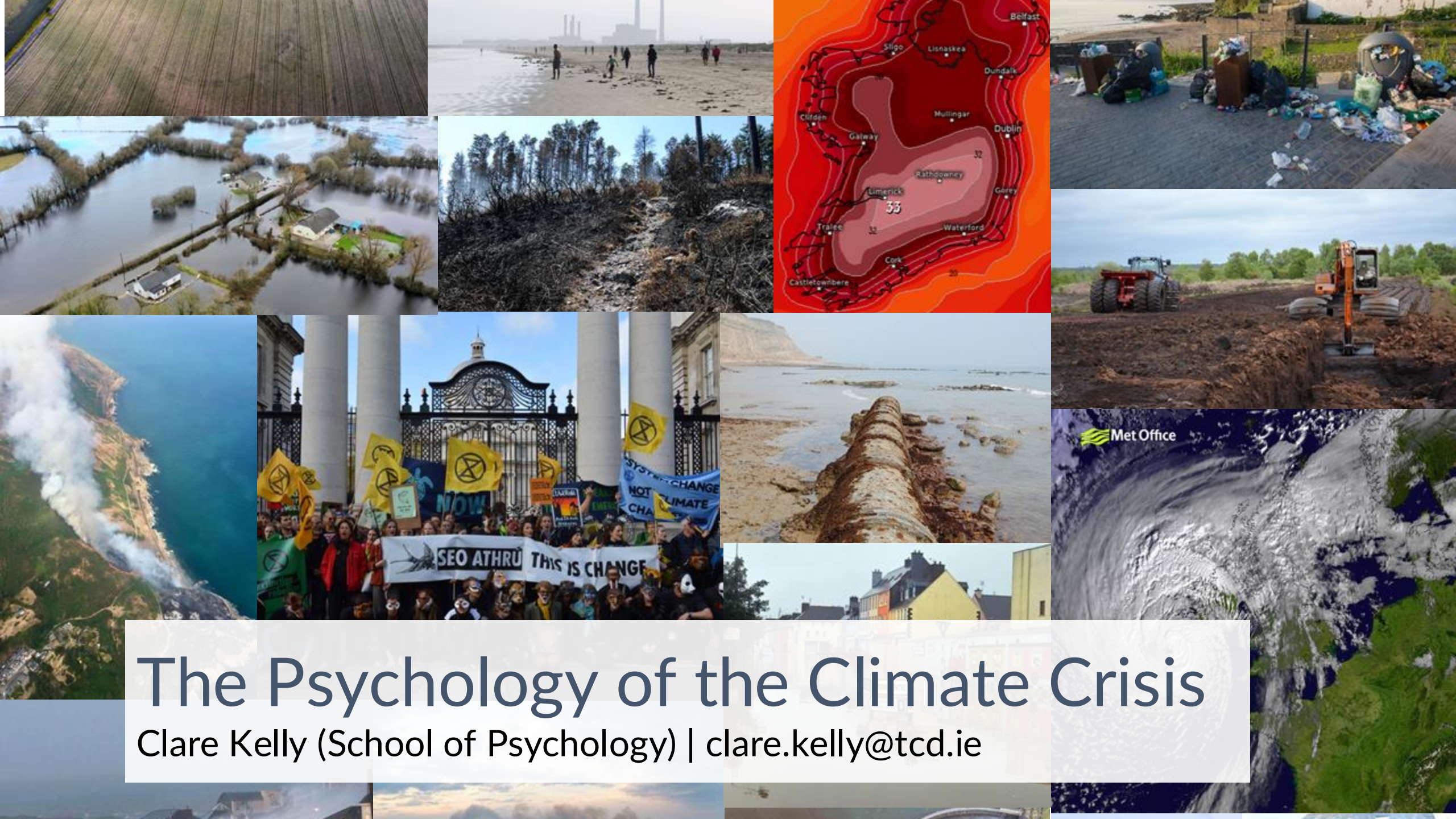


The Psychology of the Climate Crisis

Clare Kelly (School of Psychology) | clare.kelly@tcd.ie

Overview

01 Planetary Crisis 101

02 What do we need to do?

03 Climate emotions

04 Attitude-behaviour gap

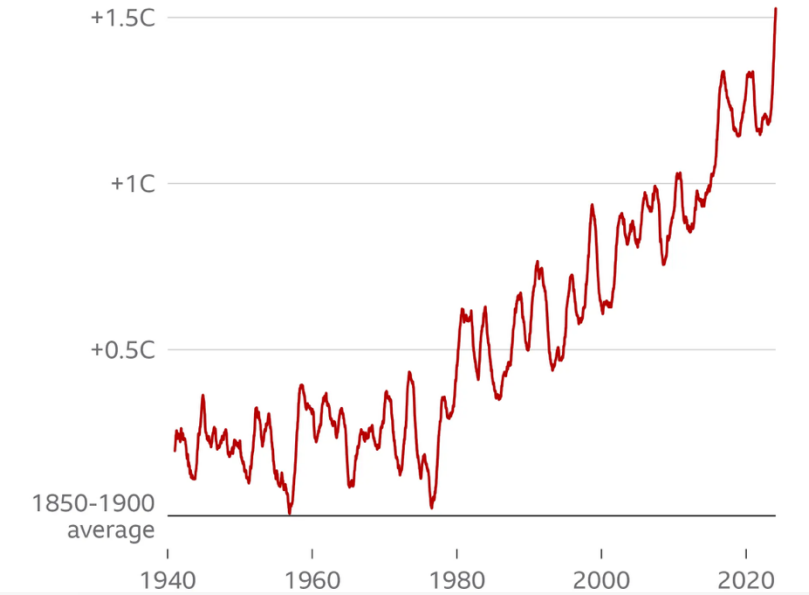
05 Human nature?

06 Taking action

2024

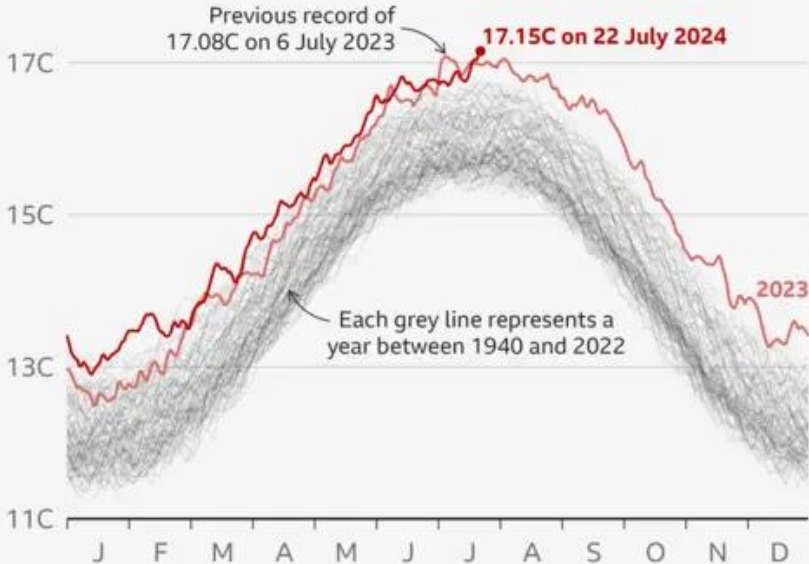
Temperature rises pass 1.5C for full year

