

ESS 203 - Glaciers and Global Change

Wednesday January 27, 2021

Outline for today

- highlights of last Monday lecture: *Brianna Bjolstad*
- Today's highlights on Friday: *Madelyn Ulvin*

Please sign up to be a Highlights reporter

- Balance as Bias in reporting
- Think Tanks

Lab this week

- Climate models and the future of glaciers

Mid-term #1

It will be in one week - on Wednesday February 3.

- 5 study questions will be posted on Canvas later today
- 3 of these will form the actual test.
- Be sure to read the notes on “Writing a test”
- https://courses.washington.edu/ess203/TESTS/ESS203_writing_a_test.pdf

Study sessions?

HW 10 Literature Search Assignment for Friday Jan 29

Extra lead time has been allotted to allow for consultation with your partners.

(1) You have been assigned partners to work with you on this assignment. Check out **People > Library Groups**.

With your partners, carry out the reference searches assigned here - **HW_10_Reference_searches.pdf**

(2) Matt Parsons will be at our Friday class to answer your questions about the Library and about your literature searches.

Please enter a question or comment by Thursday on the Google doc at

<https://docs.google.com/document/d/1bF0JNxu9FkIa3G3OcQZAsDLrwuICOiX-yxr8pfODW-I/edit#heading=h.5spg5w2dqiai>

Science January 1, 2021

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FEATURE



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Jeffrey Brainard

[+ See all authors and affiliations](#)

Science 01 Jan 2021:
Vol. 371, Issue 6524, pp. 16-20
DOI: 10.1126/science.371.6524.16

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As a new mandate takes effect, researchers and institutions grapple with the trade-offs of making scientific publications free for all



Science
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ELSEVIER

Peer-reviewed study of balance-as-bias

Global Environmental Change 14 (2004) 125–136



www.elsevier.com/locate/gloenvcha

Balance as bias: global warming and the US prestige press[☆]

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Abstract

This paper demonstrates that US prestige-press coverage of global warming from 1988 to 2002 has contributed to a significant divergence of popular discourse from scientific discourse. This failed discursive translation results from an accumulation of tactical media responses and practices guided by widely accepted journalistic norms. Through content analysis of US prestige press—meaning the *New York Times*, the *Washington Post*, the *Los Angeles Times*, and the *Wall Street Journal*—this paper focuses on the norm of balanced reporting, and shows that the prestige press's adherence to balance actually leads to biased coverage of both anthropogenic contributions to global warming and resultant action.

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(You can track this thread forward in time in ISI Web of Science.)

Reporters and scientists have Different Goals

Key principle for Scientists

- Get the story right.
- Get the story right.
- Get the story right.

Key principles for Reporters

- Get the story right.
- Be independent i.e. not beholden to sources
(Don't be a shill for your sources).
- Be balanced, i.e. present both sides of every issue.

But being “balanced” also introduces a bias.

How's that?!

Balance as bias: global warming and the US prestige press

Abstract

This paper demonstrates that *US prestige-press coverage of global warming from 1988 to 2002 has contributed to a significant divergence of popular discourse from scientific discourse.*

This failed discursive translation results from an accumulation of tactical media responses and practices *guided by widely accepted journalistic norms.*

Through content analysis of US prestige press— meaning the New York Times, the Washington Post, the Los Angeles Times, and the Wall Street Journal—this paper focuses on *the norm of balanced reporting*, and shows that the *prestige press's adherence to balance actually leads to biased coverage of both anthropogenic contributions to global warming and resultant action.*

Global Environmental Change 14(2), 125–136), (2004).

Objectivity (Chris Mooney, *American Progress*)

“In its most simplistic version, journalistic objectivity means that *both sides on an issue should be balanced out against one another*. But this definition collapses when it comes to scientific issues. Science isn't a democracy, and *in practice, one side in a scientific debate is often much more reputable than another*. Findings that have survived peer review, been published in leading journals, and replicated or confirmed by

other scientists tend to have much stronger weight attached to them.”

