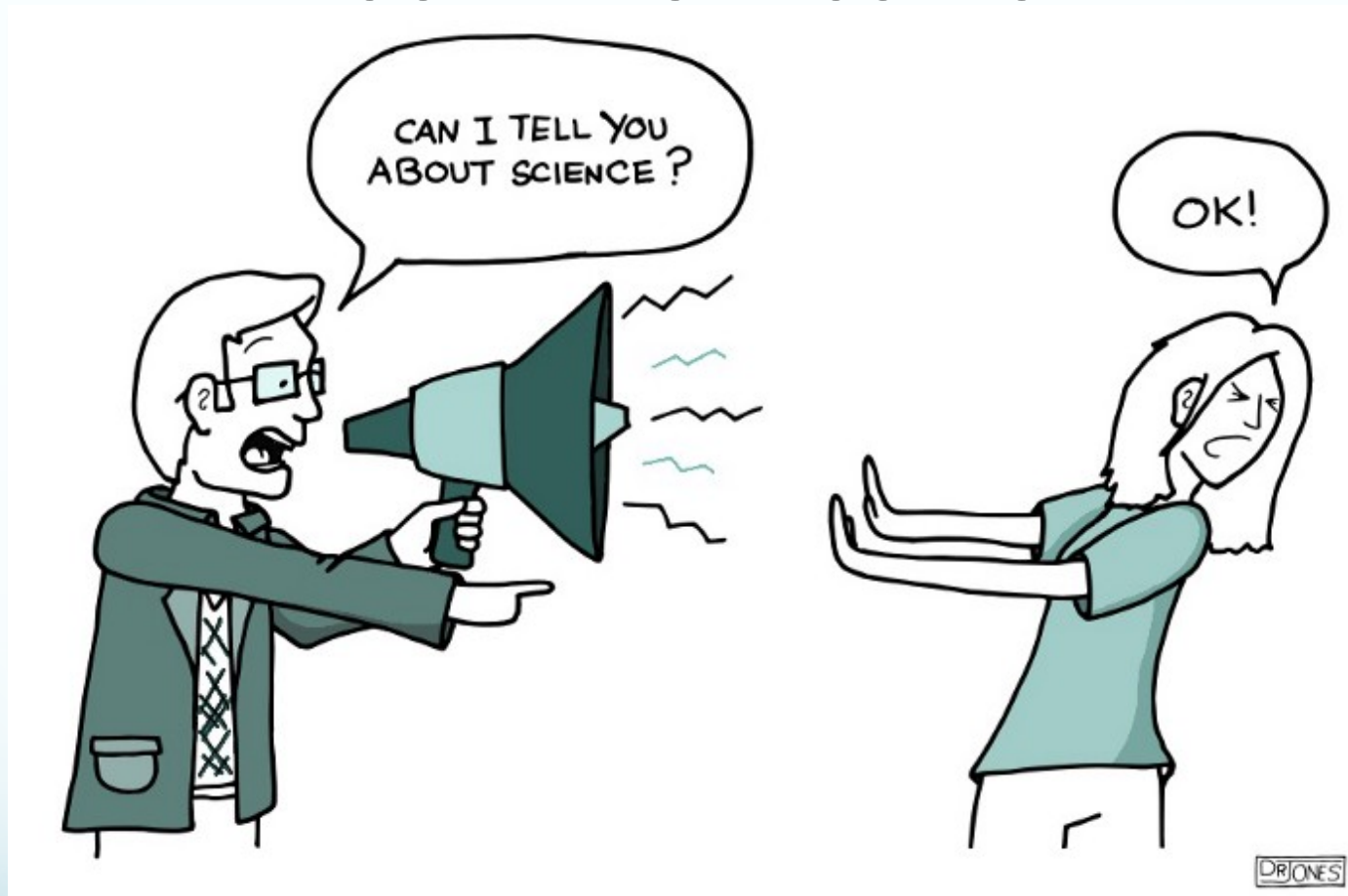


Problematic concepts in science communication



Dr. Jonathan Roberts

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Campus perspective

- Wellcome Genome Campus Connecting Science's mission is to enable everyone to explore genomic science and its impact on research, health and society.
- We are at the interface of research and industry translating science into tangible societal benefits.
- We maximise the societal benefit of knowledge obtained from genome sequences.