Average global air temperature compared with pre-industrial levels, running average of 365 days



Global temperatures reach new daily record

Daily global average air temperature, 1940-2024



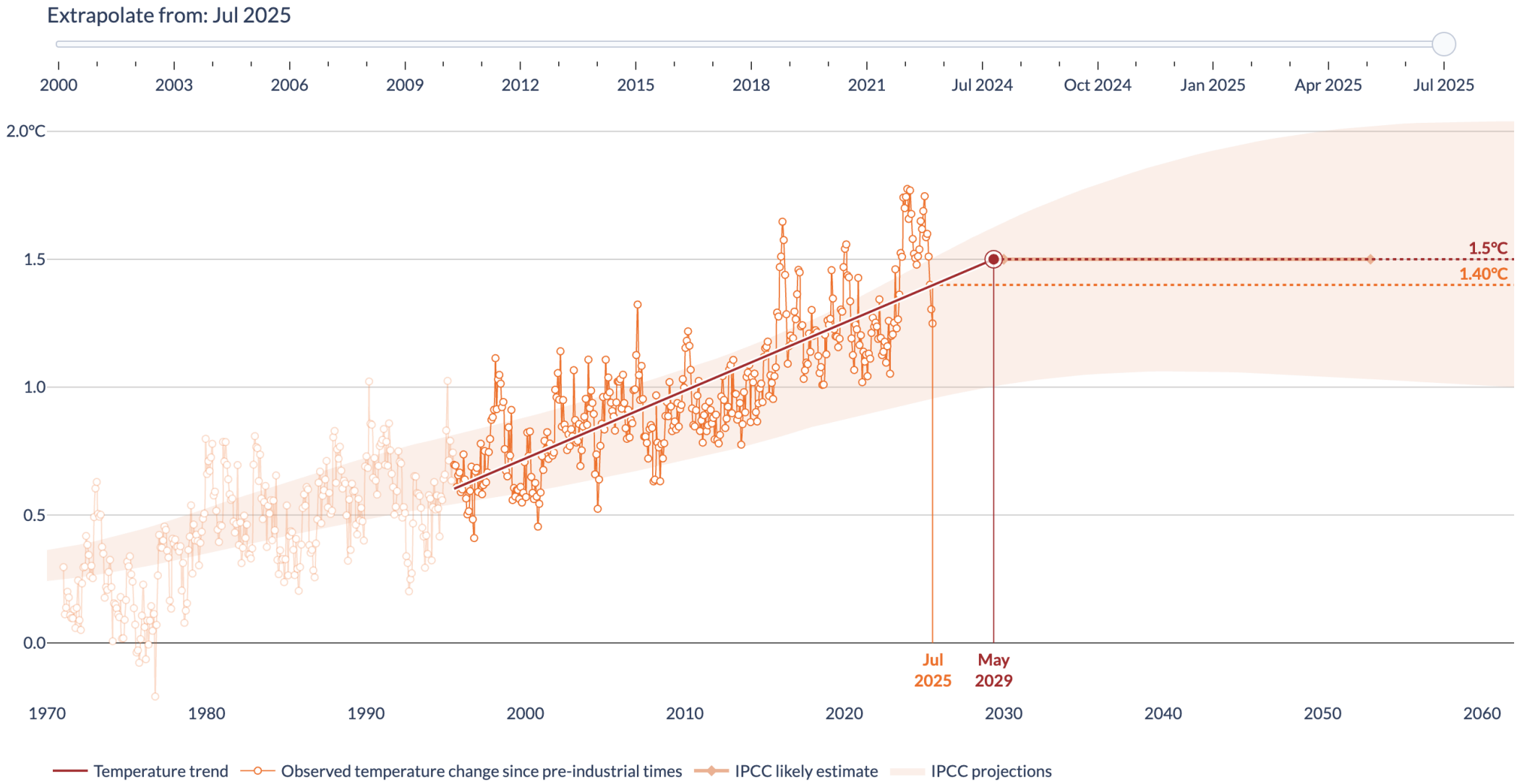
WORLD

Natural disasters have caused more than $131 billion in losses so far in 2025

By **Tracy J. Wholf**
July 29, 2025 / 5:00 AM EDT / CBS News

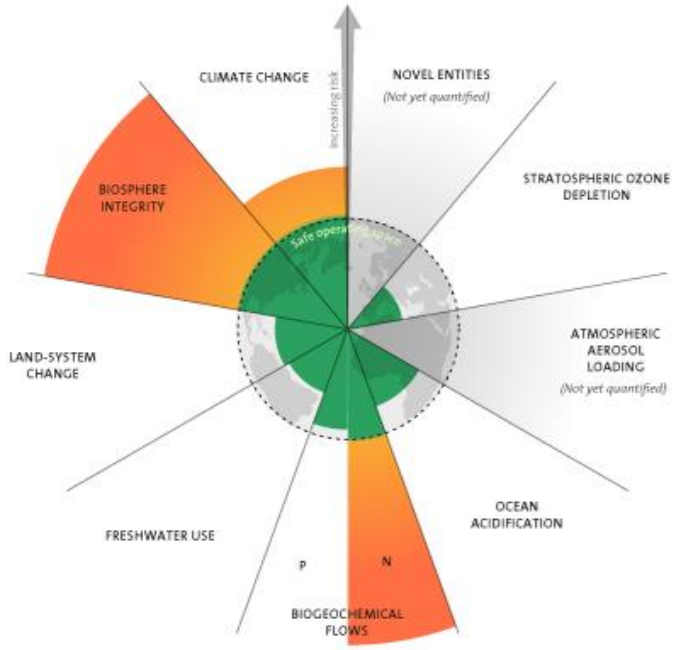
Global warming reached an estimated **1.40°C** in **July 2025**.

If the 30-year warming trend leading up to then continued, global warming would reach **1.5°C** by **May 2029**.



