



Climate Change Communications

Developing the Next Generation of Female Environmentalists

Farrah Grant, Geography/Geology

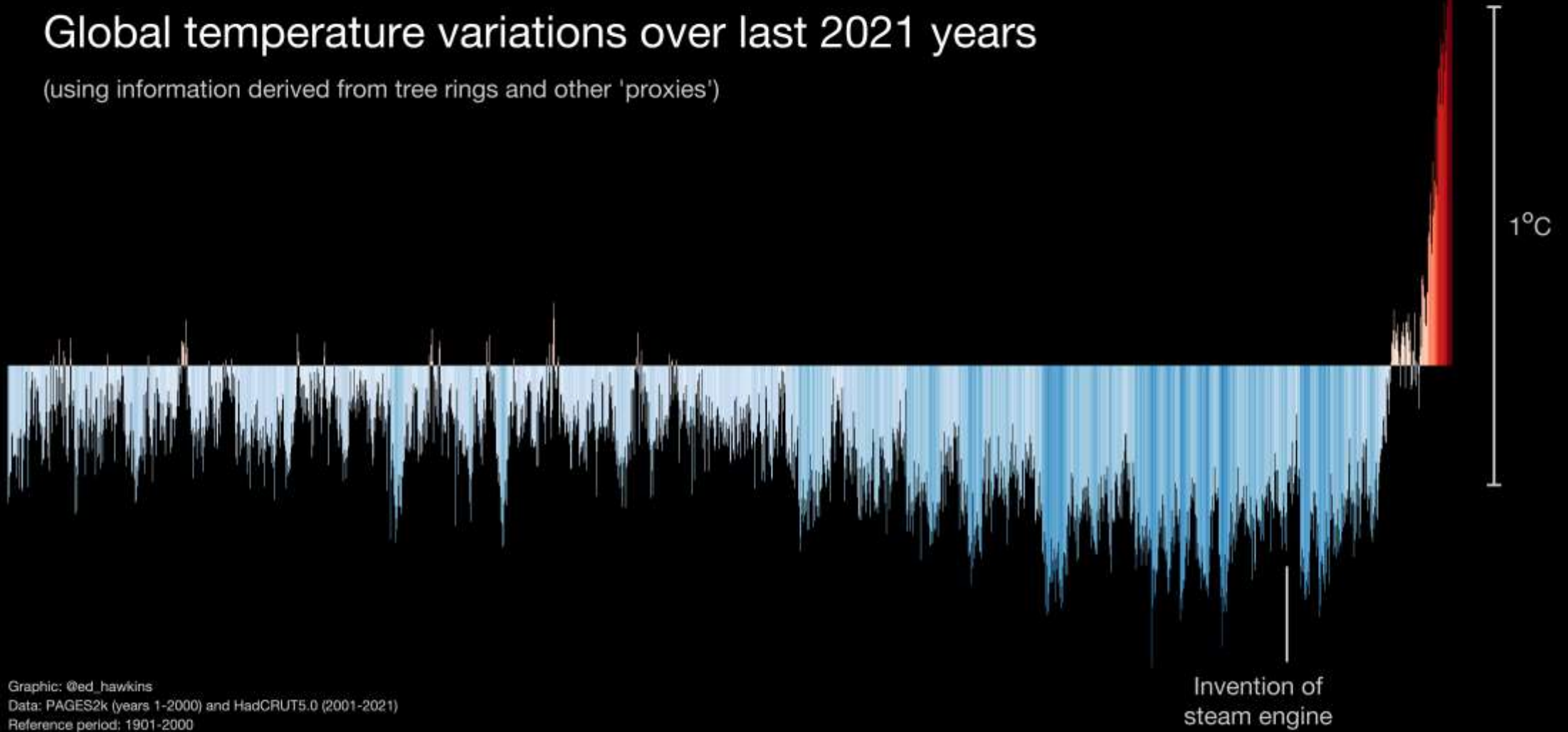
May 10, 2023

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WE ARE HERE ●

Global temperature variations over last 2021 years

(using information derived from tree rings and other 'proxies')