Research

innovation

learning and engagement

Current perspective

- Deficit
- Dialogue
- Expert

Britain has had enough of experts, says Gove

Brexit campaigner offers to have disputed EU contribution figure audited



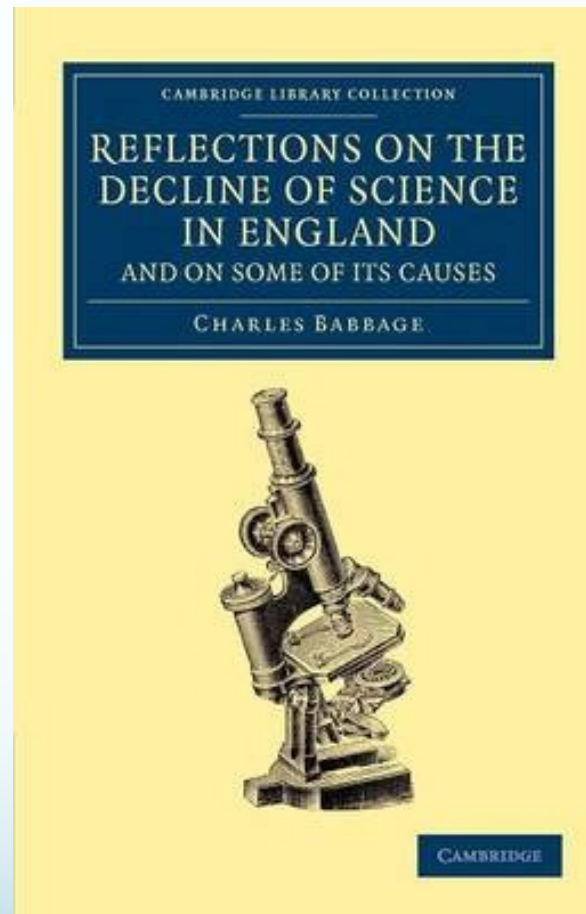
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Historical perspective

- *Chronocentrism*: “The belief that one’s own times are paramount.” Jib Fowles
- The author and academic Philip Seargeant is perhaps more pithy when he calls this “the narcissism of the present”
- Also gets me of the hook. Long standing issues. No easy answers here!

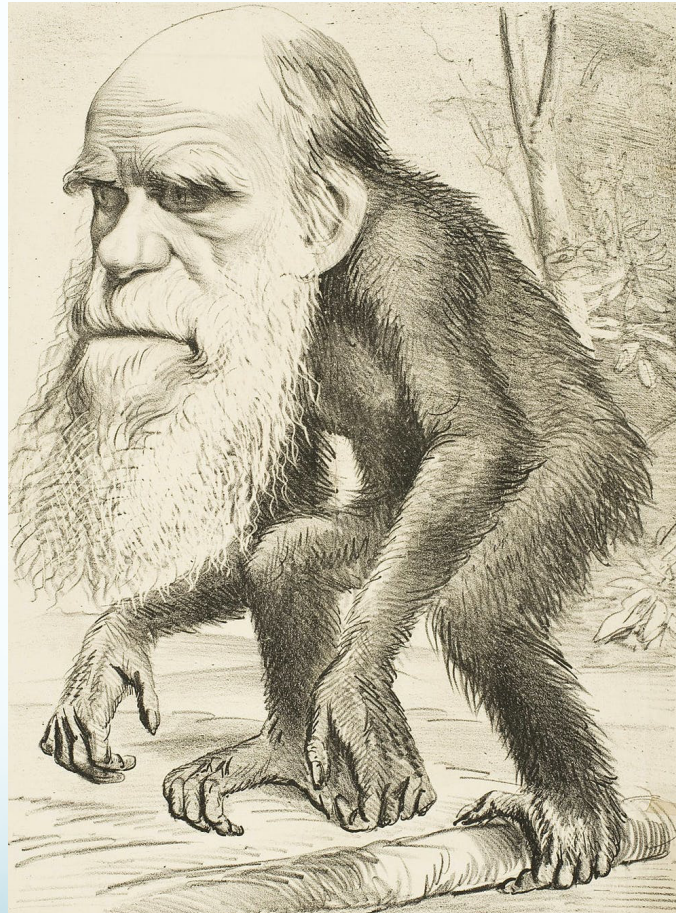
1830



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1839



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1957

Red-Made Satellite Flashes Across U. S.



Soviet Claims Big Victory

LONDON (EP) — The Soviet Union has won the race into outer space by launching mankind's first earth satellite and a Sputnik Moon lander Sunday night in the victory of the first stage of a projected flight to the moon.

The following radio "beep" of the satellite reported to the world that man had stepped his footprint into the age of space, and with an 184-pound, 18.5-inch globe was orbiting the earth 100 miles up at a speed of 18,000 miles an hour.