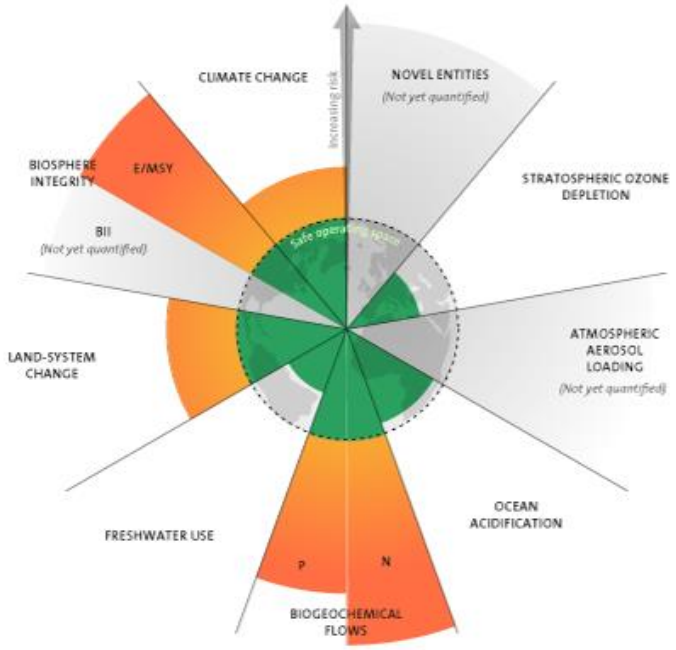
https://climate.copernicus.eu/

2009



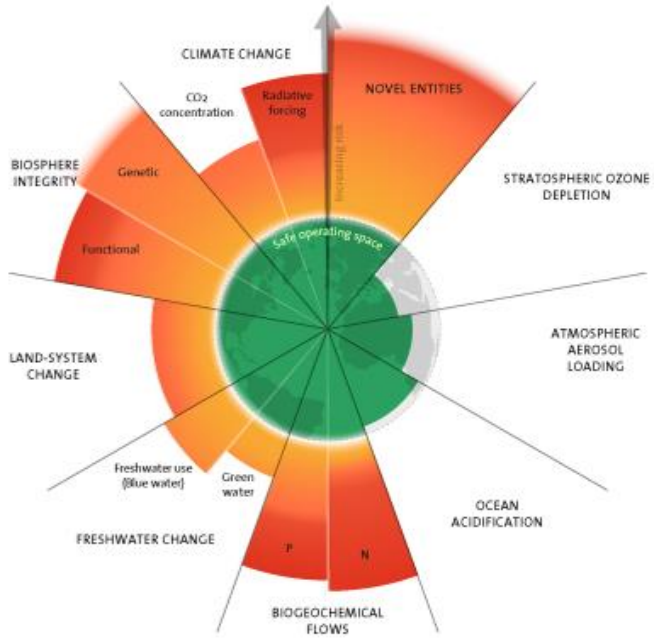
3 boundaries crossed

2015



4 boundaries crossed

2023

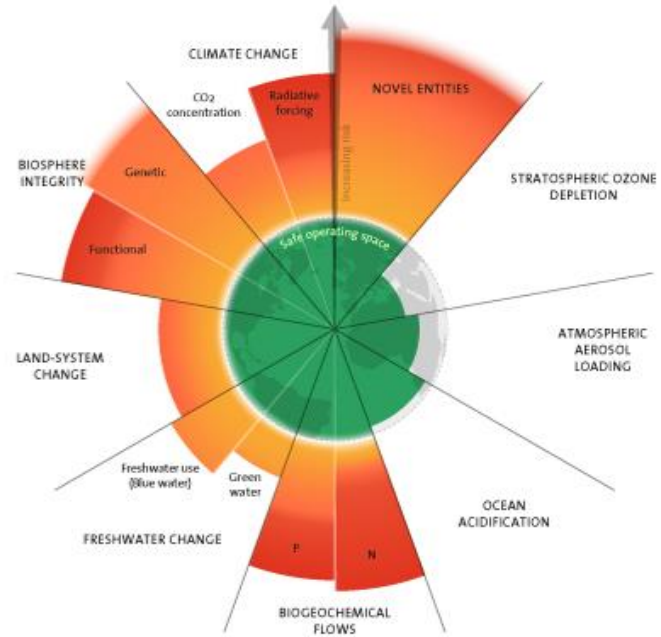


6 boundaries crossed

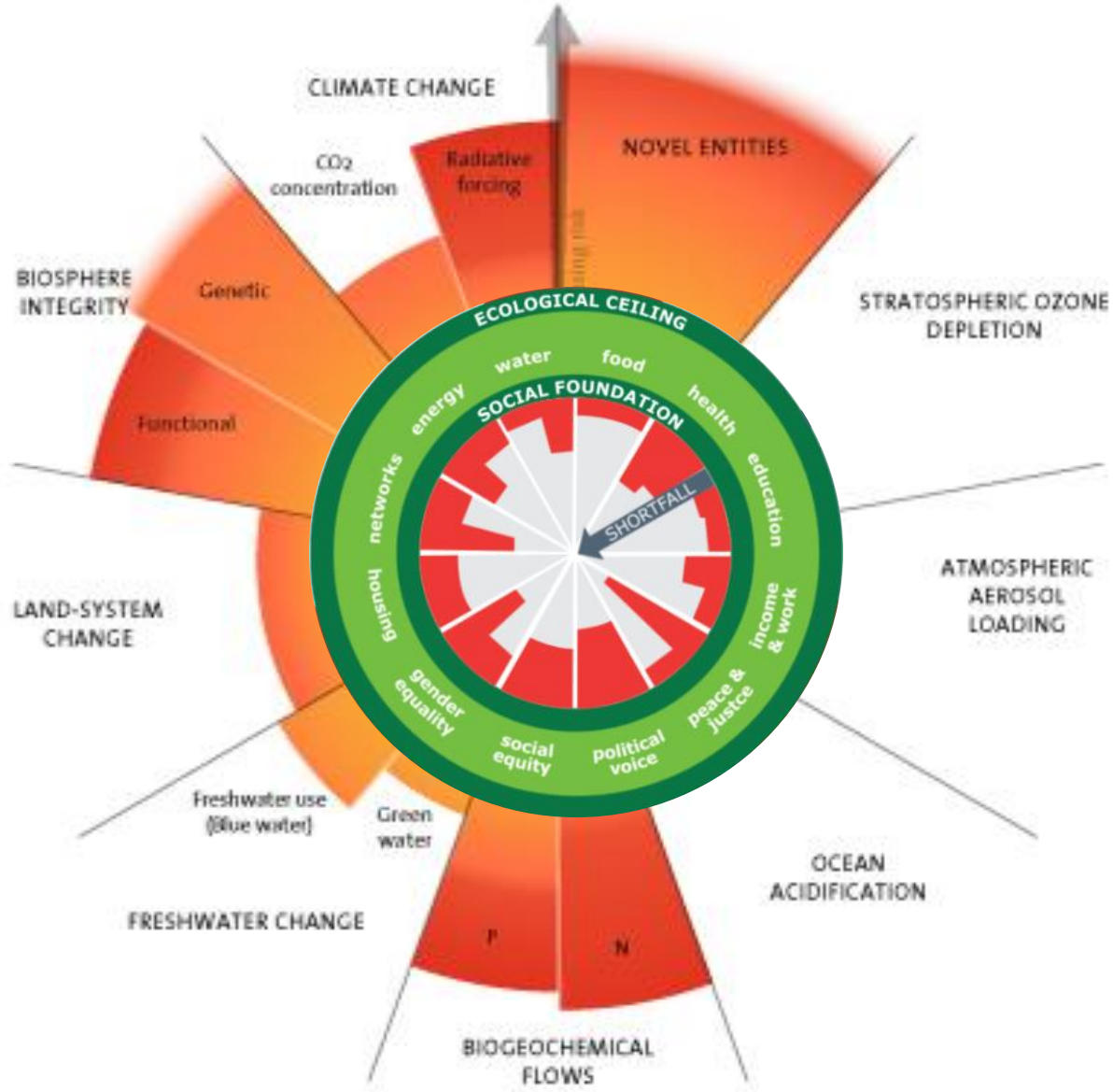
Planetary Boundaries

https://www.stockholmresilience.org/research/planetary-boundaries.html;
Richardson et al., 2023 https://www.science.org/doi/10.1126/sciadv.adh2458
https://www.ted.com/talks/johan_rockstrom_the_tipping_points_of_climate_change_and_where_we_stand?subtitle=en