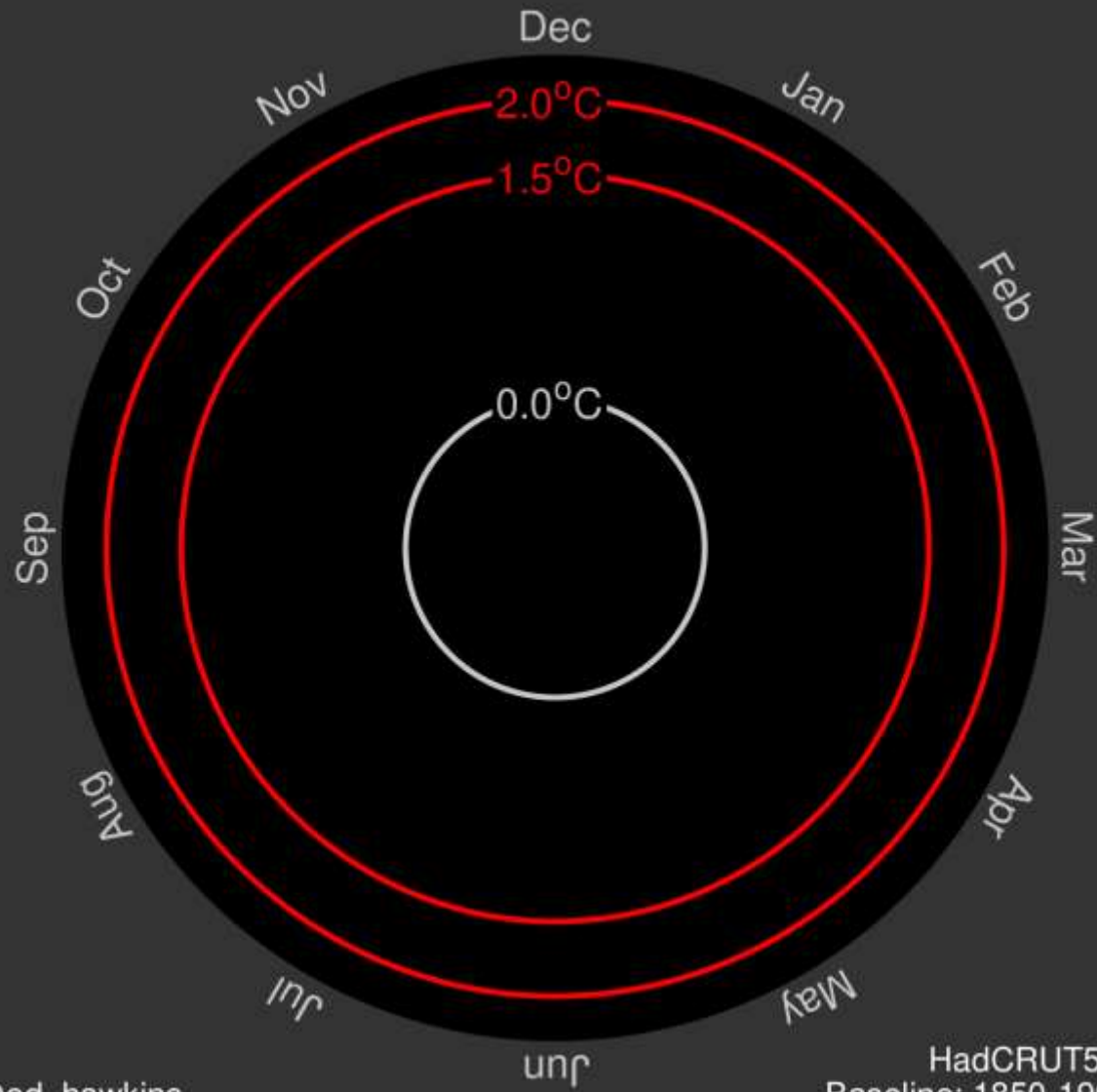
Graphic: @ed_hawkins
Data: PAGES2k (years 1-2000) and HadCRUT5.0 (2001-2021)
Reference period: 1901-2000

