Q+Q and Meme Portfolio

Victor Elgersma

Contents

Introduction

This is the meme / Q+Q portfolio for the “Science in the Public” in Spring 2026. It proves that I did the reading. Since some of the memes are based on buried references, I have taken the liberty of adding a few comments and quotes from the text to clarify their meaning.

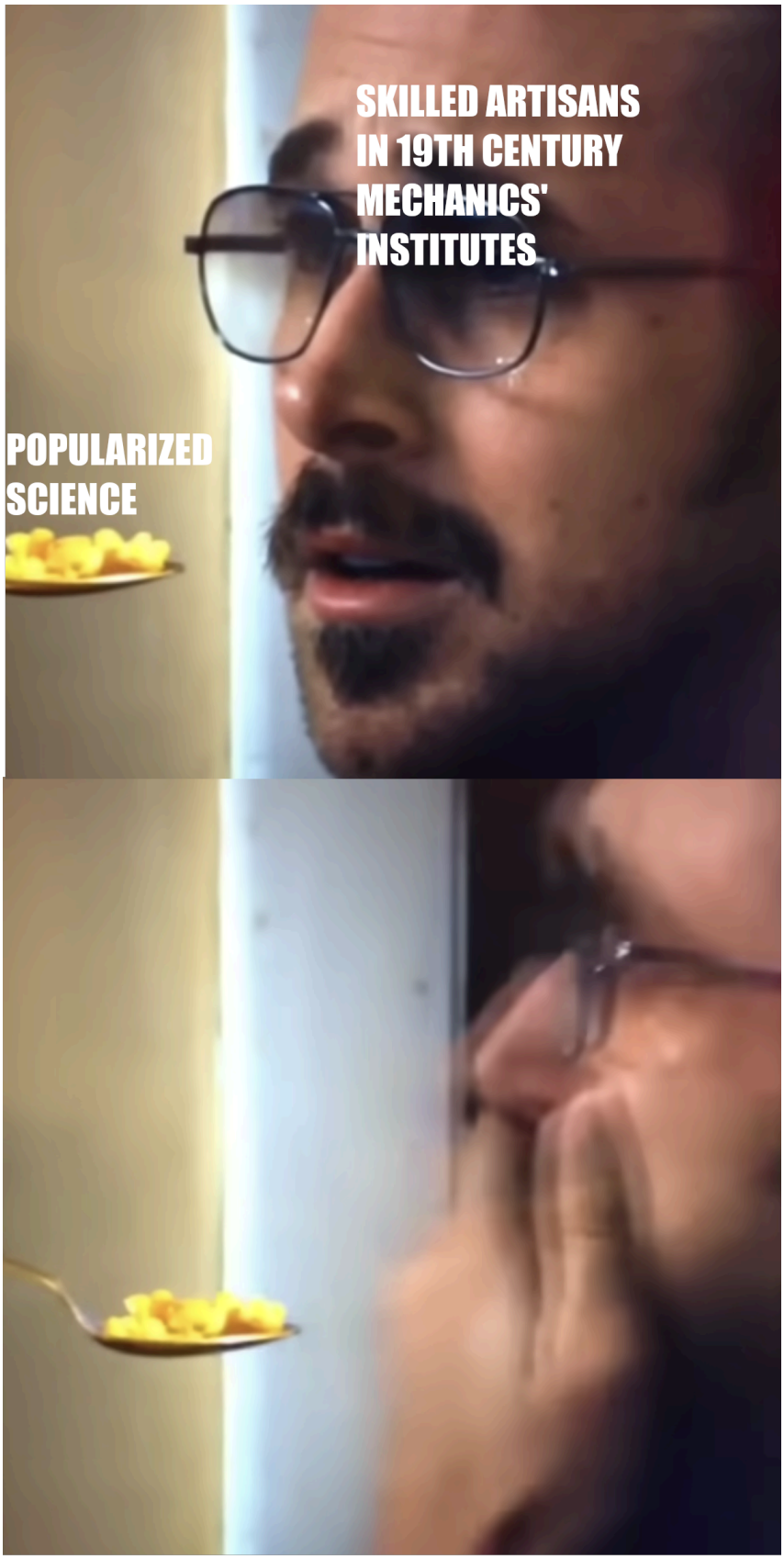
Week 1: Introduction

Wednesday, 4th February (Robert-Jan Wille)

Bensaude-Vincent, B. (2009). A Historical Perspective on Science and Its "Others". *Isis*, *100*(2), 359–368.