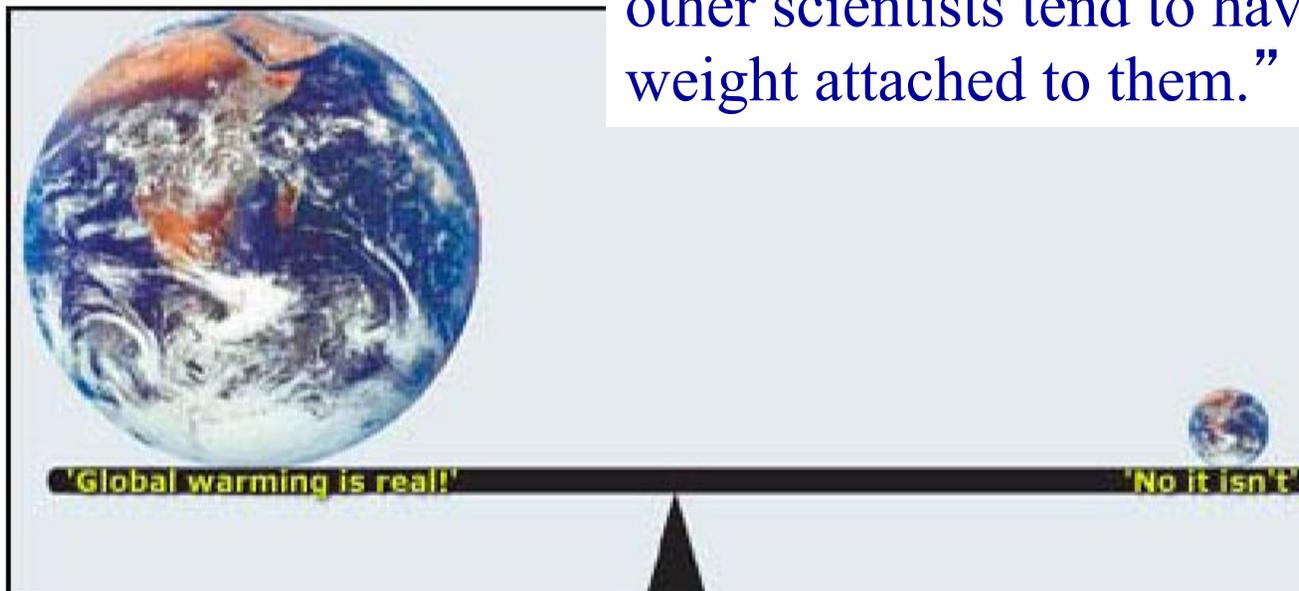


Image:
Christopher Shea,
Boston Globe, April
9, 2006

ESSAY

BEYOND THE IVORY TOWER

The Scientific Consensus on Climate Change

Naomi Oreskes

Policy-makers and the media, particularly in the United States, frequently assert that climate science is highly uncertain. Some have used this as an argument against adopting strong measures to reduce greenhouse gas emissions. For example, while discussing a major U.S. Environmental Protection Agency report on the risks of climate change, then-EPA administrator Christine Whitman argued, “As [the report] went through review, there was less consensus on the science and conclusions on climate change” (1). Some corporations whose revenues might be adversely affected by controls on carbon dioxide emissions have also alleged major uncertainties in the science (2). Such statements suggest that there might be substantive disagreement in the scientific community about the reality of anthropogenic climate change. This is not the case.

Without substantial disagreement, scientists find human activities are heating the Earth's surface.

Academy of Sciences report, *Climate Change Science: An Analysis of Some Key Questions*, begins: “Greenhouse gases are accumulating in Earth’s atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise” [p. 1 in (5)]. The report explicitly asks whether the IPCC assessment is a fair summary of professional scientific thinking, and answers yes: “The IPCC’s conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects the current thinking of the scientific community on this issue” [p. 3 in (5)].

Others agree. The American Meteorological Society (6), the American Geophysical Union (7), and the American Association for the Advancement of Science (AAAS) all have issued statements in recent

climate change is natural. However, none of these papers argued that point.

This analysis shows that scientists publishing in the peer-reviewed literature agree with IPCC, the National Academy of Sciences, and the public statements of their professional societies. Politicians, economists, journalists, and others may have the impression of confusion, disagreement, or discord among climate scientists, but that impression is incorrect.

The scientific consensus might, of course, be wrong. If the history of science teaches anything, it is humility, and no one can be faulted for failing to act on what is not known. But our grandchildren will surely blame us if they find that we understood the reality of anthropogenic climate change and failed to do anything about it.

Many details about climate interactions are not well understood, and there are ample grounds for continued research to provide a better basis for understanding climate dynamics. The question of what to do about climate change is also still open. But

This year's essay series highlights the benefits that scientists, science, and technology have brought to society throughout history.