2023

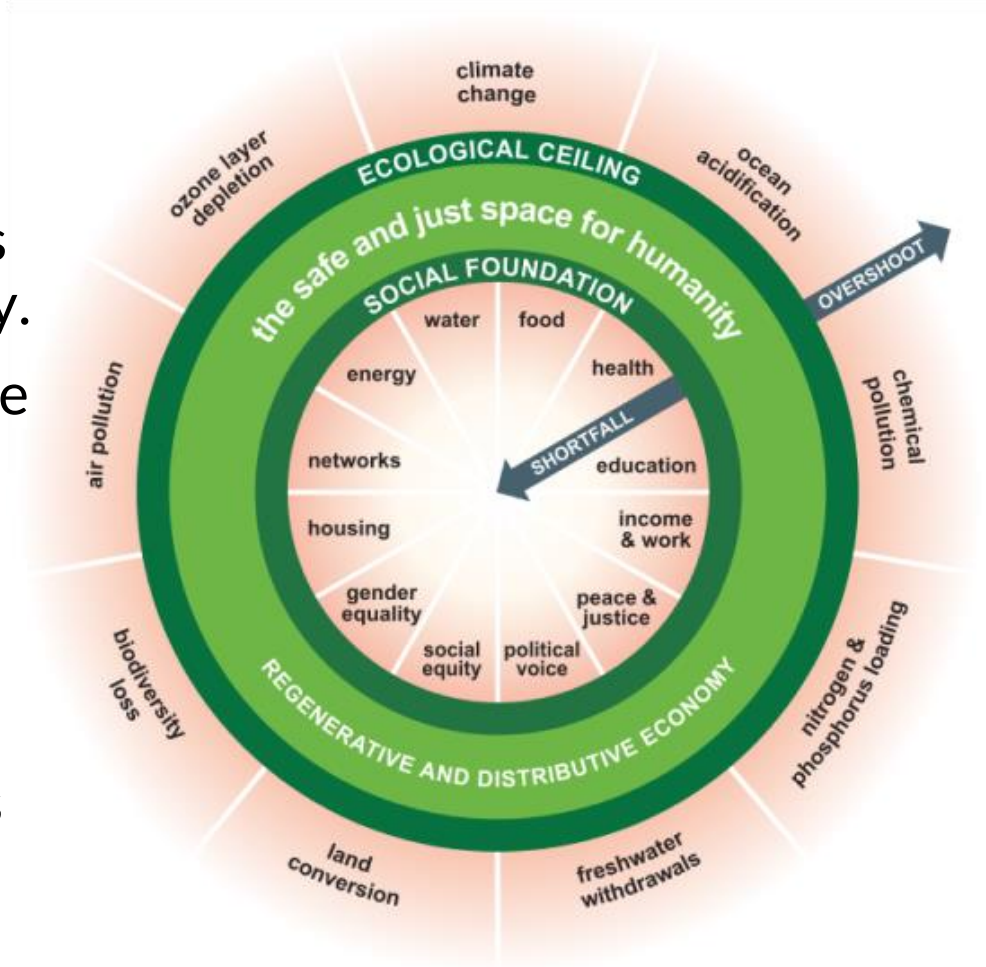


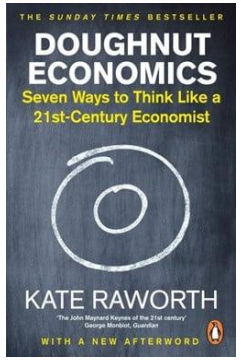
6 boundaries crossed


CLIMATE CHANGE
CO_2 concentration
Radiative forcing
NOVEL ENTITIES
STRATOSPHERIC OZONE DEPLETION
ATMOSPHERIC AEROSOL LOADING
OCEAN ACIDIFICATION
BIOGEOCHEMICAL FLOWS
P
N
FRESHWATER CHANGE
Freshwater use (Blue water)
Green water
LAND-SYSTEM CHANGE
BIOSPHERE INTEGRITY
Genetic
Functional
ECOLOGICAL CEILING
SOCIAL FOUNDATION
SHORTFALL
water
food
health
education
income & work
peace & justce
political voice
social equity
gender equality
housing
networks
energy

Doughnut Economics

- Kate Raworth: Global economic development has improved life and wellbeing for much of humanity.
- But it has also driven unsustainable increase in the use of the Earth's resource, mainly driven by the Global North.
- The drive for infinite economic growth on a finite planet has put our planet under unprecedented pressure, exceeding safe boundaries on life-sustaining planetary systems, while many millions still live in deprivation and suffer the greatest effects of the planetary crisis.
- **GDP growth is no longer a good measure of humanity's progress.**
- We need a **new model that recognises a need for dynamic balance.**

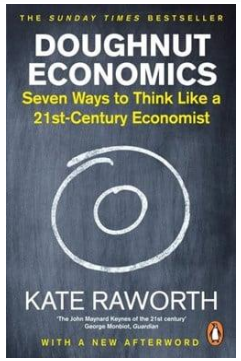




We need new images & new stories of how humanity can thrive in balance

The goal of the Doughnut is to visually communicate what humanity's goal must be: **to meet the needs of all within the means of the living planet.**

This means leaving no one falling short on the essentials of life while not overshooting the ecological ceiling.



https://www.ted.com/talks/kate_raworth_a_healthy_economy_should_be_designed_to_thrive_not_grow?subtitle=en

https://doughnuteconomics.org/

Post-growth Solutions

Consumption **in high-income nations** must return to sustainable levels – a transition to a **post-capitalist eco-socialist economy**. Global South nations need to grow so they can meet citizens' social needs.

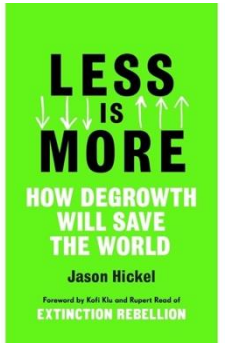
How? **By changing our measure of a country's well being from GDP growth to other indicators that capture whether human needs are being met.**

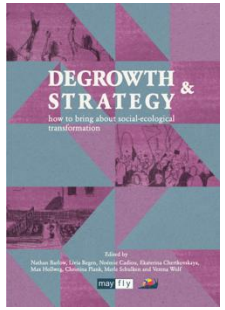
Scale down extraction, production, & waste in ecologically destructive sectors of the economy (e.g., SUV production, fast fashion) while scaling up decarbonization

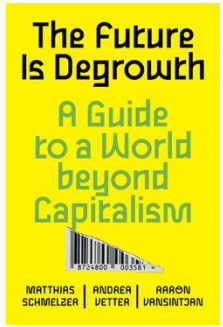
This **can be done while improving people's lives**:

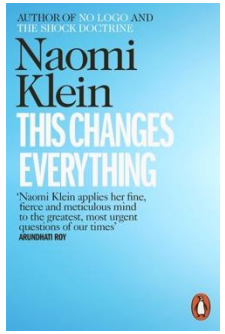
- Green jobs guarantee; move to a 4-day working week
- Decommodify public goods (power, housing, transport etc.) to provide universal public services
- Reduce inequality - end extreme wealth; tax corporations
- Extend democratic decision-making to allow for real political participation
- Cut advertising; Shift from ownership to usership
- End planned obsolescence; right to repair
- Nurture a focus on sufficiency; end food waste

https://degrowth.info/

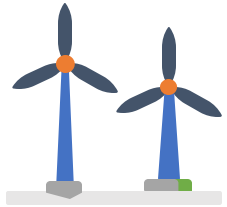








Climate mitigation = health promotion

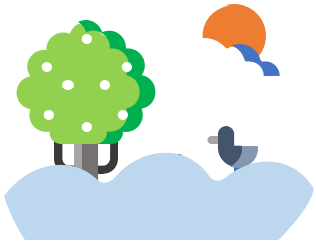


DECARBONISE:
No more dirty energy

Healthy active transport

Plant-based diets; food security

Community and solidarity



More green & blue space

Identify & support vulnerable populations

See 2024 Lancet Countdown Report: https://www-sciencedirect-com.elib.tcd.ie/science/article/pii/S0140673624018221

Climate justice means that those **least responsible** for the climate crisis **are suffering the most from its effects.**

This is not fair – it is unjust.