The meme is based on the following quote, in which Bensaude-Vincent gives an example from alchemy showing that scientists policed who was allowed to do science (and thus constructed the 'public') by discrediting their opponents as "charlatans"

> Following Avicenna's attack, alchemists **were condemned either as charlatans or as magicians**. The ambient suspicion and hostile attitude of the dominant culture nevertheless contributed to shape alchemy and to advance knowledge. In response to these attacks, alchemists soon developed experimental tests (such as cupellation and cementation) to guarantee the authenticity of their gold; they also invented experimental demonstrations to convince their critics that the products of their art did not differ from the naturally occurring substances they used to decompose and then recombine their metallic compounds.
>
> — Bensaude-Vincent, 2009 (emphasis mine)



Cooter, R., & Pumfrey, S. (1994). Separate Spheres and Public Places: Reflections on the History of Science Popularization and Science in Popular Culture. *History of Science*, *32*(3), 237–267.

Week 2: The Age of Revolutions: Print Culture, Coffee Houses, Salons and Clubs

Wednesday, 11th February (Robert-Jan Wille)

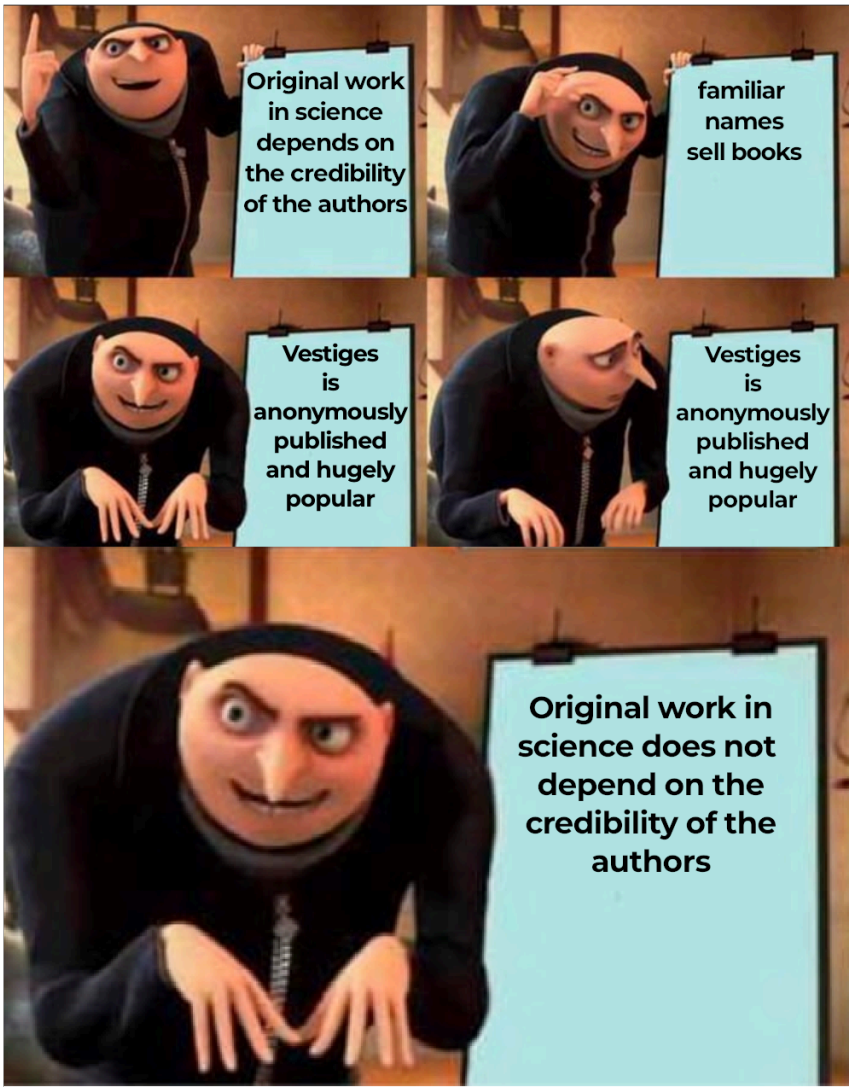
- Memes missing

Chartier, R. (1991). *The Cultural Origins of the French Revolution.* Duke University Press.

Johns, A. (2003). *Print and Public Science* (R. Porter, Ed.; pp. 536–560). Cambridge University Press.

Stewart, L. (1992). *The Rise of Public Science: Rhetoric, Technology, and Natural Philosophy in Newtonian Britain, 1660-1750.* Cambridge University Press.

Friday, 13th March (Robert-Jan Wille)



Secord, J. A. (2000). Chapter 2. In *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation.* University of Chicago Press.

Secord, J. A. (2000). Prologue. In *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation.* University of Chicago Press.

Week 3: Transformations in the Nineteenth-Century I: Steam Reading

Wednesday, 18th February (Robert-Jan Wille)

Secord, J. A. (2000). Chapter 4. In *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (pp. 77–110). University of Chicago Press.