Naomi Oreskes. 2004. *Science* 306, 1686

Naomi Oreskes, Science Historian at UCSD

“Oreskes decided to quantify the extent of scientific agreement after a conversation with her hairdresser, who said she doesn't worry about global warming because scientists don't know what's going on.”

“She analyzed 1,000 research papers on climate change selected randomly from those published between 1993 and 2003. The results were surprising: Not a single study explicitly rejected the idea that people are warming the planet.”

Sandi Doughton, Seattle Times, October 11, 2005.

What's that
"correction"?

CORRECTED 21 JANUARY 2005; SEE LAST PAGE

ESSAY

BEYOND THE IVORY TOWER

The Scientific Consensus on Climate Change

Naomi Oreskes

This year's essay series highlights the benefits that scientists, science, and technology have brought to society throughout history.

ERRATUM

Post date 21 January 2005

So what?

Essays: "The scientific consensus on climate change" by N. Oreskes (3 Dec. 2004, p. 1686). The final sentence of the fifth paragraph should read "That hypothesis was tested by analyzing 928 abstracts, published in refereed scientific journals between 1993 and 2003, and listed in the ISI database with the keywords 'global climate change' (9)." The keywords used were "global climate change," not "climate change."

Challenges to Oreskes' paper

For years, several other “scientists” with ties to industry have claimed that her work was fatally flawed.

- Oreskes found no peer-reviewed articles that contradicted the scientific consensus.
- Critics tried to refute a straw-man claim of scientific unanimity.
- The claims are either trivial, or have no basis.
- However, they have sown doubt in some sectors of our society.

Benny Peiser [“f-eye-sir”]

- Peiser is a lecturer in Social Anthropology of Sports.
- To my knowledge, he has no training in climate science.
- Oreskes had searched ISI Web of Knowledge for “*global climate change*” (that was her point after all), and found 928 papers, *none* of which challenged human influence.
- When printed, her article in *Science* had mis-stated her search words as “*climate change*”, hence the Correction.)
- Peiser searched the ISI database for articles on “*climate change*” and found nearly 12,000 hits between 1993 and 2003.
- The climate-denial “echo chamber” resonated with claims that Peiser has “discredited” Oreskes’ work for “arbitrarily discarding” the (~11,000) papers that didn’t support her point.

But it gets better (or worse) ...

Benny Peiser's evidence

In his list of nearly 12,000 articles, Peiser claimed, when challenged, to have located 34 abstracts that ...

- “reject or doubt the view that human activities are the main drivers of climate changes of the last 50 years.”

Examination of Peiser's list by Tim Lambert (Deltoid blog) showed that ...

- none of the 34 abstracts actually contested the global climate consensus.

Peiser countered that they were at least “ambiguous” on the subject.

- He ultimately produced only one critical paper, and it was not peer-reviewed. It was an opinion piece from *Journal of the American Association of Petroleum Geologists*.

Benny Peiser

- Peiser is now an invited “climate expert” speaker at climate-skeptic conferences (yes, they hold their own conferences and present their “science”.)

Sen. James Inhofe (R-OK) has cited Peiser as a climate expert.

- Inhofe is most well known for his denial of global warming. He supports a constitutional amendment to ban same-sex marriage and has proposed the Inhofe Amendment to make English the national language of the United States.*

What do *you* think?

Jim Inhofe



United States Senator
from Oklahoma

*https://en.wikipedia.org/wiki/Jim_Inhofe

Facets of Scientific Communication

And why should we care?

Communication among scientists

- Peer review enhances accuracy and cooperation.
- Peer review keeps science honest.

Communication between scientists and “stakeholders”

- Journalists
- The public (taxpayers)
- Policy makers (politicians and bureaucrats)
- There are many opportunities to misunderstand.

Science or misrepresentation of science

- Used as a political weapon to create controversy?
- How can *you* filter out the “spin”?

From a book review in
Science, Sept 5 2008

A tobacco industry strategy
memo* argues,

“Doubt is our product since it
is the best means of
competing with the ‘body
of fact’ that exists in the
minds of the general public.
It is also the means of
establishing a controversy.”

*Brown and Williamson Tobacco
Company, *Smoking and Health Proposal*
(Brown and Williamson document no.
680561778–1786, 1969).

Doubt Is Their Product
How Industry’s Assault
on Science Threatens
Your Health

by David Michaels

Oxford University Press,
Oxford, 2008. 384 pp.

