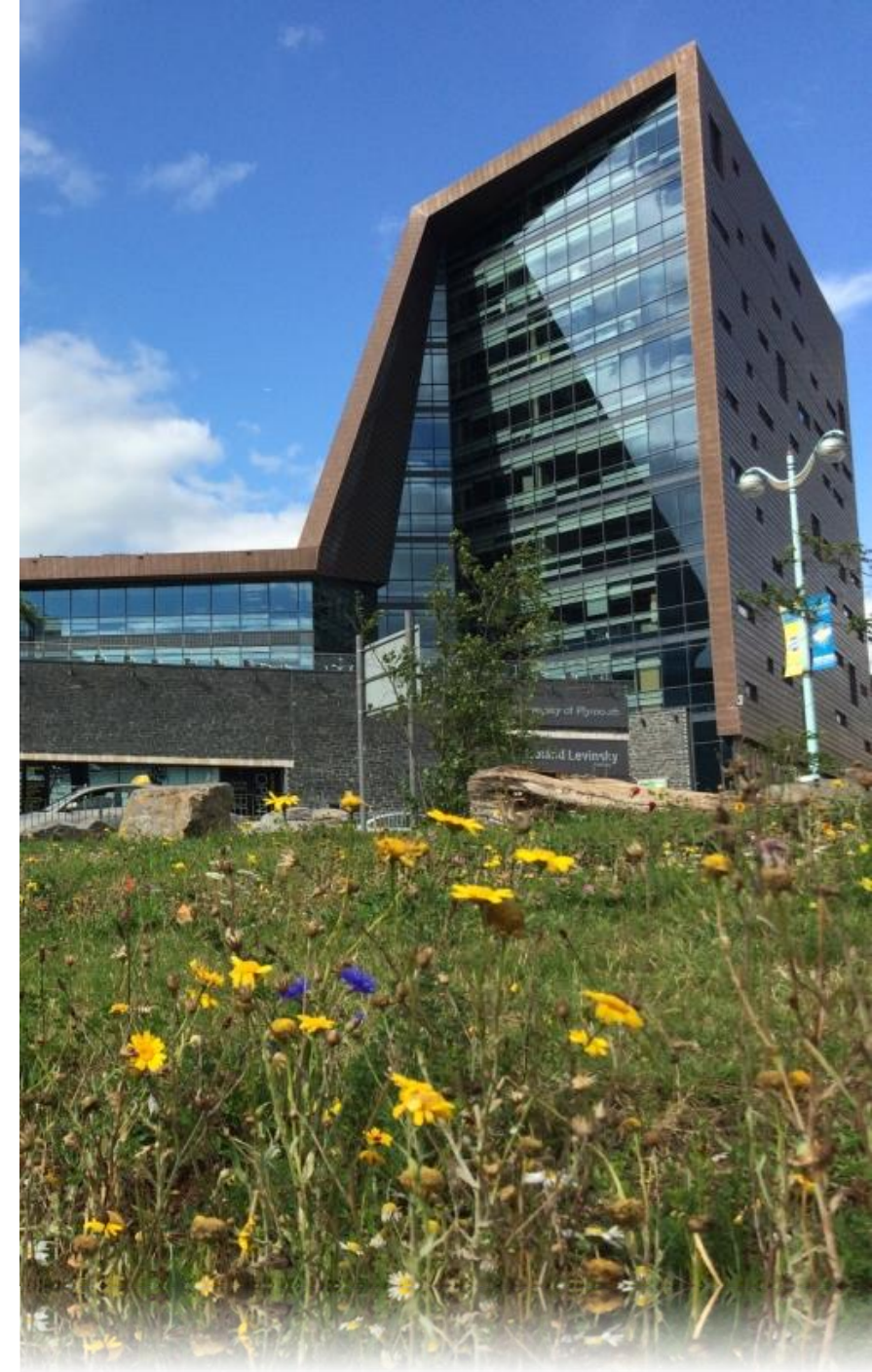