Addressing the climate crisis requires more than a technical effort to cut emissions. It requires **climate justice -** transformative change that addresses issues of human rights and profound economic and social inequality **both within and between countries.**

WHAT CAN I DO?

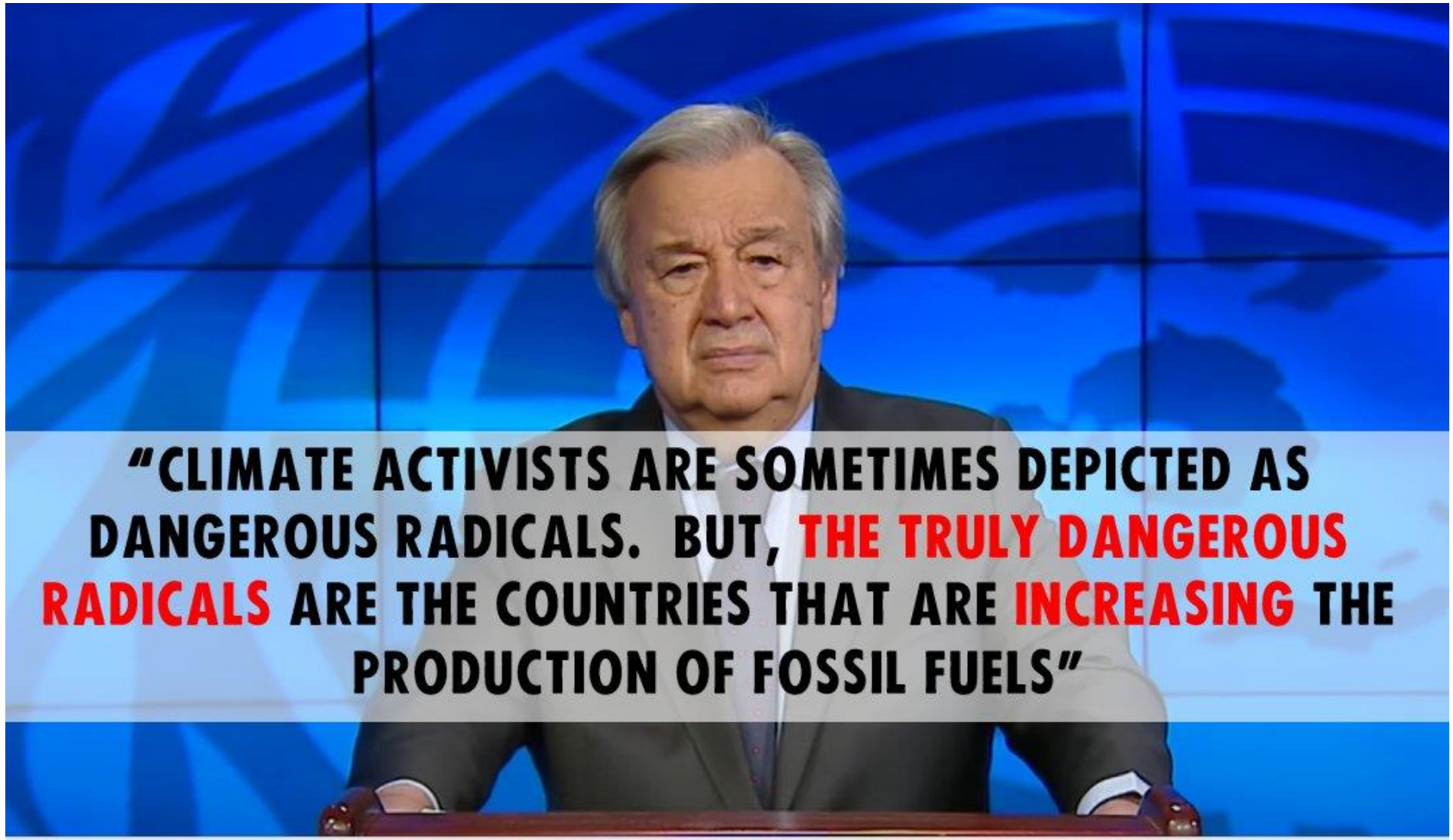
Bill Mc Kibben: The answer to the question, **"What's the most important thing I as an individual can do?"**

is: **STOP BEING AN INDIVIDUAL**

Join with others: action group, community group, sustainability committee in sports club, tidy towns, book club, etc.

Make your voice heard by those in power: write/call your TDs and Counsellors to tell them you care and you want meaningful action

SOURCE: https://www.nrdc.org/stories/unlikely-takedown-keystone-xl


"CLIMATE ACTIVISTS ARE SOMETIMES DEPICTED AS DANGEROUS RADICALS. BUT, THE TRULY DANGEROUS RADICALS ARE THE COUNTRIES THAT ARE INCREASING THE PRODUCTION OF FOSSIL FUELS"


your BODY your LIFE your CHOICE
CORK PRO - CHOICE
REPEAL
NO MAN CAN DENY ME MY RIGHTS MY CHOICE.
REPEAL
REPEAL THE 8TH
Rise and Repeal
Abortion
RIGHTS CAMPAIGN