\$27.95, £14.99.

ISBN 9780195300673.

“**The aim:** to sow doubt in the minds of the public, judges, and even regulatory scientists (if they are susceptible) about the scientific basis for greater public health or environmental protections (think global warming) or tort law actions.”

“Because of the tobacco industry’s success in obfuscating, slowing, reducing, and blocking regulatory actions, its approach has been adopted by others, has become institutionalized in presidential administrations, and has been used as talking points by some politicians.”

From a book review in
Science, Sept 5 2008

Doubt Is Their Product
How Industry’s Assault
on Science Threatens
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Oxford, 2008. 384 pp.

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What is a “Think Tank”?

75 years ago:

- Organizations that offered military advice, most notably the *RAND* Corporation, founded originally in 1946 by Douglas Aircraft, to offer research and analysis to the United States armed forces.

Today:

- Corporate interests have found it useful to create “think tanks”, probably because the term suggests the former meaning. For example, *The Advancement of Sound Science Coalition* was formed in the mid 1990’s to dispute research finding a link between second-hand smoke and cancer.

The new “Think Tanks”

Leaked documents show that for many of them

- Goal is *not* to do original research and offer most accurate advice in the public good.
- Goal is to develop arguments in support of their funding sponsors (e.g. Tobacco, Fossil fuels).
- Goal is to *delay government action* by perpetuating doubt.
- Some hire “experts” like Benny Peiser.
- Some have offered to pay scientists to write analyses critical of reports documenting climate changes (e.g. CEI about IPCC reports).

The new “Think Tanks”

Some have published look-alike documents that mimic IPCC or peer-reviewed journal formats, but reach opposite conclusions.

- e.g. Fraser Institute, *Independent Summary for Policy Makers* looks like IPCC *Summary for Policy Makers*.
- Oregon (Seitz) Petition by Frederick Seitz, mimics format of peer-reviewed papers in *Proceedings of the National Academy of Sciences*.

Are scientific results always used wisely?

“About CEI

The Competitive Enterprise Institute is a non-profit public policy organization dedicated to advancing the principles of free enterprise and limited government. We believe that individuals are best helped not by government intervention, but by making their own choices in a free marketplace. Since its founding in 1984, CEI has grown into a \$5,000,000 institution with a team of over 30 policy experts and other staff.”

Source - <http://cei.org/about>

Competitive Enterprise Institute (CEI)

“We are nationally recognized as a leading voice on a broad range of regulatory issues - from free market approaches to environmental policy, to antitrust and technology policy, to risk regulation. But CEI is not a traditional "think tank." We frequently produce groundbreaking research on regulatory issues, but our work does not stop there. It is not enough to simply identify and articulate solutions to public policy problems; it is also necessary to defend and promote those solutions at all phases of the public policy debate.”

“We reach out to the public and the media to ensure that our ideas are heard, work with policymakers to ensure that they are implemented, and, when necessary, take our arguments to court. This "full service approach" to public policy helps make us an effective and powerful force for economic freedom.”