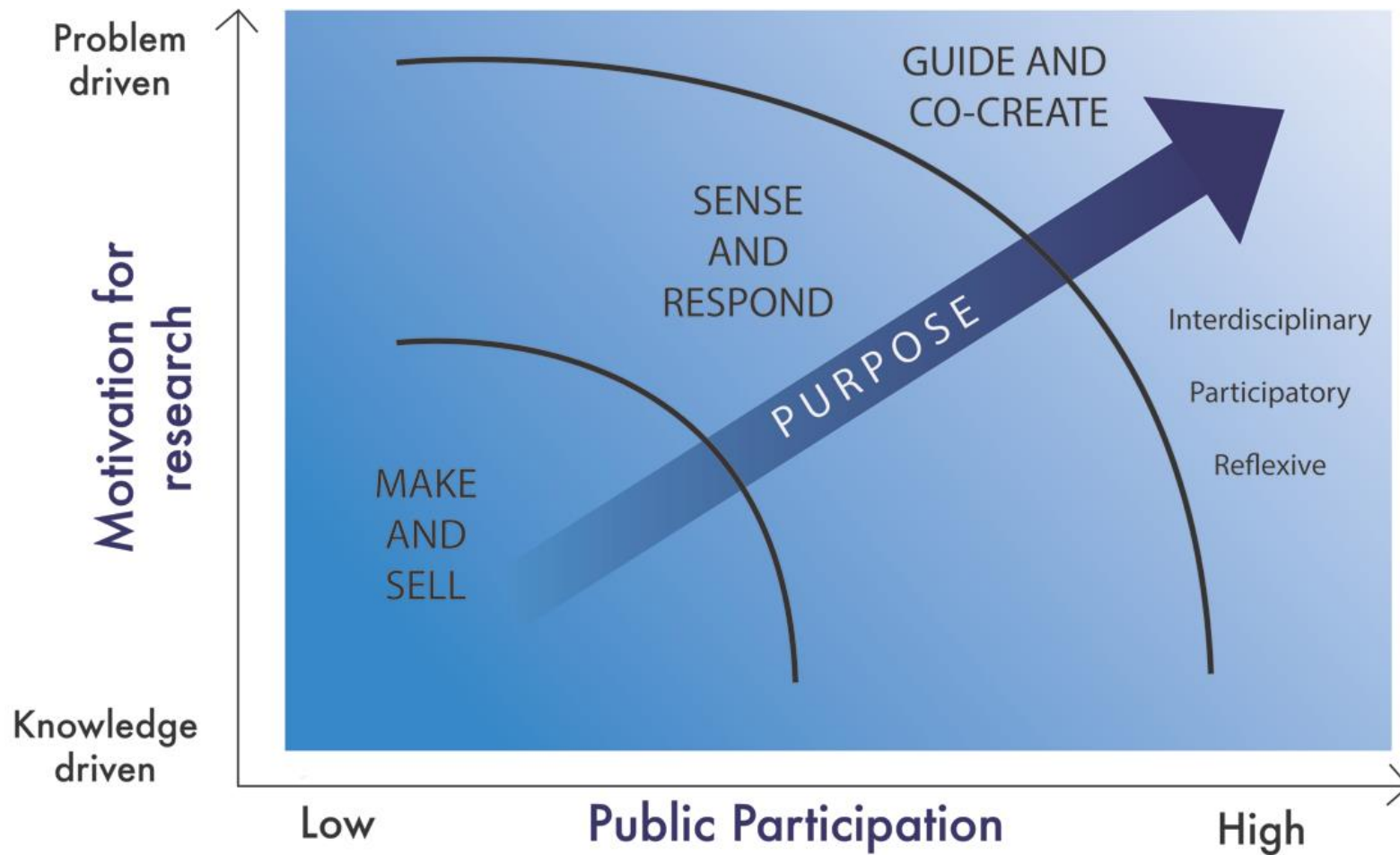
What kind of communicator?