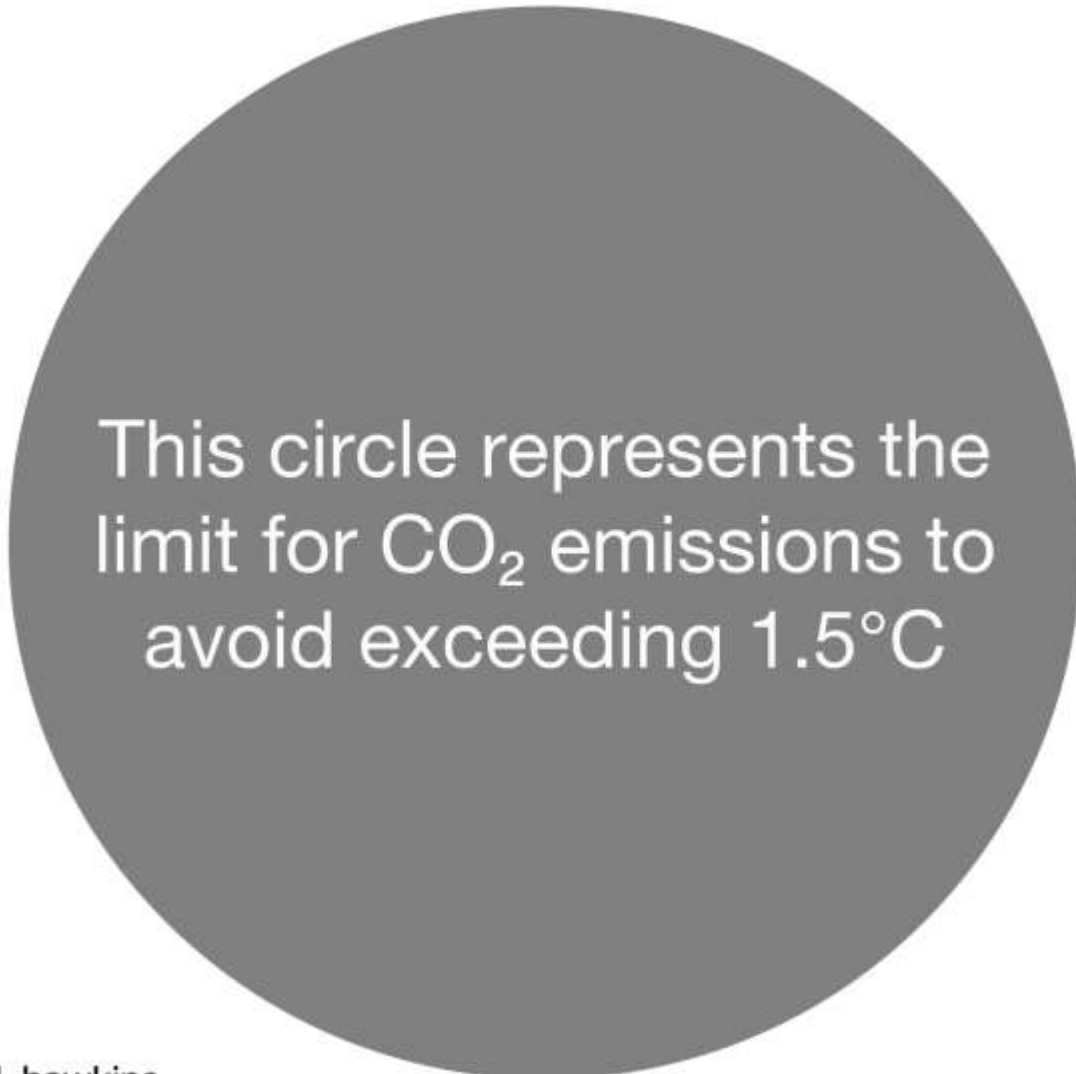


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Global temperature change (1850-2021)





This circle represents the
limit for CO₂ emissions to
avoid exceeding 1.5°C

@ed_hawkins



2021 IPCC Report

- “The alarm bells are deafening, and the evidence is irrefutable: greenhouse-gas emissions from fossil-fuel burning and deforestation are choking our planet and putting billions of people at immediate risk. Global heating is affecting every region on Earth, with many of the changes becoming irreversible.”
 - UN Secretary-General António Guterres

Climate change: IPCC report is 'code red for humanity'

By Matt McGrath
Environment correspondent

9 August | Comments



Human activity is changing the climate in unprecedented and sometimes irreversible ways, a major UN scientific report has said.





Words Matter

CLIMATE CHANGE

The Right Words Are Crucial to Solving Climate Change

Speaking to people's priorities can build the will needed to implement climate solutions

By Susan Joy Hassol on February 1, 2023

- “Transforming the way we talk about climate change can engage people and build the political will needed to implement policies strong enough to confront the crisis with the urgency required.”
- “To inspire people, we need to tell a story not of sacrifice and deprivation but of opportunity and improvement in our lives, our health and our well-being—a story of humans flourishing in a post-fossil-fuel age.”

[Source: Scientific American](#)



Words Matter

- Problems come from different areas:
 - Jargon used by scientists may not be easily understood by the public
 - i.e. “positive feedback” refers to increasing change, but the public and think it means good
 - Disinformation led by the fossil-fuel industry
 - Misrepresent “theory” by saying “climate change is only a theory”

[Source: Scientific American](#)



Words Matter

- The word “natural” can be problematic
 - "In 2021 researchers at Yale University found that Americans associate natural gas with “clean” and methane gas with “pollution”—even though natural gas is almost entirely methane.”

[Source: Scientific American](#)



Ivan Radic, cc-by-2.0



Words Matter

- How we describe climate solutions is important
 - "Terms such as “regulate,” “restrict,” “cut,” “control” and “tax” are unpopular, especially among conservatives. “
 - People may be “more likely to support solutions described with words such as “innovation,” “entrepreneurship,” “ingenuity,” “market-based” and “competing in the global clean energy race.” “
 - U.S. Climate Policy – “Inflation Reduction Act”
 - Many Americans are more concerned about inflation and the economy than climate change

[Source: Scientific American](#)



Climate Disinformation



- “The industry’s own words, as my research found, show companies knew about the risk long before most of the rest of the world.”
- “Exxon had a secretive research program too. In 1981, one of its managers, Roger Cohen, sent an internal memo observing that the company’s long-term business plans could “produce effects which will indeed be catastrophic (at least for a substantial fraction of the earth’s population).””

[Source: The Conversation](#)



Climate Disinformation

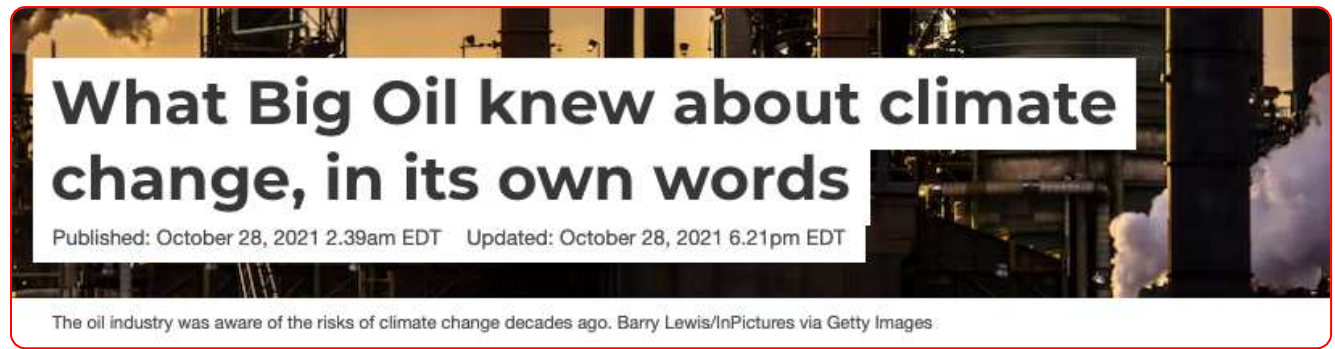


- “In 1986, the Dutch oil company Shell finished an internal report nearly 100 pages long, predicting that global warming from fossil fuels would cause changes that would be “the greatest in recorded history,” including “destructive floods,” abandonment of entire countries and even forced migration around the world. That report was stamped “CONFIDENTIAL” and only brought to light in 2018 by Jelmer Mommers, a Dutch journalist.”