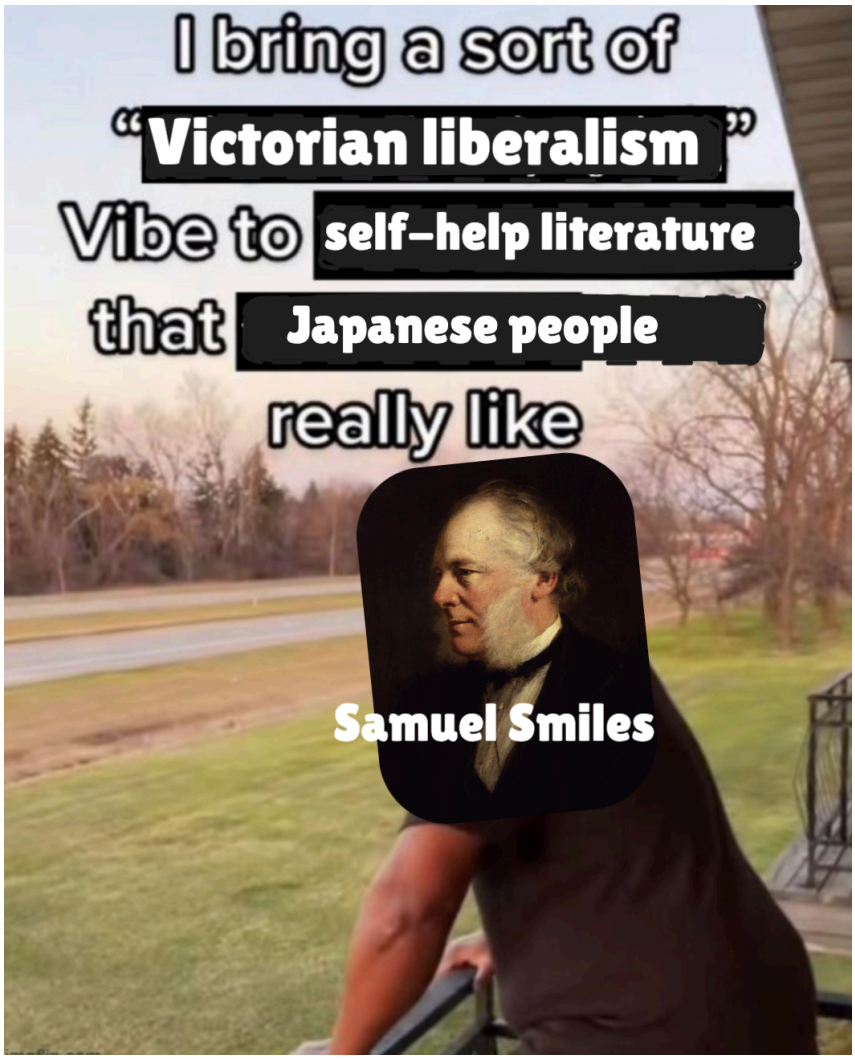
Lightman, B. (2007). *Victorian Popularizers of Science: Designing Nature for New Audiences*. University of Chicago Press.

Both anglican clergymen and women popular science writers had reasons to argue against scientific naturalism and in favor of natural theology.

Lightman, B. (2007). *Victorian Popularizers of Science: Designing Nature for New Audiences*. University of Chicago Press.

Friday, 20th February (Robert-Jan Wille)

Nall, J. (2017). Constructing Canals on Mars: Event Astronomy and the Transmission of International Telegraphic News. *Isis*, *108*(2), 280–306.