A special bulletin issued by the American Space Council, which is an independent agency and member of the U. S. National Academy of Sciences, said that the "Sputnik" satellite was an early glimpse of the moon, the moon.

The launching is also the beginning of the space race between the U. S. and the Soviet Union. The U. S. is the leading power in the field of space exploration.

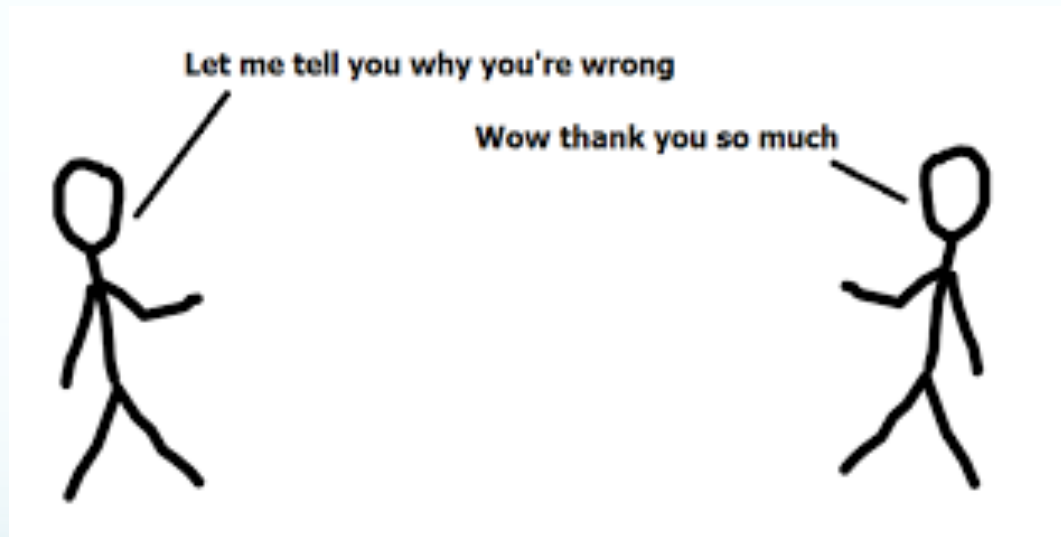
WASHINGTON (EP) — The world's first satellite, Sputnik, was launched Sunday by the Soviet Union.

American Scientists 'Shocked'

WASHINGTON (EP) — Many scientists here said Sunday that the Soviet Union's launch of the first satellite into orbit is a "big step" in the space race. The launch is seen as a "big step" in the space race. The launch is seen as a "big step" in the space race.

1985

- Bodmer report
 - “Public understanding of science”



2000

Deficit model



Experts



Society: receivers of information

Knowledge transfer

Dialogue model



Governments



Society: contributors to social intelligence



Experts




Trade and industry

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Deficits persist

Science, Values, and Science Communication: Competencies for Pushing Beyond the Deficit Model

Sherry Seethaler , John H. Evans, Cathy Gere, more...

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<https://doi.org/10.1177/1075547019847484>

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Abstract

The deficit (knowledge transmission) model of science communication is widespread and resistant to change, highlighting the limited influence of science communication research on practice. We argue that scholar–practitioner partnerships are key to operationalizing science communication scholarship. To demonstrate, we present a transformative product of one such partnership: a set of ethics and values competencies to foster effective communication with diverse audiences about scientific research and its implications. The 10 competencies, focused on acknowledging values, understanding complexities of decision making, strategies to deal with uncertainty, and diversifying expertise and authority, provide a guiding framework for re-envisioning science communication professional development.

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Dialogue: diffuse definitions

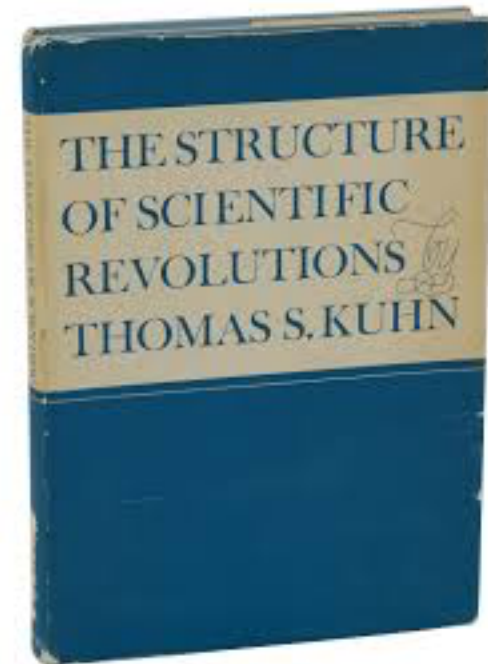
- Key aspects of dialogue; take lay views seriously. But how?
- GM nation. 2003. Consensus forming? Too little too late? Just consensus forming...PR?
- 'Upstream' engagement. How far do we let 'the public' set the agenda? What role for expertise.