[Source: The Conversation](#)



Climate Disinformation



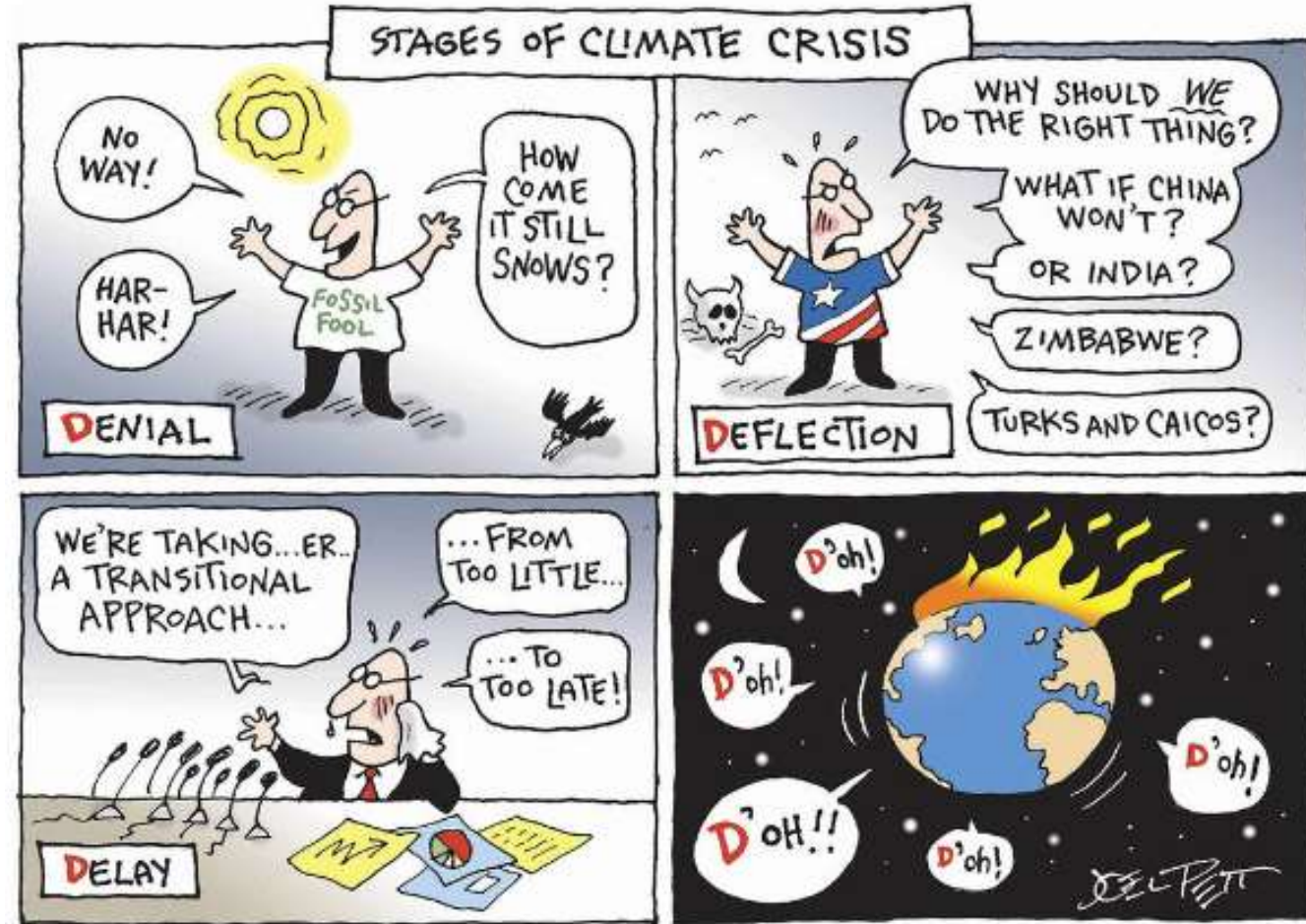
- “...colleagues and I recently found that in the late 1980s, Exxon and other oil companies coordinated a global effort to dispute climate science, block fossil fuel controls and keep their products flowing.”

[Source: The Conversation](#)



Climate Disinformation

- “The forgotten oil ads that told us climate change was nothing”



September 24, 2021 (Joel Pett, Tribune Content Agency)



Climate Disinformation

- “The Power of Big Oil”
PBS Frontline Series
 - [Part 1: Denial](#)
 - [Part 2: Doubt](#)
 - [Part 3: Delay](#)

The logo for the PBS Frontline series, featuring the word "FRONTLINE" in white, bold, sans-serif capital letters on a red rectangular background.

The Power of Big Oil

FRONTLINE examines the fossil fuel industry’s history of casting doubt and delaying action on climate change. This three-part series traces decades of missed opportunities and the ongoing attempts to hold Big Oil to account.