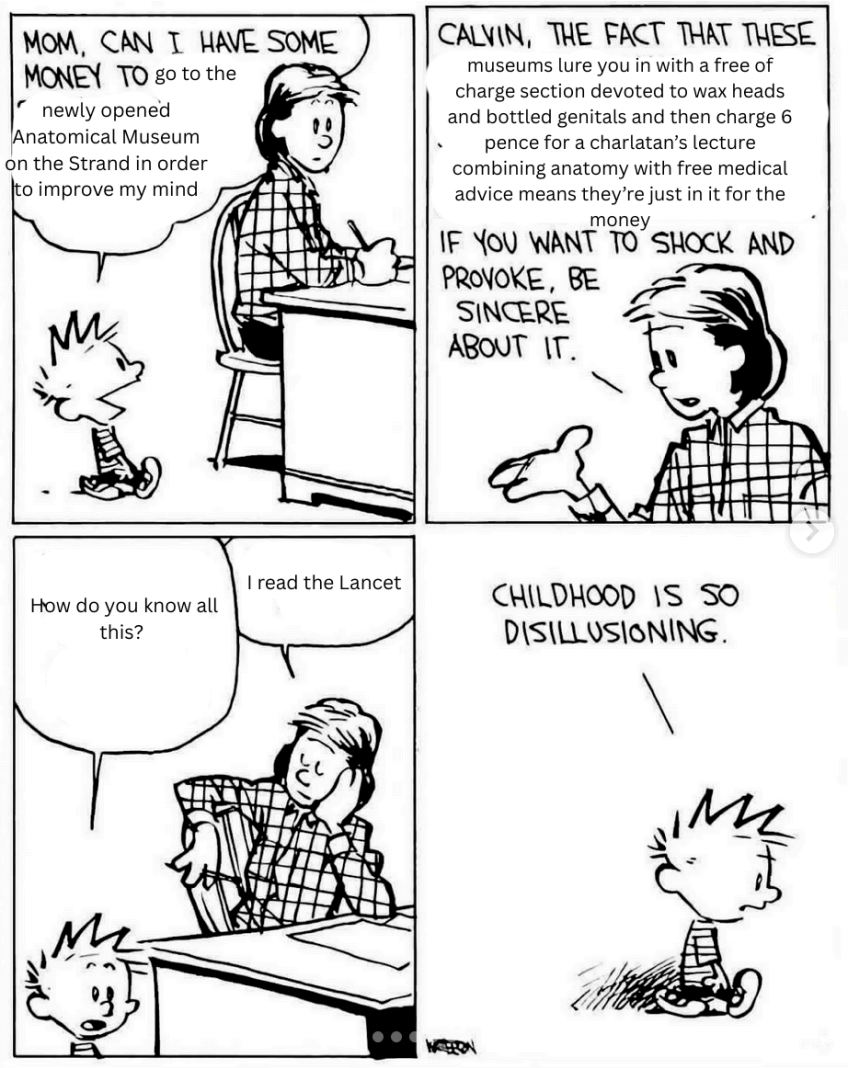


Meade, R. (2017). Popular Science and Personal Endeavor in Early-Meiji Japan: The Case of Hatsumei Kiji. *Historia Scientiarum*, *26*(2), 77–92.

Week 4: Transformations in the Nineteenth Century II: Museums and Futurists Novels

Wednesday, 25th February (Robert-Jan Wille)

Bennett, T. (1995). *The Birth of the Museum: History, Theory, Politics*. Routledge.



Alberti, S. J. M. M. (2007). The Museum Affect: Visiting Collections of Anatomy and Natural History. In A. Fyfe & B. Lightman (Eds.), *Science in the Market Place: Nineteenth-Century Sites and Experiences: Science in the Market Place: Nineteenth-Century Sites and Experiences* (pp. 371–403). University of Chicago Press.

Friday, 27th February (David Baneke)

> **QUOTE**
>
> "The bad news in physics broke in 1853 with William Thomson Kelvin's essay "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy", which predicted the death of the earth from heat loss as a result of the second law of thermodynamics"
>
> — Kern, S. (2003). *The Culture of Time and Space, 1880-1918*. Harvard University Press., (p104)

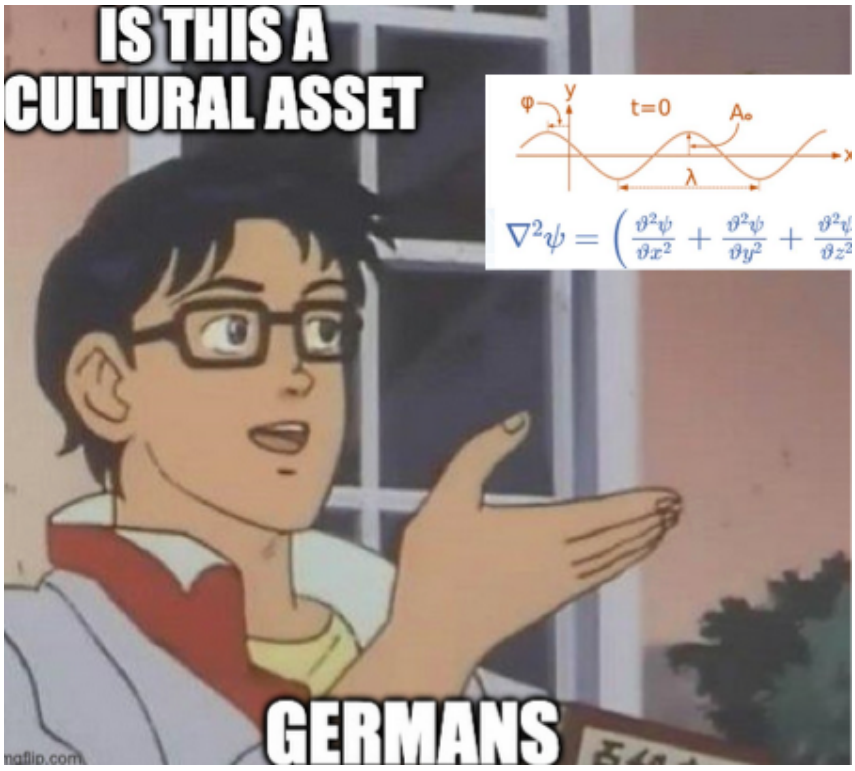
This sentence is key for me because the text is about how scientific and technological developments fuelled conceptions of the Future. Stephen Kern argues that the second law of thermodynamics informed and fuelled a certain techno-pessimism, emphasising the 'expectant' mode of the future - evident in the writings of Brooks Adams and Oswald Spengler.