Source - <http://cei.org/about>

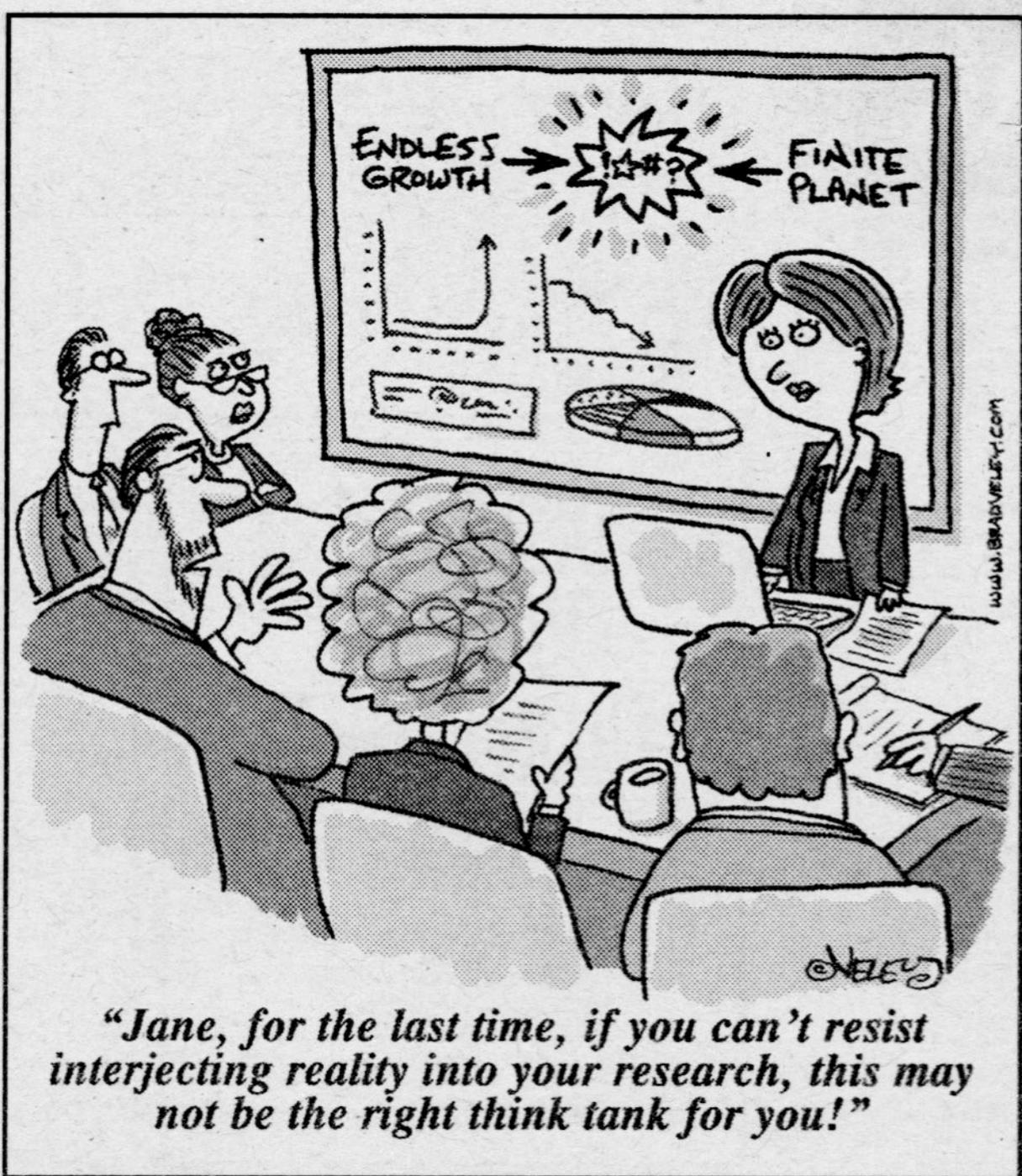
Competitive Enterprise Institute (CEI)

(CEI.org)

The Competitive Enterprise Institute (CEI.org) produced two 60-second television spots focusing on the alleged global warming crisis and the calls by some environmental groups and politicians for reduced energy use. The ads aired in 14 U.S. cities from May 18 to May 28, 2006.

<https://www.youtube.com/watch?v=7sGKvDNdJNA>

http://www.youtube.com/watch?v=Wq_Bj-av3g0&NR=1



February 8, 2018

The Washington Post
Democracy Dies in Darkness

EPA's Scott Pruitt asks whether global warming 'necessarily is a bad thing'

By [Dino Grandoni](#), [Brady Dennis](#) and [Chris Mooney](#) February 8, 2018



Environmental Protection Agency Administrator Scott Pruitt testifies before the Senate Environment Committee in January (Pablo Martinez Monsivais/AP)

Handling the Science Message

The voice of scientists

- ipcc.ch
- RealClimate.org

Pro-science

- deSmogBlog.com
- deltoidblog.blogspot.com
- skepticalscience.com

James Hoggan, 2009. *Climate cover-up. The crusade to deny global warming*. Greystone, Vancouver.

Oreskes&Conway 2010. *Merchants of Doubt*. Bloomsbury, New York

Skeptics and Deniers

- ClimateAudit.org
- globalwarmingheartland.org
- cei.org
- scienceandpublicpolicy.org
- and many more ... (\$\$)
- Bjorn Lomborg (business prof.)
- Fred Singer (physicist, tobacco)
- Sallie Baliunas (astrophysicist)
- Steve McIntyre (mining promoter)
- Rush Limbaugh (talk radio & Pres. Medal of Freedom, Jan 2020)
- Senator James Inhofe (R-OK)
- 150 GOP representatives, in current US Congress
- current White House

Denier voices outweigh scientists on the web

Why is that?