STREAMING NOW



Countering Disinformation

- Get ahead of disinformation by “promoting accurate information and helping people recognize disinformation techniques. ”
- “Researchers have determined that preemptive messages explaining disinformation techniques while highlighting correct information can be effective in preventing misunderstanding.”

[Source: Scientific American](#)



“Pluralistic Ignorance”

- Research published in 2022 in Nature Communications showed that although 66 to 80 percent of Americans support climate change policies, they think only 37 to 43 percent of the population does; **they believe the climate-concerned community is a minority, when in fact it's a majority.**

[Source: Scientific American](#)



“Pluralistic Ignorance”

- “Addressing a collective action problem like climate change requires individuals to recognize the problem as a threat and to engage in coordinated actions that result in major structural and social change. Collective action problems pose a difficult challenge as **individuals are less likely to act when there are others who standby and do nothing**—and this outcome is only more common when the problem at hand is not clearly perceived to be a threat¹. Further, research on threat perception suggests we rely heavily on others’ reactions to recognize complex or non-immediate problems like climate change as a threat^{2,3}. Similarly, perceptions of social norms, including perceiving others’ concern and desire for action, may be key to coordinating collective solutions^{4,5}, including in environmental domains^{6,7}. But **such processes are hampered if people fail to accurately perceive that others are concerned and support taking action.**”

[Source: Nature Communications](#)

Article | [Open Access](#) | Published: 23 August 2022

Americans experience a false social reality by underestimating popular climate policy support by nearly half

[Gregg Sporkman](#) , [Nathan Geiger](#) & [Elke U. Weber](#)

[Nature Communications](#) 13, Article number: 4779 (2022) | [Cite this article](#)

65k Accesses | 1717 Altmetric | [Metrics](#)

Abstract

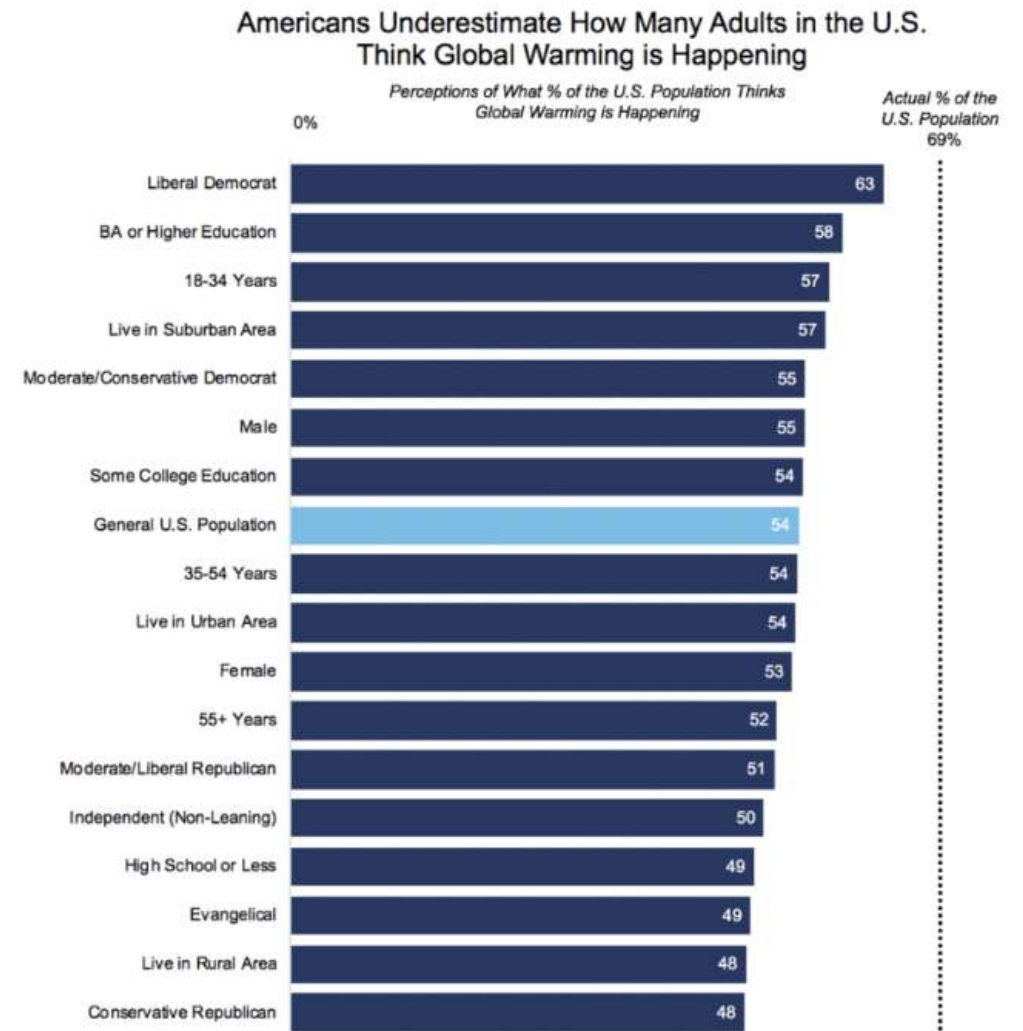
Pluralistic ignorance—a shared misperception of how others think or behave—poses a challenge to collective action on problems like climate change. Using a representative sample of Americans ($N = 6119$), we examine whether Americans accurately perceive national concern about climate change and support for mitigating policies. We find a form of pluralistic ignorance that we describe as a *false social reality*: a near universal perception of public opinion that is the opposite of true public sentiment. Specifically, 80–90% of Americans underestimate the prevalence of support for major climate change mitigation policies and climate concern. While 66–80% Americans support these policies, Americans estimate the prevalence to only be between 37–43% on average. Thus, supporters of climate policies outnumber opponents two to one, while Americans falsely perceive nearly the opposite to be true. Further, Americans in every state and every assessed demographic underestimate support across all policies tested. Preliminary evidence suggests three sources of these misperceptions: (i) consistent with a false consensus effect, respondents who support these policies less (conservatives) underestimate support by a greater degree; controlling for one’s own personal politics, (ii) exposure to more conservative local norms and (iii) consuming conservative news correspond to greater misperceptions.