> **QUESTION**
>
> *To turn the argument on its head, did ignorance of the second law partly enable the future-optimism evident in the following sentiment expressed in* Vestiges*: "Is our race but the initial of the grand crowning type? Are there yet to be species superior to us in organization, purer in feeling, more powerful in device and act, and who shall take a rule over us!"?*

If Kern is right, it begs the question of whether people's ignorance of entropy encouraged the kind of future-optimism expressed in Vestiges (1844). I believe that Vestiges' optimism is justified by means of the increasing order and complexity found in the fossil record. Regardless, it is interesting to ask how people reconciled this apparent increase of order with the second law of thermodynamics, and when do we hear for the first time the contemporary formulation that 'life creates local order at the expense of global disorder'

Week 5: The Global Twentieth Century: Communicating in the Age of Extremes

Wednesday, 4th March (Robert-Jan Wille)



Schirrmacher, A. (2013). Popular Science as Cultural Dispositif: On the German Way of Science Communication in the Twentieth Century. *Science in Context*, *26*(3), 473–508.

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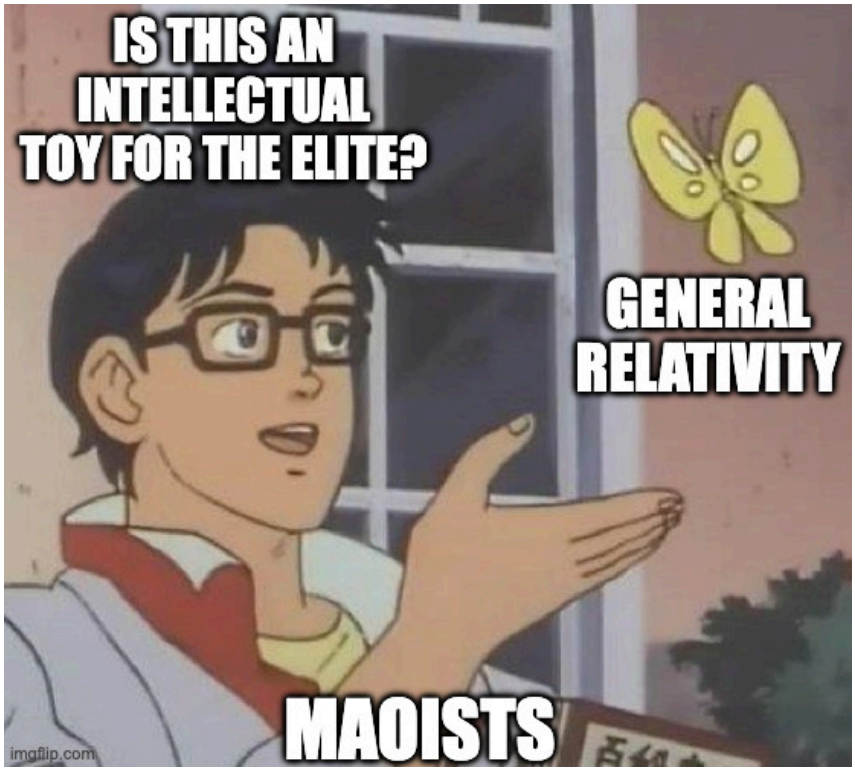


Fan, F.-t. (2012). Science, State, and Citizens: Notes from Another Shore. *Osiris*, *27*(1), 227–249.

Week 6: The Global Twentieth Century II: Youthful and Groovy Science

Wednesday, 11th March (David Baneke)

QUOTE

> What would happen to the questing mind of the home chemist, radio boy, or aviation buff, adrift in a wasteland of football games and comic books?
>
> — Onion, R. (2016). *Innocent Experiments: Childhood and the Culture of Public Science in the United States*. University of North Carolina Press.

This quote highlights a key turn in Rebecca's historical account of science-play in the USA. The postwar period brought with it a general lamentation over a peer culture which suppressed the inquisitive 'instinct', which was thought to be more prevalent in prewar times. If educational theory still subscribed to recapitulation theory with white Europeans as the most evolved intelligence, as Rebecca Onion argues, then the football games and comic books were forces that prevented young boys from fulfilling their potential as torchbearers of Western civilization. The fear is therefore that postwar peer culture will cost white people what sets them apart from other races: the evolutionary gift of the scientific mindset.