- Which side has more money?

Where do the *scientists* think work is still needed?



- Regional climate prediction
 - Local effects are harder to predict than regional effects.
- Precipitation
 - Precip depends strongly on local temperature and air motion.
- Aerosols
 - How do sulphates, black carbon, sea salt, affect temperature and precip?
- The tree-ring controversy
 - When temperature exceeds some threshold at a few northern sites, tree growth appears to respond differently(?)

Nature Jan 21, 2010

Enduring Climate *Myths*

- Climate models can't provide useful information about the real world.
- Global warming stopped 15 years ago.
- Temperatures were higher in pre-industrial times.
- Temperature records taken in the lower atmosphere indicate that the globe is not warming.
- A few degrees of warming are not a big deal.
- Measured increases in temperature reflect the growth of cities around weather stations rather than global warming.

For explanations showing why these ideas are wrong, see *Nature* Jan 21, 2010, p. 286.

What can we do?

Fixing the communications failure

People's grasp of scientific debates can improve if communicators build on the fact that cultural values influence what and whom we believe, says **Dan Kahan**.

- “People find it disconcerting to believe that behaviour that they find noble is nevertheless detrimental to society, and behaviour that they find base is beneficial to it.”
- “Because accepting such a claim could drive a wedge between them and their peers, they have a strong emotional predisposition to reject it.”

Scientists can't just bombard people with facts.

Nature, Jan 21, 2010, p. 296-297.

What can we do?

Fixing the communications failure

People's grasp of scientific debates can improve if communicators build on the fact that cultural values influence what and whom we believe, says **Dan Kahan**.

- “We need to learn more about how to present information in forms that are agreeable to culturally diverse groups, and how to structure debate so that it avoids cultural polarization.”
- “If we want democratic policy-making to be backed by the best available science, we need a theory of risk communication that takes full account of the effects of culture on our decision- making.”

Nature, Jan 21, 2010, p. 296-297.

Eos, Feb. 2016

Dork Sahagian,
Associate Editor,
JGR-Biogeosciences

The Proof of Our Science Lies in the Telling

Communicating our science for the benefit of society



Aerial views of the damage caused by Hurricane Sandy to the New Jersey coast taken during a search and rescue mission by 1-150 Assault Helicopter Battalion, New Jersey Army National Guard, Oct. 30, 2012. (U.S. Air Force photo by Master Sgt. Mark C. Olsen/Released)

<https://eos.org/editors-vox/the-proof-of-our-science-lies-in-the-telling>

Eos, Feb. 2016

... scientists seek to be accurate and objective, while policy-makers want to be realistic and popular, the media needs to be dramatic and persuasive, and businesses must be accountable and visionary.

These communities have very different goals, means, and measures of success, as well as contrasting and often conflicting operational languages.