“Pluralistic Ignorance”

- “...talk about climate change more with family, friends, co-workers, and leaders in the public and private sectors. **Each of us can be part of this solution.**”

Source: [Scientific American](#)



To the best of your knowledge, what percentage of adults in the United States (18 years or older) think that global warming is happening? 0 – 100% with a “Don’t know” option

April, 2019. Base: U.S. adults who responded with a percentage (n=1,055). Estimates are rounded to the nearest whole percentage point.





Dr. Katharine Hayhoe

- Atmospheric scientist who specializes in science communication
 - focuses a lot on the faith community
- Newsletter:
 - Gives the good news, not so good news, and what you can do
 - Sign up [Here](#)

The good, the science, and what you can do

GOOD NEWS

Scotland exports more than 1.2 billion bottles of whiskey each year. To turn barley, yeast, and water into a litre of scotch creates a huge amount of by-products. However, a company called Celtic Renewables is taking that waste and turning it into biobutanol, a renewable fuel that can be mixed with gasoline.

They've constructed Scotland's first biorefinery that will produce 1 million liters of biofuel annually when it opens later this year. Read more [here](#).



NOT-SO-GOOD NEWS



As animal habitats shift in a warmer world, it's estimated there will be some 4,000 viral spillovers between species by 2070. Bats - believed to be the source of the virus that caused the COVID-19 pandemic - will be responsible for many of these spillover events.

"This work provides us with more incontrovertible evidence that the coming decades will not only be hotter, but sicker," said Gregory Albery, a disease ecologist who co-authored [the study](#).

WHAT YOU CAN DO

Try a plant-based meal this week! Click [here](#) for a black bean, rice, and vegetable tacos recipe. This family-friendly meal is perfect for the summer and so good, you won't even miss the meat.

Fun Facts:

- Skipping one serving of beef once a week for a year saves the equivalent emissions to driving 348 miles in a car
- Each meatless meal saves 133 gallons of water



AND OF COURSE - TALK ABOUT IT!

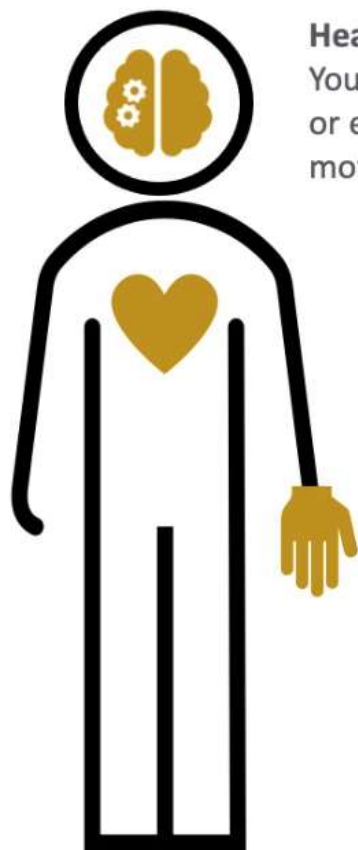
DOWNLOAD: SAVING US
Book Discussion Question
Guide

WATCH: My conversation
with the University of
Waterloo

Screenshot



Dr. Katharine Hayhoe



Source: Hayhoe (2023)

Head

You know climate change is happening, but you think its effects are in the future or elsewhere in the world. You may feel some concern, but not enough to motivate action.

Heart

You know how climate change is negatively impacting: (1) issues you are care about, (2) in your community, (3) in the present. This triggers strong enough concern to motivate action.

Hands

You know feasible solutions to address climate change. This allows your concern to be channeled into action.

Design: Chelsea Hicks-Webster

[LINK](#)



Dr. Katharine Hayhoe

4 Tips for Climate Conversations that Motivate Action



Discuss local impacts



Discuss present (not future) impacts



Discuss issues the listener cares about



Share solutions

Source: Hayhoe (2023)

Design: Chelsea Hicks-Webster

[LINK](#)



Words Matter

- There is a growing sense that it is too late to act, which could be a result of the media's "focus on disasters rather than solutions, which can make many people feel a sense of hopelessness or fatalism."

[Source: Scientific American](#)

- "A 2021 study in the Lancet revealed that young people are especially vulnerable to these feelings, with 84 percent saying they're worried and 75 percent saying they think the future is frightening. **If people are convinced we're doomed—that there's nothing we can do—why would they bother trying?"**



Words Matter

- “It is imperative that we clearly communicate that **it is not too late to avoid the worst outcomes.** We must act urgently because every delay means a hotter and costlier future. **Every fraction of a degree matters, and every action matters.**”

Source: Scientific American

- “When we start to act, hope is everywhere.”