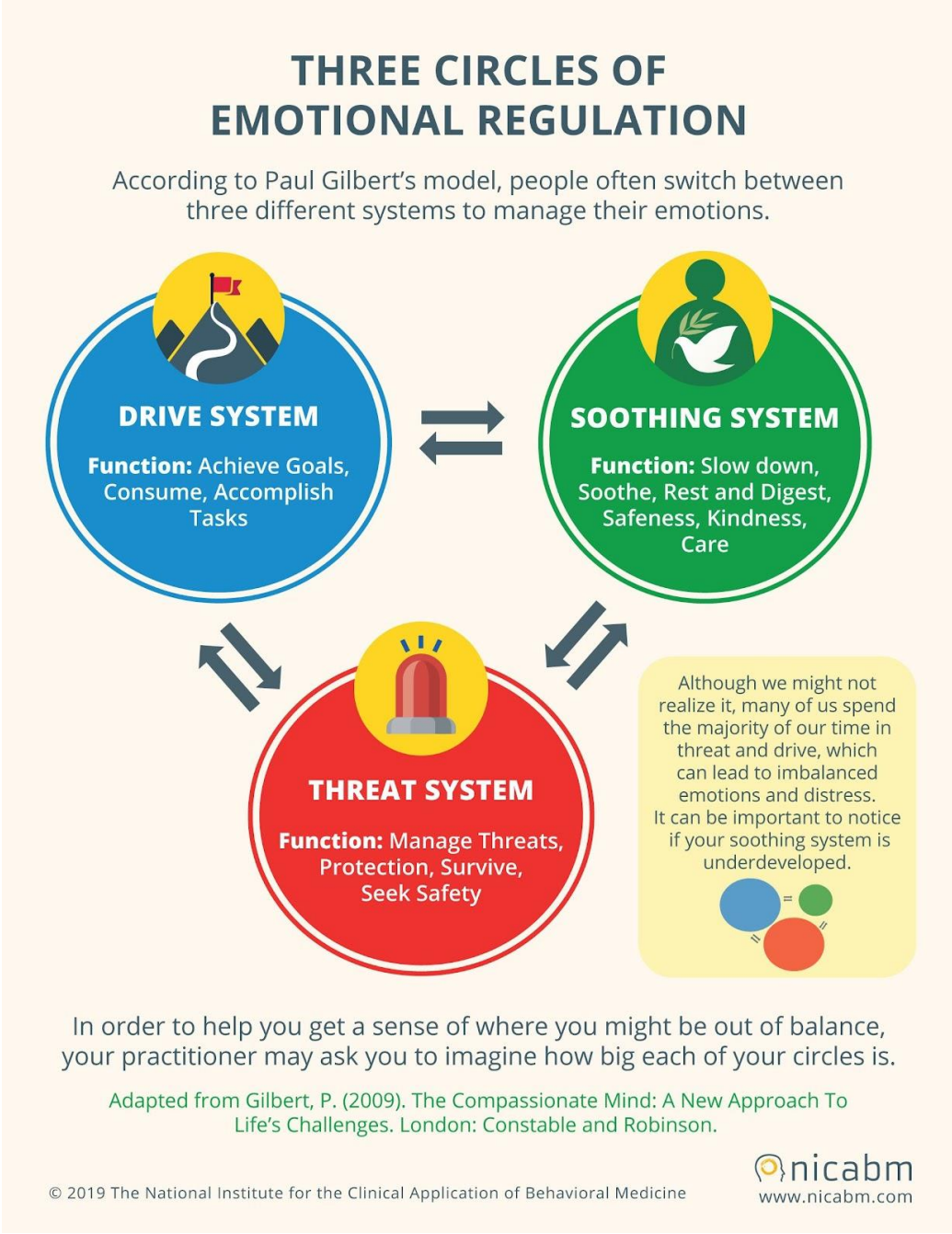

THIS IS FINE.

Emotions have functions

- Emotions such as fear, anxiety, anger, disgust, sadness, joy, gratitude all have important **functions** and an **evolutionary basis.**

- We need our **threat** (fear, anxiety) system to protect us, our **drive** system to motivate us, and our **soothing** system to regulate, rest, and connect with ourselves and others – we need **balance**!

- **Anxiety** tells us there is a threat and motivates us **to act to prevent undesired potential outcomes** (Gilbert, 2009).



An Outbreak of Sanity?

"What we are witnessing isn't a tsunami of mental illness, but a long-overdue outbreak of sanity." Lawton (2019)

People experiencing climate anxiety are **signalers** – showing the threat of the situation & the need for action (Budziszewska & Jonsson, 2021).

Instead of viewing eco-anxiety as negative, we should value it as **a sign of our humanity & concern for the planet.**

If we can learn to manage, regulate & cope with our difficult emotions, **we can face up to the crisis rather than turn away from it.**

Social support is key to psychological health.

The crucible through which we must pass

- Working to recognise our emotions and the important functions they serve can build our tolerance for the difficult feelings (*staying with the trouble* – Haraway, 2016).
- **This can help us to face up to the crisis rather than turn away from it.**
- Eco-emotions are valid. They are an indicator of our compassion for the human and more-than-human inhabitants of the earth. *Grief is the price of love*.

- *"Recognising that emotions are often what leads people to act, it is possible that feelings of ecological anxiety and grief, although uncomfortable, are in fact **the crucible through which humanity must pass** to harness the energy and conviction that are needed for the lifesaving changes now required."*

Cunsolo et al., 2020

Embrace the spectrum of eco-emotions

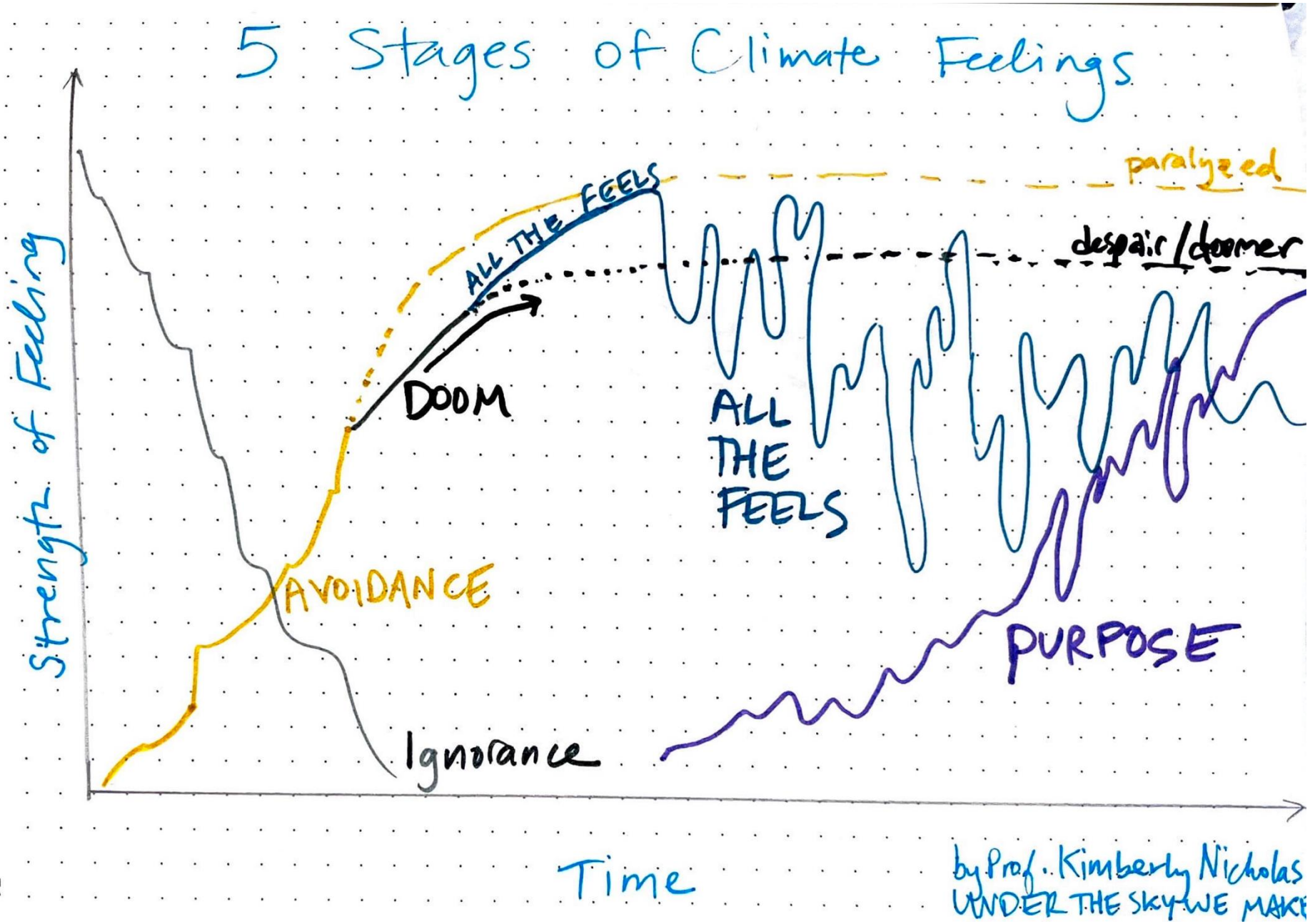
There is a full spectrum of emotions – recognise and make space for the **positive**.