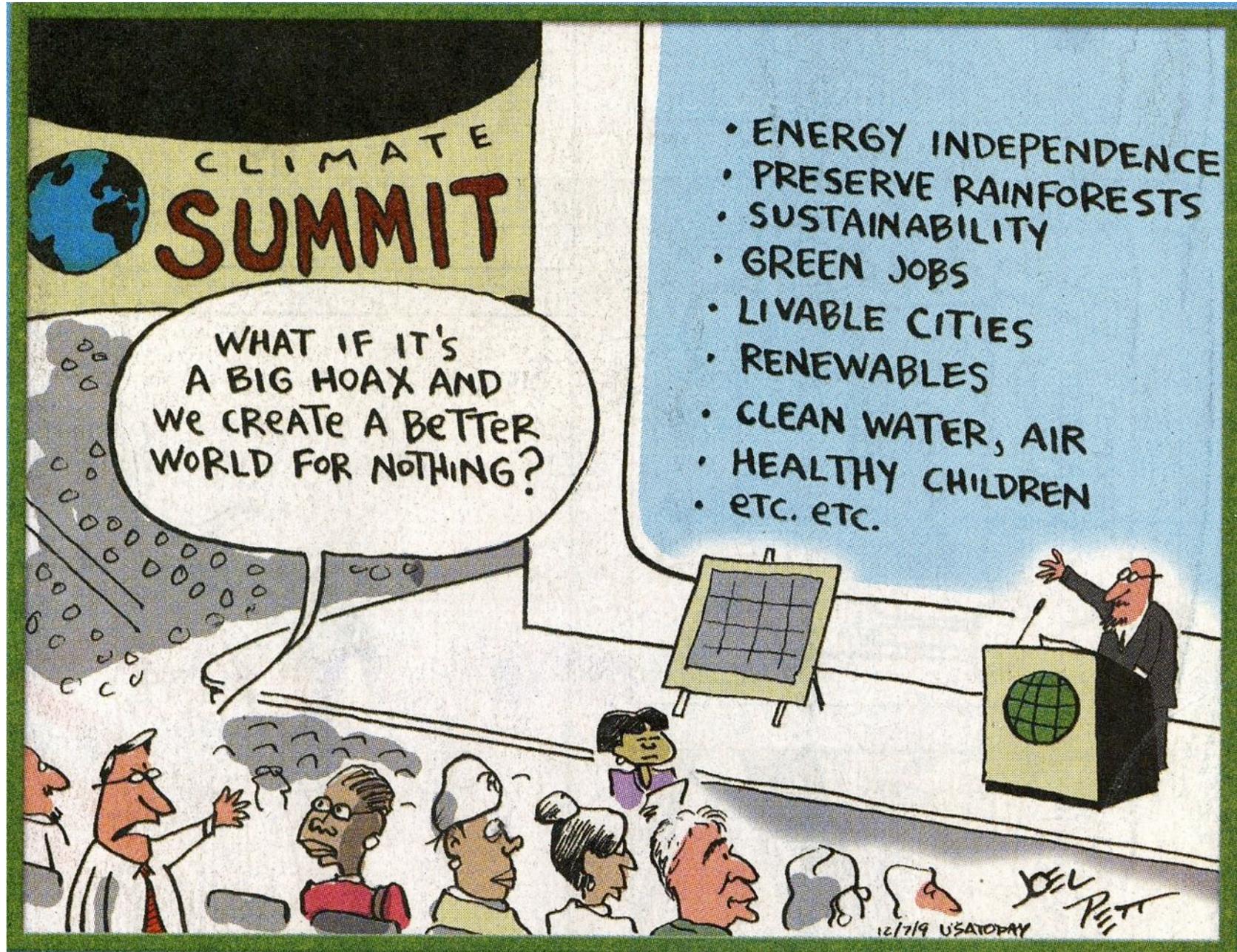
In order for the scientific community to help each of these communities to achieve their goals, including the ones they may have in common (such as leaving a planet for their grandchildren that can support them comfortably by providing a sufficient and sustainable flux of environmental goods and services), we must each couch our discussion in terms that have meaning for the communities we are engaging.

Only then can our science be put to use for the benefit of society, and subsequently be appreciated, supported, and sustained.

What's the message?

- Humans have diverse ways of seeing the world.
- Emotions, vested interests, and preconceptions all matter.
- Presenting scientific results isn't always enough.
- I hope that people who can communicate across cultural divides will find good jobs. 😊

The Great Divide



Let's watch a TV commercial

When congress was debating listing CO₂ as a pollutant that could be regulated by the EPA this TV commercial made by the Competitive Enterprise Institute (CEI).

Let's hear their story.

http://www.youtube.com/watch?v=Wq_Bj-av3g0&NR=1

http://www.youtube.com/watch?v=Wq_Bj-av3g0&NR=1

Group Discussions

Two *Science* papers are referenced in the now-famous YouTube video made by the Competitive Enterprise Institute (CEI)

http://www.youtube.com/watch?v=Wq_Bj-av3g0&NR=1

Johannessen, Ola M., et al. (2005). Recent Ice-Sheet Growth in the Interior of Greenland. *Science* **310**(5750), 1013-1016.

Davis, Curt H., et al. (2005). Snowfall-Driven Growth in East Antarctic Ice Sheet Mitigates Recent Sea-Level Rise. *Science* **308**(5730), 1898-1901.

Although you could now easily find them online by yourself ☺, both papers and the video are posted on the class web site under the READING tab.

https://courses.washington.edu/ess203/RESOURCES/READING/reading_index.shtml

Get your assigned paper, and skim it quickly (Title, Abstract, Conclusions):

- What is the question?
- What is the answer according to the authors?
- Does the video faithfully communicated the scientific conclusions of the peer-reviewed papers?
- Do you think the authors of the *Science* paper would endorse this use of their work? Why or why not?

https://docs.google.com/document/d/1hvTZfJhlekj6GMMz2P5phUF-3TWqJS5BCZxELCXc_J8/edit