- Greta Thunberg



Words Matter

- “...tell stories that illustrate the many benefits we will reap from the clean energy transition and from protecting nature. **We need to paint a picture of that better world**—powered by renewable energy, with friendlier, more walkable cities—and show how and where the improvements are already unfolding. It’s psychologically important for people to know that **we’re not just starting; we’re already on our way.**”

[Source: Scientific American](#)





WE NEEDED HOPE

“It took me a long time to learn that being miserable does not alleviate the world’s misery”
– Hannah Tennant-Moore





Doomism is the same
as denialism.

I argue for defiant
optimism.



A Need for the Humanities

- “We need artists, writers, poets, and filmmakers: they can dismantle the walls of numbness.”
 - Climate scientist Joelle Gergis, lead author of the 2022 IPCC Report





Developing the Next Generation of Female Environmentalists

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Words Matter

- “The next time you want to talk with someone about climate disruption, consider what they care about and use that as an entry point.
- As with most good communication, **success depends on the ways we connect on values, build trust and find common ground.”**

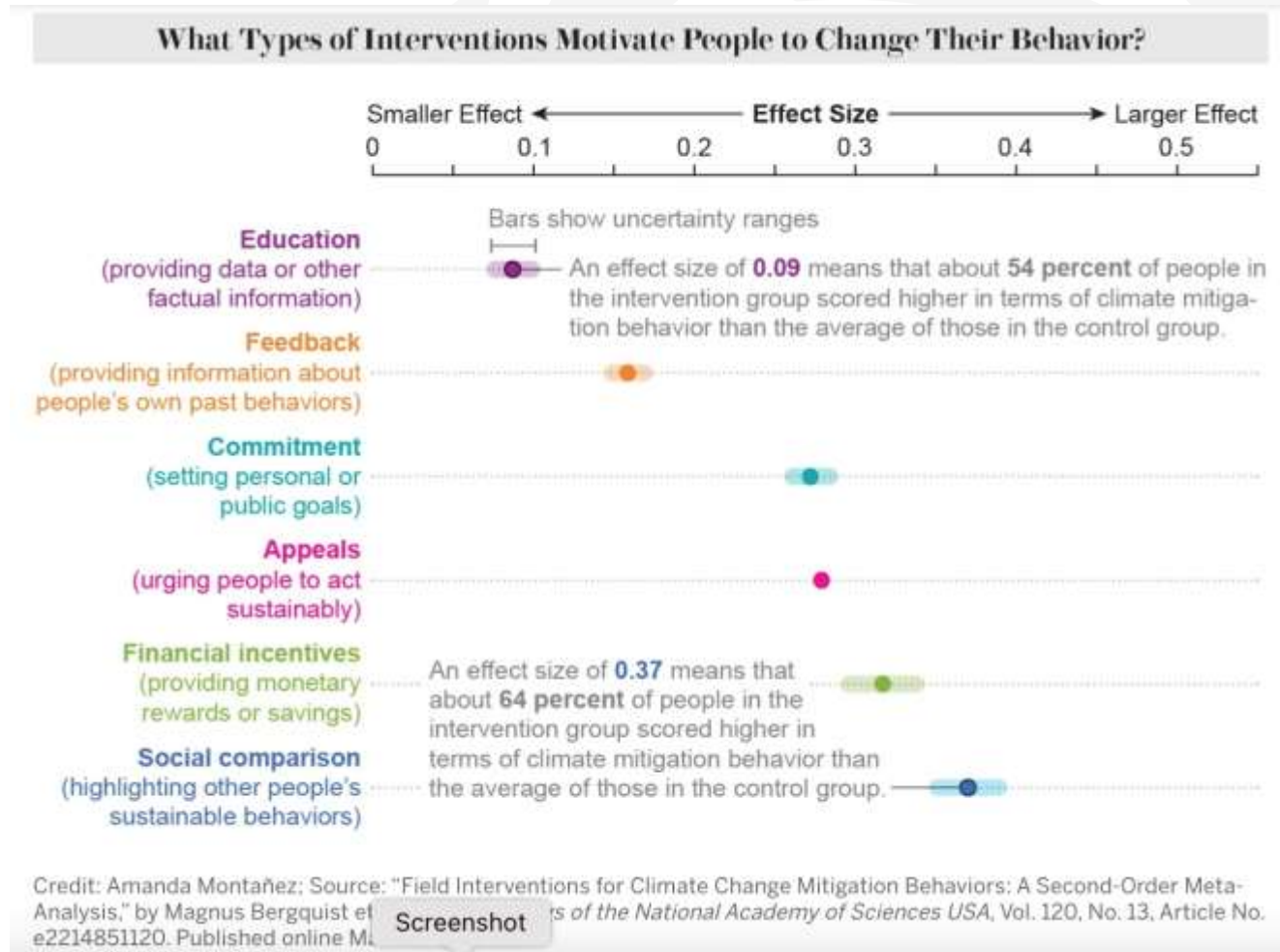
[Source: Scientific American](#)



Climate Change Advocacy

- “Though education can be necessary to make the public aware of a problem in the first place, “we find over and over again that **it’s not very effective**” at actually changing behaviors, says study co-author Magnus Bergquist, a psychologist at the University of Gothenburg in Sweden.”