Even "negative" emotions can be adaptive and constructive, rather than distressing or paralysing

Embrace ***biophilia*** (Wilson, 1986) – our innate affinity for the natural world.

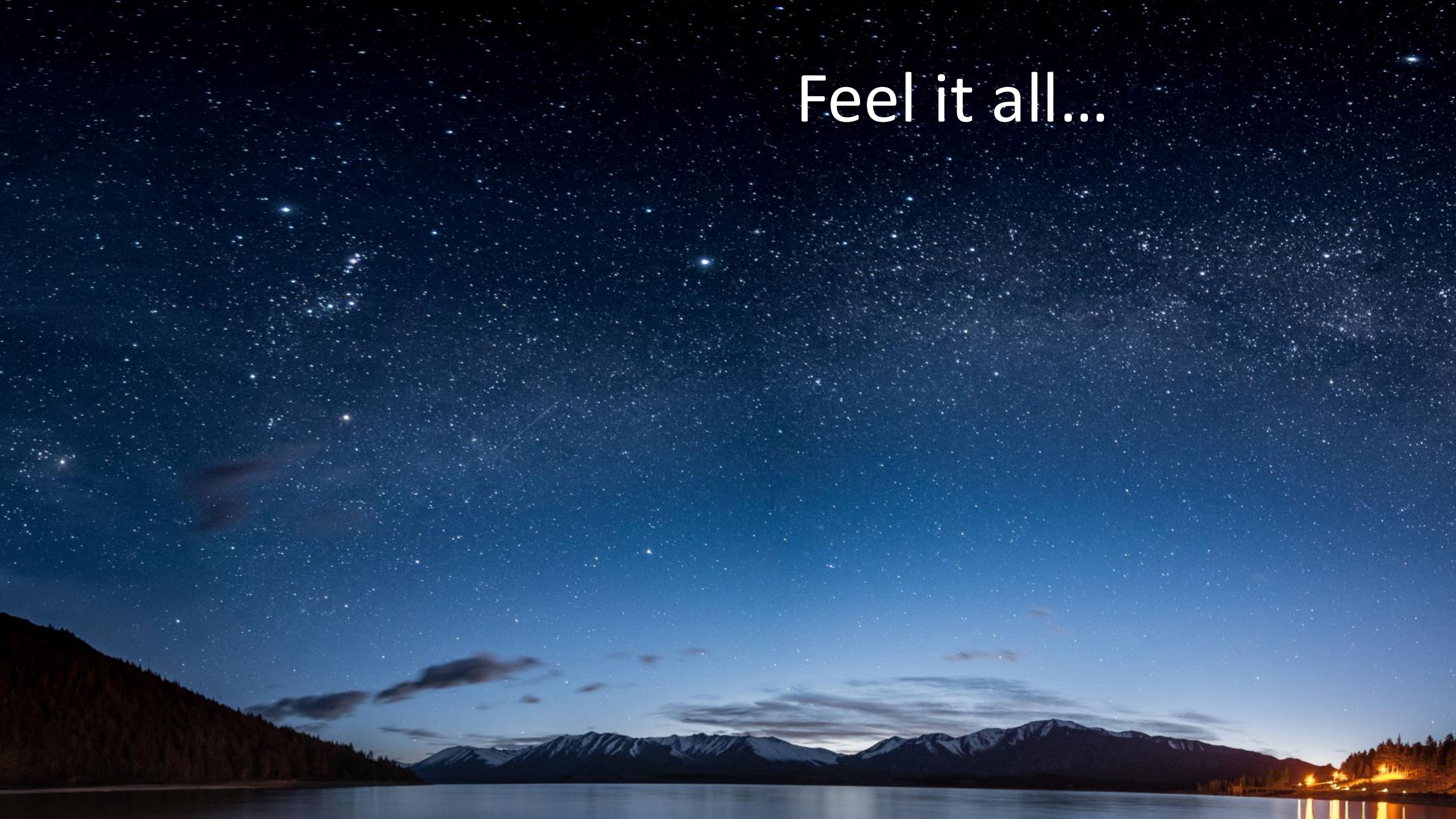
Social support and solidarity are key to psychological health and sustained action. Find your community! Talk with others.

https://www.climatementalhealth.net/resources

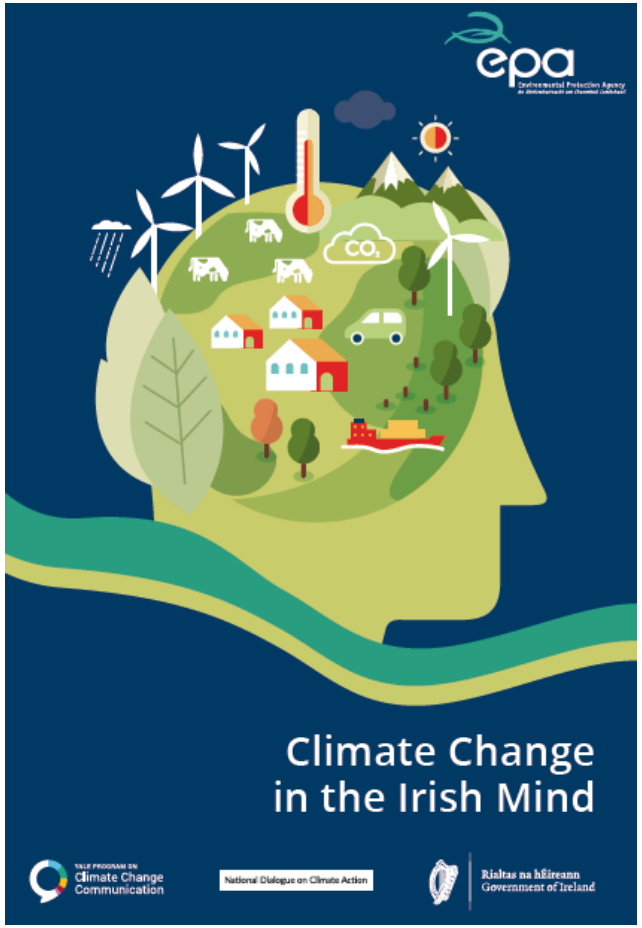


https://wecanfixit.substack.com/p/5-stages-of-climate-feelings


Feel it all…


Feel it all…


MIND THE GAP



How worried are you about climate change?