QUESTION

My first question to Onion would be, did we ever leave this period? Because the quote will not strike anyone as anachronistic if we substitute "tik tok and AI slop" for "football games and comic books". My second question would be: if fears over football games and comic books were motivated by a certain worldview which was implicitly racist, would Onion contend that today's fears of brainrot are equally rooted in recapitulation and hence scientific racism? Obviously, not all calls to cultivate certain virtues in children are rooted in racism - but how do we escape the recapitulation trap in calls for virtuous science-play? That is my third question.

QUOTE

> "Unfortunately, what most of us know about science consists of vaguely remembered lies-to-children"
>
> — Ian Stewart & Jack Cohen (as quoted in The View From Sari's World)

In her review of *The Science of Discworld* the blogger discusses the "lies-to-children" we learn in school—simplified, technically "wrong" statements that prime the mind for future, more accurate explanations. She argues that because most adults don't continue their scientific education, those explanations never come; most adults are walking around with a worldview built entirely on these lies-to-children

QUESTION

Do we have any other choice than to tell lies-to-children? How could education possibly be done otherwise?

If the answer is no, then "truth" is a destination we can only reach by walking across a bridge of useful fictions.

Friday, 13th March (David Baneke)

QUOTE

> [Jeremy Bernstein] concluded his review of Capra's book "I agree with Capra when he writes, 'Science does not need mysticism and mysticism does not need science but man needs both.' What no one needs, in my opinion, is this superficial and profoundly misleading book.
>
> — Kaiser, D. (2011). *How the Hippies Saved Physics: Science, Counterculture, and the Quantum Revival*. W. W. Norton & Company.

Bernstein uses Capra's own words to dispatch his book *The Tao of Physics*. Typical criticisms of Capra included: the "superficial" parallels between quantum physics and eastern religions, the lumping of diverse Eastern traditions together, and downplaying physics' internal disagreements. The critics' focus is not so much on scientific inaccuracy, but on its distracting lack of substance. They do not question that the book may have a galvanizing effect it inspiring young people to study science. The Capra quote reveals an interesting paradox, which I explore in the Question below

QUESTION

If we accept that "man needs both," and we accept that science is a human activity, then how can we separate science from mysticism?

Capra's book famously motivated students and catalyzed interest in Bell's Theorem; Heisenberg, Pauli, Bohr and others claimed to be aided by Eastern thought in their scientific claims. If mysticism provides the psychological "scaffolding" or inspiration for scientific inquiry, does science not "need" it in a practical, human sense?

QUOTE

> Depictions of Carson as shy, courageous, suffering, dutiful, ethical, or quietly farsighted functioned as nonscientific elements in credentialing her as an authority.
>
> — Hecht, D. K. (2011). Constructing a Scientist: Expert Authority and Public Images of Rachel Carson. *Historical Studies in the Natural Sciences*, *41*(3), 277–302.

Hecht argues that "science believers" often rely on nonscientific, moralistic traits to validate an expert's authority. Just as detractors used gendered attacks to undermine Carson, her supporters used her "reluctant crusader", and other personal virtues to defend her. This suggests that even for the pro-science public, a scientist's perceived character is inseparable from the legitimacy of their claim. The public therefore seems to always go for ad-hominem. And of course, how could they do otherwise? They do not have the scientific literacy to assess a claim on scientific grounds.

QUESTION

Hecht argues that the use of private virtues to boost her legitimacy as a scientist can be explained by creating an "attachment" between the public and the Carson, but why should this attachment be necessary for public acceptance? I trust the weather report without needing an attachment to the relevant scientists.

I would argue that two things are necessary for the public to assess scientists on their personal virtues and vices: 1) scientific controversy and 2) tangible impact on our lives. Weather reports are uncontroversial and impact our lives negligibly, but reports of chemicals in our environment, the attack on our most cherished beliefs (the divine creation of Man vs the descent from other life forms), or the demand to keep oneself socially distanced for months on end (as in the Covid pandemic), have both resisted scientific consensus and impact the public's lives considerably. "Ad hominem" is then the extension of science by other means, with apologies to Clausewitz

Week 7: The Global Twentieth Century III: Visions of/from Space

Saturday, 21st March (David Baneke)

QUOTE

> With an affective power drawn from a history of maritime and polar exploration, the image of the space pioneer encouraged interest in the discovery of our planetary outside [...] the exploits of the astronauts in particular revived the heroic figure of the explorer
>
> — Damjanov, K., & Crouch, D. (2018). Global media cultures among the stars: formations of celebrity in outer space. *International Journal of Cultural Studies*, *21*(5), 553–568.