[Source: Scientific American](#)

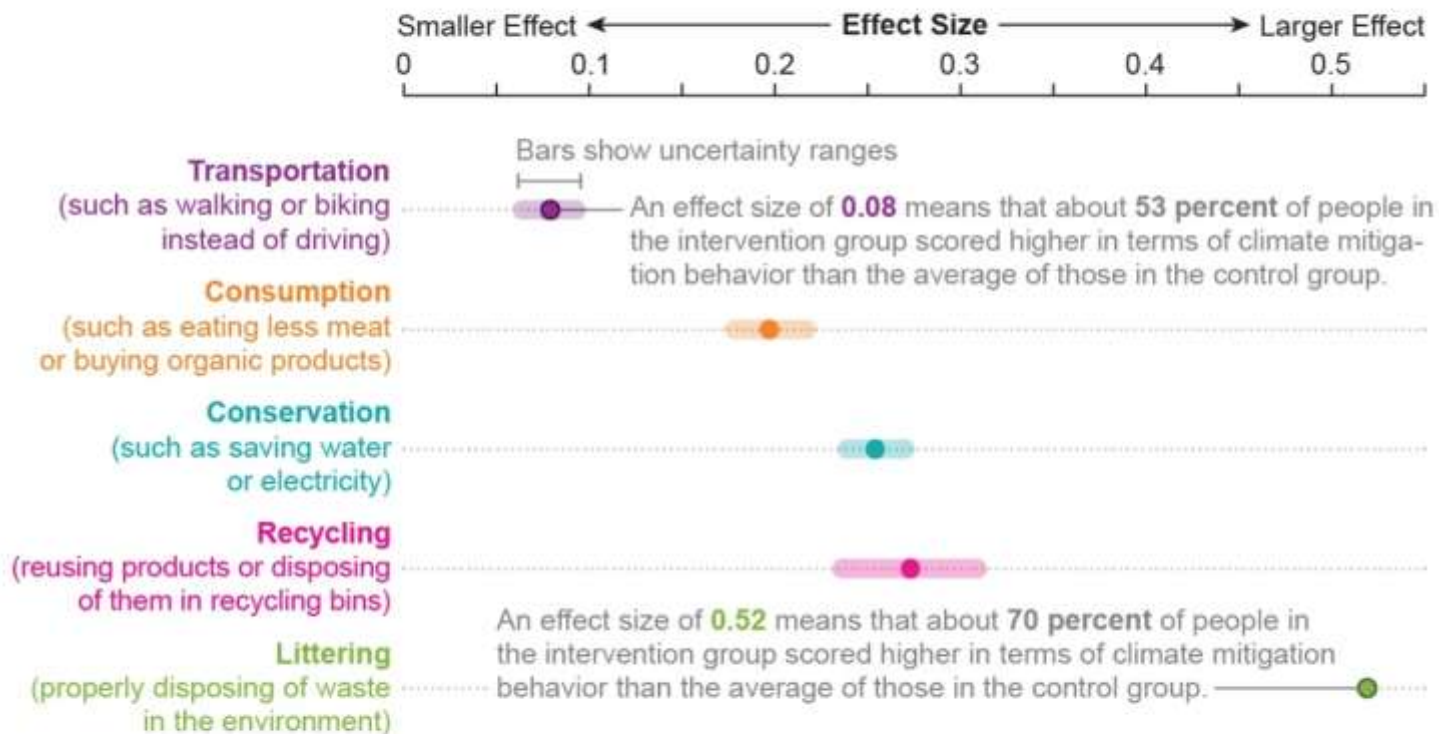


Climate Change Advocacy

- “the new research found **social pressure had the strongest effect on behavioral change.**”
- “This social contagion is why it’s **so important to talk about the climate actions you take.**”

[Source: Scientific American](#)

What Behaviors Are People Likely to Change?



Credit: Amanda Montañez; Source: "Field Interventions for Climate Change Mitigation Behaviors: A Second-Order Meta-Analysis," by Magnus Bergquist et al., in *Proceedings of the National Academy of Sciences USA*, Vol. 120, No. 13, Article No. e2214851120. Published online March 21, 2023



Climate Change Advocacy



Climate Writing Lesson Plans:
Poetry, Flash Fiction, Advocacy

- [Writing Lesson Plans](#)
- [Webinar: How Climate Writing in the Classroom Fosters Meaningful Agency, Advocacy, and Hope](#)



Knowledge IS Powerful!

The role of climate change education on individual lifetime carbon emissions

Eugene C. Cordero , Diana Centeno, Anne Marie Todd

Published: February 4, 2020 • <https://doi.org/10.1371/journal.pone.0206266>

Article

Authors

Metrics

Comments

Media Coverage



Abstract

1. Introduction
2. Methods
3. Course design
4. Results
5. Educational approach
6. Potential role of education on carbon

Abstract

Strategies to mitigate climate change often center on clean technologies, such as electric vehicles and solar panels, while the mitigation potential of a quality educational experience is rarely discussed. In this paper, we investigate the long-term impact that an intensive one-year university course had on individual carbon emissions by surveying students at least five years after having taken the course. A majority of course graduates reported pro-environmental decisions (i.e., type of car to buy, food choices) that they attributed at least in part to experiences gained in the course. Furthermore, our carbon footprint analysis suggests that for the average course graduate, these decisions reduced their individual carbon emissions by 2.86 tons of CO₂ per year. Surveys and focus group interviews identify that course graduates



Questions & Discussion



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