Dialogues lovely, but impractical?

Laboratory Life: The Social Construction of Scientific Facts (SAGE Library of Social Research)

Latour, Bruno

Note: This is not the actual book cover



“Scientific truth is beyond loyalty and disloyalty.”

Isaac Asimov (Foundation)

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So...we need a space for scientific truth

Are you sure we can't just tell people the facts?



Well...perhaps. Popularisation is fine and valid. However, it is not good changing minds or engage broader audiences. This is because Science is also culture.

The deficits don't work

- More knowledge does not always lead to better attitudes.


RESEARCH ARTICLE 

Individuals with greater science literacy and education have more polarized beliefs on controversial science topics

 Caitlin Drummond and  Baruch Fischhoff

PNAS September 5, 2017 114 (36) 9587-9592; first published August 21, 2017 <https://doi.org/10.1073/pnas.1704882114>

Edited by Roger E. Kasperson, Clark University, Worcester, MA, and approved July 19, 2017 (received for review March 23, 2017)

Article Figures & SI Info & Metrics  PDF

Significance

- Science is culture.

Bourdieu and culture

What makes some culture seem dumb and some culture seem smart?

"don't go and see superheroes hitting each other - that's for children!" Stephen Fry

Stephen Fry

'Perfect. Fry retells
the Greek Myths
with elegance'
The Times



HEROES

Mortals and Monsters
Quests and Adventures

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Science capital

Research Article |  Open Access |   

“Science capital”: A conceptual, methodological, and empirical argument for extending bourdieusian notions of capital beyond the arts

 Correction(s) for this article 

Louise Archer , Emily Dawson, Jennifer DeWitt, Amy Seakins, Billy Wong

First published: 20 March 2015 | <https://doi.org/10.1002/tea.21227> | Citations: 122

 SECTIONS



PDF



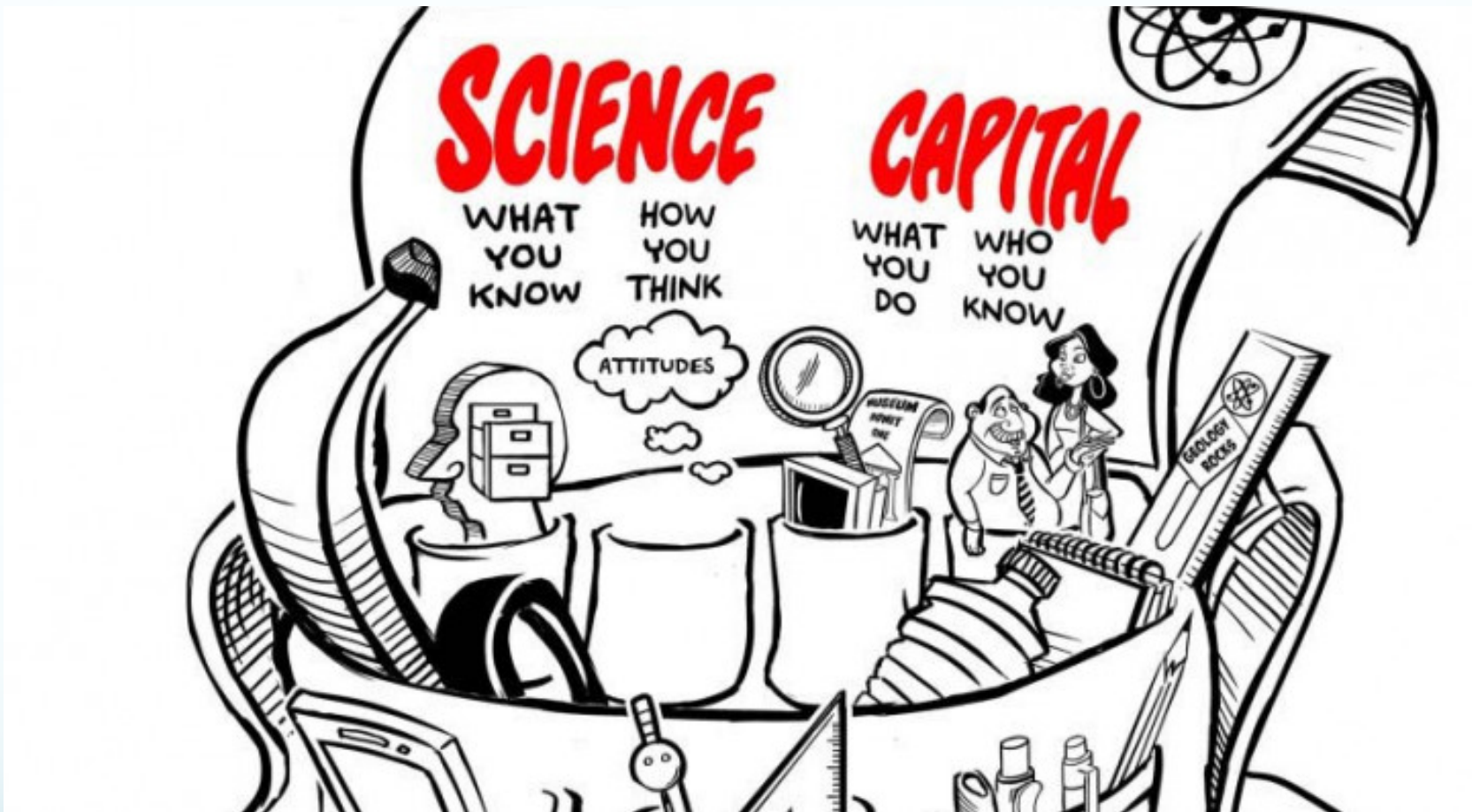
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The science capital measure developed by Louise Archer and her team, currently based at UCL Institute of Education¹¹ comprises several dimensions including: scientific literacy and qualifications; participation in informal science learning; family science connections; talking about science in everyday life; and feeling 'connected' to science. Government policy is to encourage building and enhancing science capital among the general public as a means of upskilling people, to support economic growth, ensure a supportive social context for science and technology, and to widen engagement in science across all social groups.