This quote captures Damjanov & Crouch' claim that space exploration inherits a certain cultural form and style from earlier traditions of maritime and polar exploration. Media narratives revived the heroic explorer figure, transferring older ideals of discovery, risk, and adventure into the context of the Space Age.

QUESTION

To what extent is the analogy between polar explorers and astronauts convincing, given their different degrees of autonomy?

Arctic explorers like Roald Amundsen relied on improvisation and survival skills (in a famous case, his doctor Frederick Cook hunting and killing large animals to keep the crew from dying of scurvy), whereas astronauts operate within tightly controlled, ground-controlled systems. Does this challenge the idea that astronauts fit the traditional "heroic explorer" archetype? Or does it partly explain (as I humbly suggest) why people quickly lost interest in manned spaceflight to the moon after Apollo 11?

QUOTE

> That the term 'global' took on its contemporary theoretical connotations in the early 1970s and turned into the conceptual category so familiar today is not a coincidence but a by-product of the post-Apollo period.
>
> — Geppert, A. T. (n.d.). *The Post-Apollo Paradox.*

This sentence captures Geppert's argument by linking the rise of "the global" as a key conceptual category to the cultural aftermath of the Apollo missions. It suggests that ways of thinking about Earth as a single, interconnected whole were historically rooted in the experience of seeing the planet from space.

QUESTION

If Apollo-era imagery—most visibly the planting of the American flag on the Moon—was produced within a geopolitical framework dominated by the USA, how did this shape the concept of "the global" that emerged in the 1970s?

Does the post-Apollo 'globality' reflect a U.S.-centric technological and ideological power? It would be interesting to research whether the non-aligned and Soviet countries experienced the same self-consciously 'global' turn in the 1970s. I suspect it was a purely Western phenomenon.

QUOTE

> As with the Eagle Nebula, many of the Hubble images bear a striking resemblance to earthly geological and meteorological formations, especially as depicted in Romantic landscapes of the American West."
>
> — Kessler, E. A. (n.d.). The Astronomical Sublime. *Uchicago Magazine.*

This sentence captures the core argument that Hubble imagery is not purely scientific but visually and culturally shaped. Kessler shows that these images are interpreted through pre-

existing aesthetic traditions, particularly Romantic landscape painting. This resemblance links contemporary astronomical visualization to historical modes of representing awe, scale, and the sublime.

QUESTION

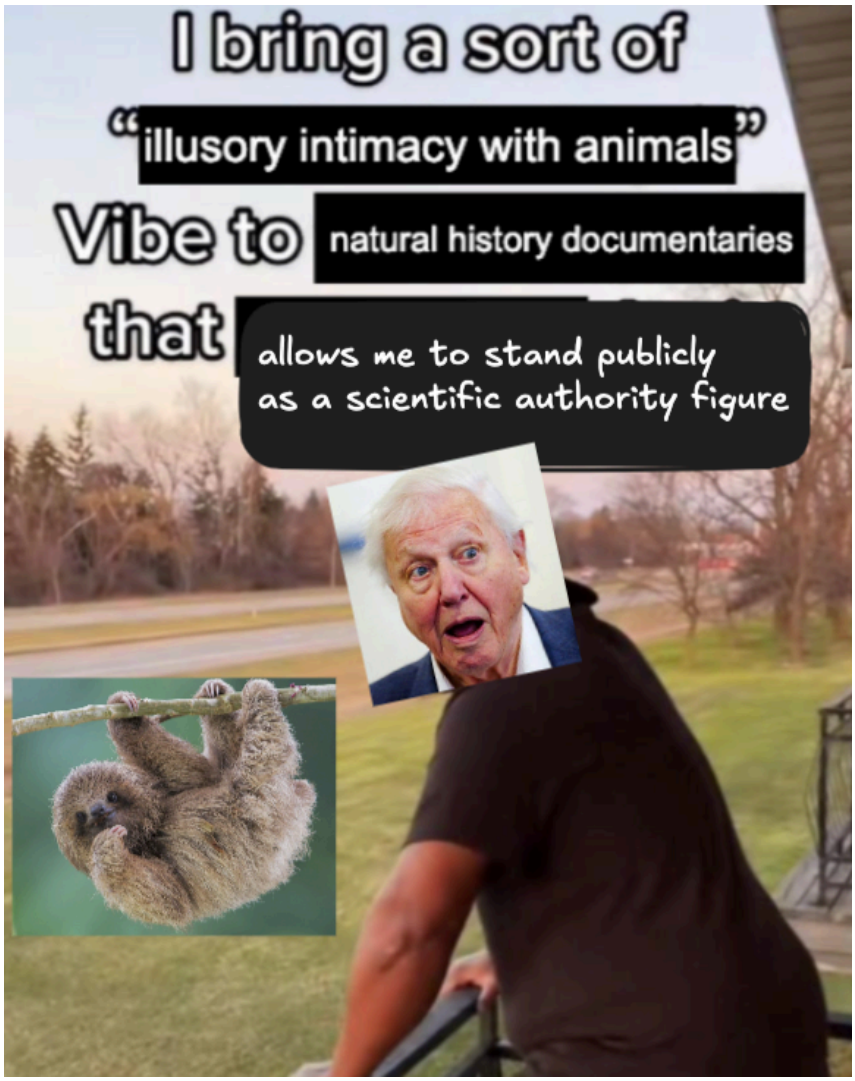
If Hubble images evoke Romantic depictions of the American West, do they in turn shape how we now perceive those landscapes?