Marketing paradigm:	Make and Sell	Sense and Respond	Guide and Co-create
THEORY OF THE FIRM	Purpose: Profit maximisation for shareholders	Purpose: Profit maximisation for shareholders	Purpose: Societal wellbeing maximisation for long term
	Value: via cost of production	Value: via consumer preference	Value: via transition-focused relationships with stakeholders
	Focus: internal	Focus: external	Focus: systemic
THEORY OF THE CONSUMER	‘Humans can be selfish but this is held in check by an inherent desire for self-respect from others. Behaviour must be understood in a social context.’	‘Humans are self-interested rational beings, or bounded-rational decision-makers who, with the right information, can maximize their welfare through decisions they make from alternatives offered in the marketplace.’	‘Relationships between all system levels shape human’s identities, values and practices. Systems of symbolic meaning create and reinforce connections between wellbeing and consumption.’
	Dominant relationship focus: Internal (sales)	Dominant relationship focus: External (response)	Dominant relationship focus: Systemic (co-creation)
TEMPORAL OUTLOOK	Narrow (firm and market system), fragmented, linear, short-term		Broad (planetary and future), integrated, systemic, long-term

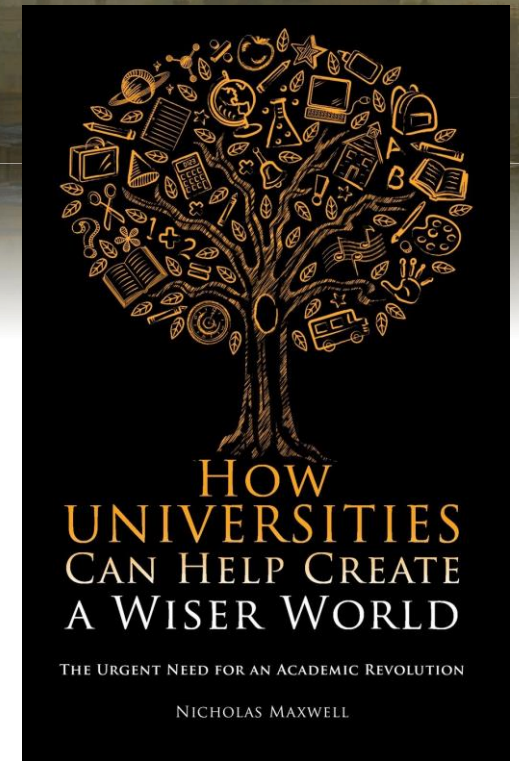
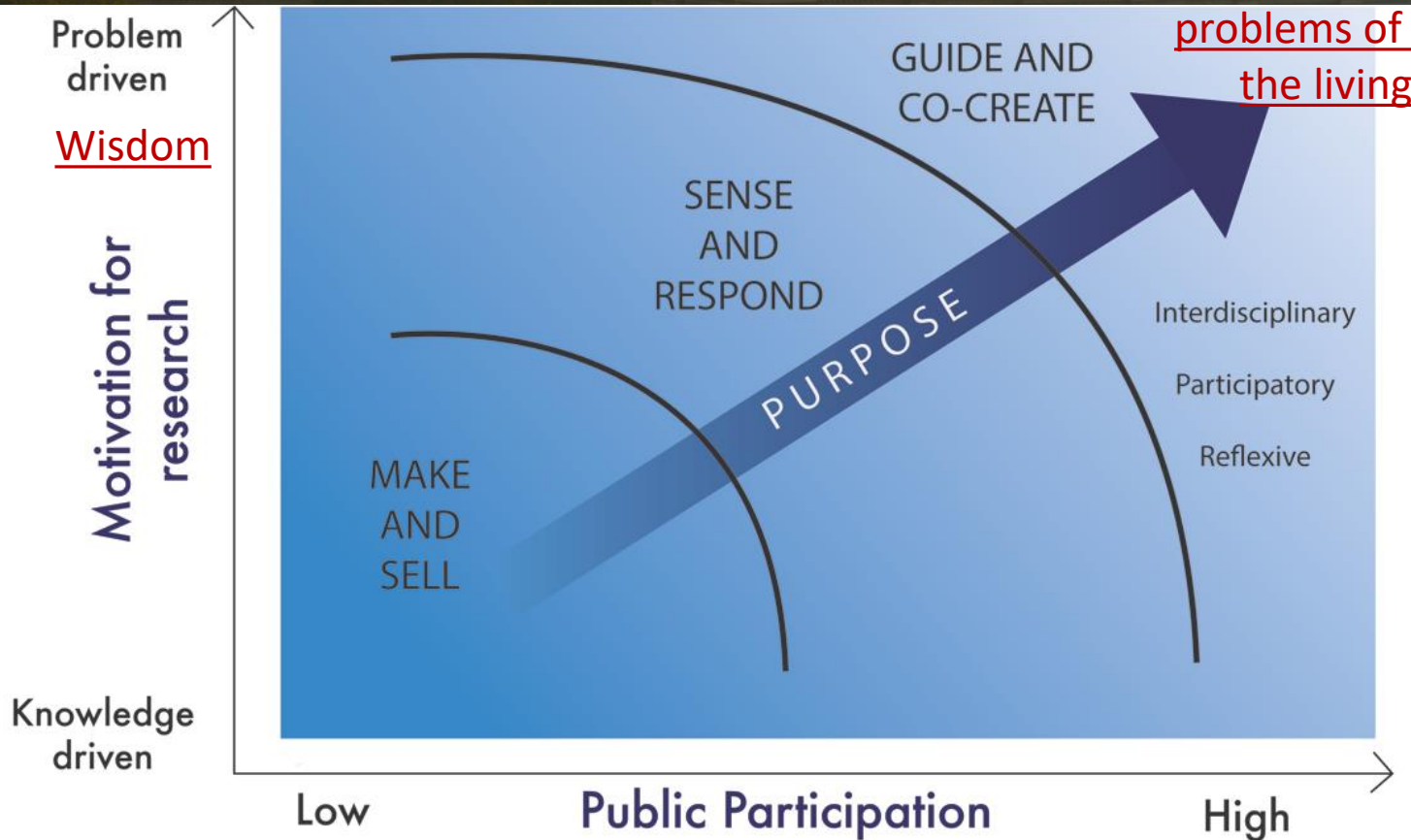






# PURPOSE

*a pursuit of an ambitious, clear, enduring and overarching goal which is motivating*



wisdom vs knowledge  
(Nicholas Maxwell, UCL)

‘In the not too distant past, researchers toiled in ivory towers, presenting findings at meetings of learned societies and publishing in obscure journals, often entombing information. As the need for stakeholder and public accountability grew, public relations and ‘big C’ communications departments flourished. They trumpeted the scientific discoveries of their institutions to demonstrate the excellence or relevance of their research and, of course, to generate more funding. In government settings, in particular, their role evolved from broadcasting or ‘pushing’ the scientific advances of their parent organizations to creating and ensuring consistent, overarching messaging about those institutions—both internally and to the public at large. This resulted in ‘closing down’ the science communications process, effectively burying uncertainty and staving off debate.’

(Bielak et al. 2008, p.202).

Stewart & Hurth in press

Selling Planet Earth: re-purposing geoscience communication.

In: **Geoethics: Status and Future Perspectives** Geological Society of London Spec Publ.



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## scientists as marketers