Previous studies, both in the UK and elsewhere, have consistently found that those from lower socio-economic groups tend to be less positive about, and less engaged with, science and technology. Importantly, this socio-economic 'gap' is also reflected among young people in terms of their science career aspirations. The most common policy response has been to target STEM public engagement activities at lower socio-economic groups. However, Archer et al (2013) argue that a broader social response to tackling social and economic inequality, supported by specific public engagement measures, is the best way to increase science capital in the UK.

Funds of Knowledge



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The concept of "funds of knowledge" is based on a simple premise: people are competent and have knowledge, and their life experiences have given them that knowledge.

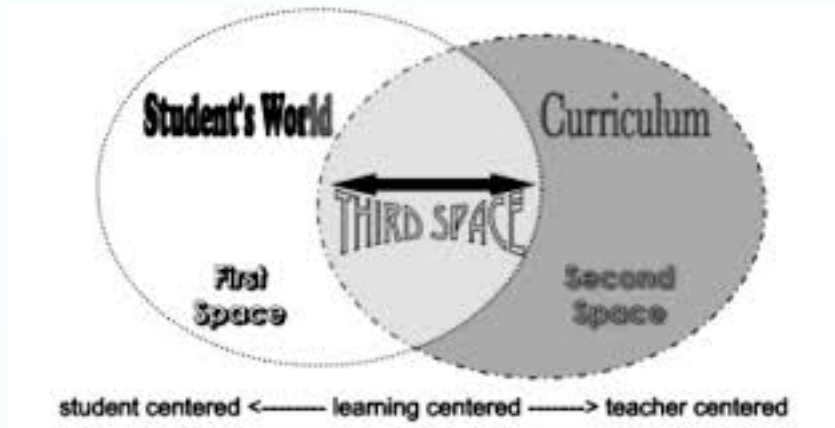
Gonzalez, Moll and Amanti (2005)

And do you think there is something of what scientists do that lay people could not understand?

No. If you think for a moment about what Hollywood expects its audience to be able to follow, nothing that citizens need to understand about the workings of the sciences is as complicated as that. There is nothing to say on this topic that is as narratively complicated as "Matrix 3".


Simon Shaffer 2011

Hybrid Space/Third Space



Full Access

Funds of knowledge and discourses and hybrid space

Angela Calabrese Barton , Edna Tan

First published: 26 November 2008 | <https://doi.org/10.1002/tea.20269> | Citations: 165

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Summary

- If you want to change people's mind, deficits don't work.
- Science is culture.
- Hybridity/Third space. Potential way of operationalising dialogue model
 - If you want to be heard, you have to listen.
 - Tension is an opportunity

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Questions?



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