Do we begin to "see" the Pillars of Creation when looking at places like Zion Canyon? This raises the possibility of a reciprocal relationship in which space imagery reinforces or transforms cultural ideas of the American West as sublime, vast, and exploratory.

Week 8: The Global Twentieth Century IV: Movies and Television

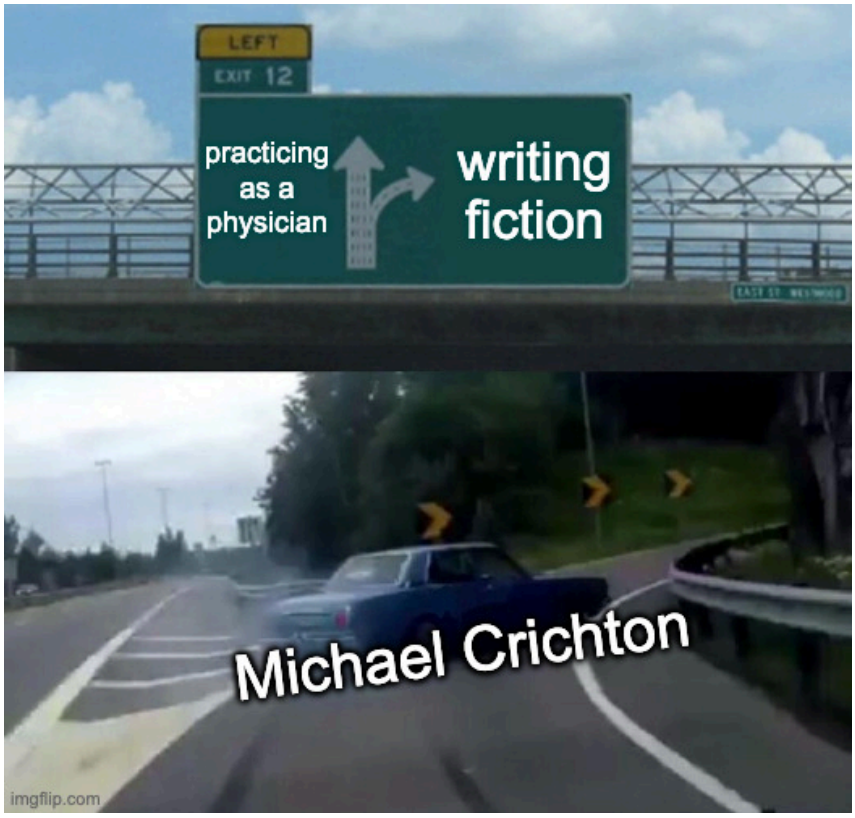
Wednesday, 25th March (Robert-Jan Wille)

Long, M. (2020). The Ciné-Biologists: Natural History Film and the Co-Production of Knowledge in Interwar Britain. *British Journal for the History of Science*, *53*(4), 527–557.



Gouyon, J.-B. (2011). From Kearton to Attenborough: Fashioning the Telenaturalist's Identity. *History of Science*, *49*(1), 25–60.

Friday, 27th March (Robert-Jan Wille)



Radin, J. (2019). The Speculative Present: How Michael Crichton Colonized the Future of Science and Technology. *Osiris*, *34*(1), 297–315.

Week 9: Dilemmas of the Twenty-first Century: Fears of Climate Change (Science)

Wednesday, 1st April (Robert-Jan Wille)

Radin, J. (2019). Alternative Facts and States of Fear: Reality and STS in an Age of Climate Fictions. *Minerva*, *57*, 411–431.

Oreskes, N., & Conway, E. M. (2010). *Introduction*. Bloomsbury Press.

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Bibliography

Alberti, S. J. M. M. (2007). The Museum Affect: Visiting Collections of Anatomy and Natural History. In A. Fyfe & B. Lightman (Eds.), *Science in the Market Place: Nineteenth-Century Sites and Experiences: Science in the Market Place: Nineteenth-Century Sites and Experiences* (pp. 371–403). University of Chicago Press.

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