Very worried

Somewhat worried

Not very worried

Not at all worried

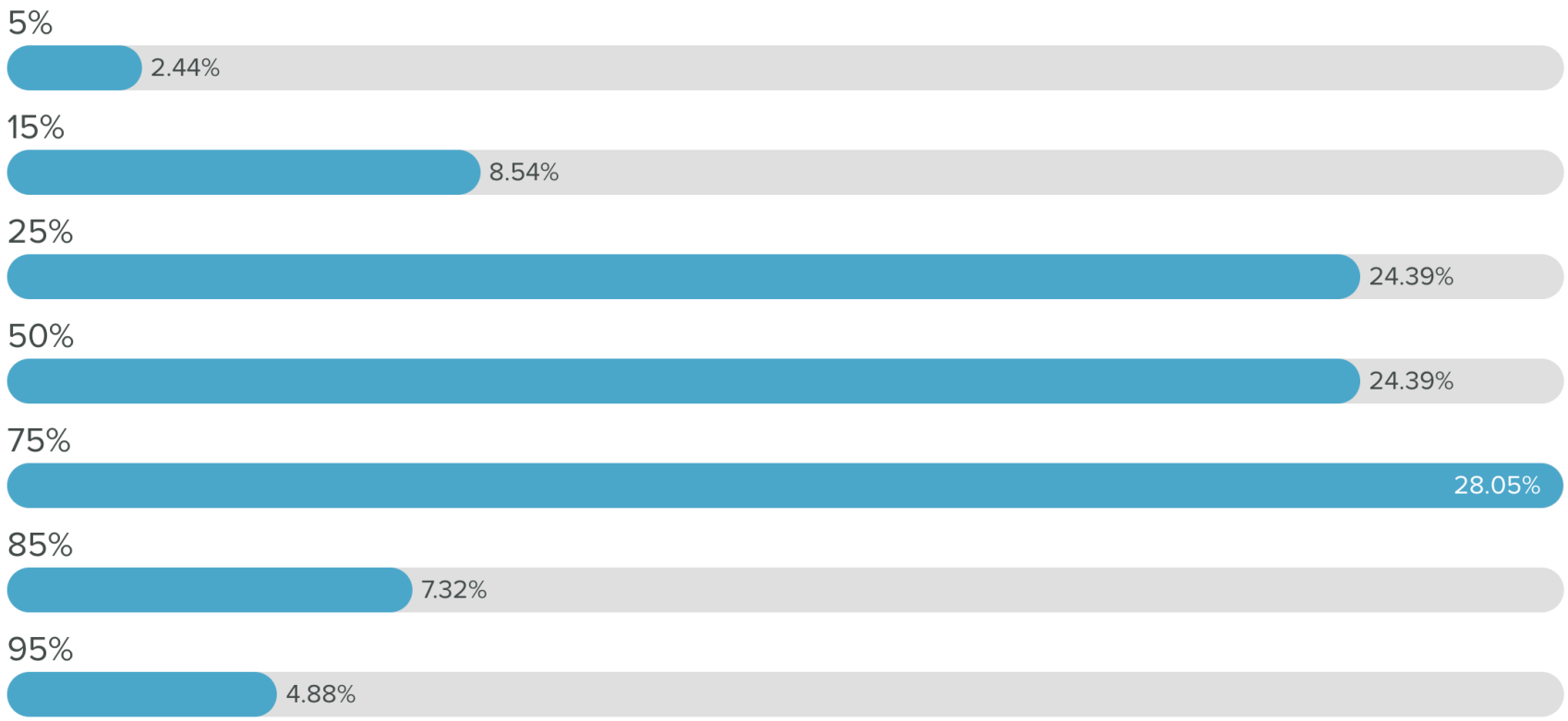
Let’s do a poll!

vevox

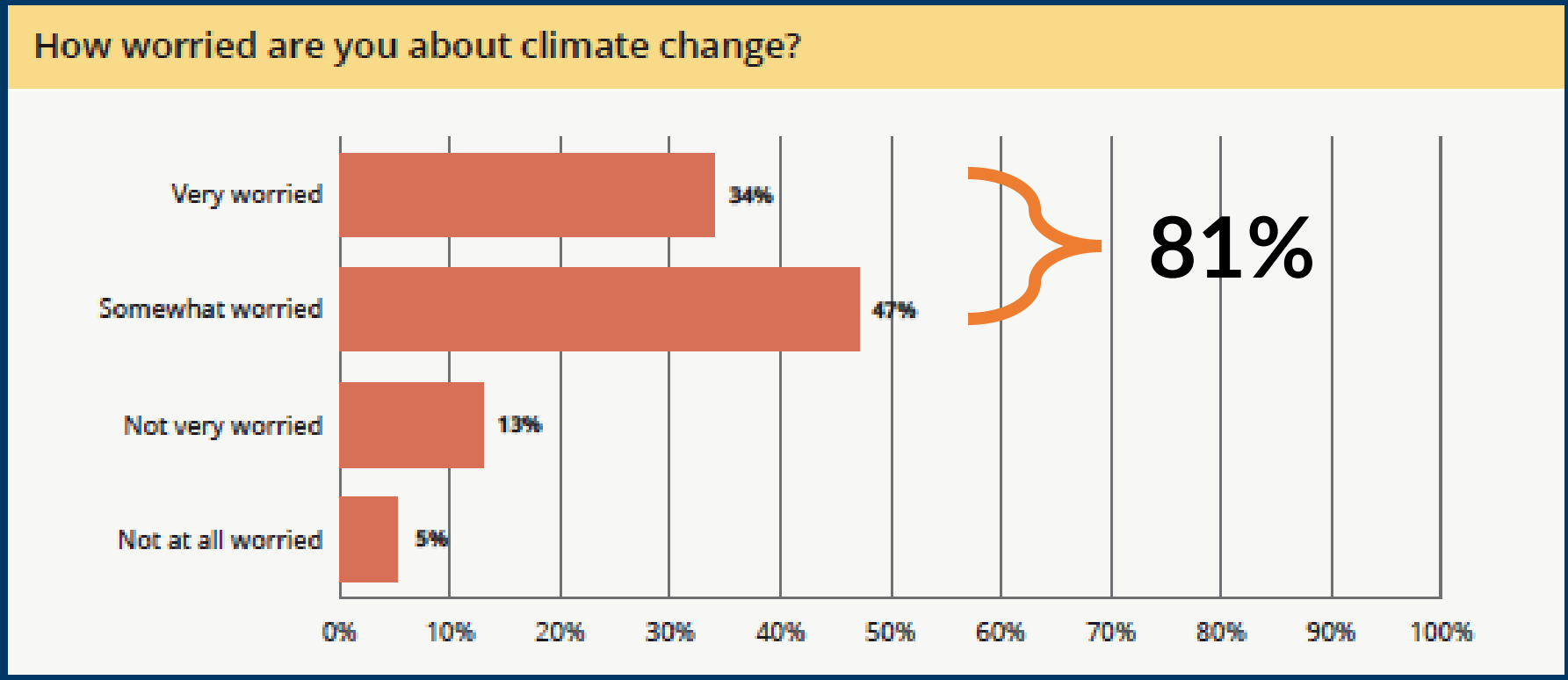
Join at:
vevox.app

ID:
105-629-523

What percentage of the Irish public do you think report being at least "somewhat worried" about climate change?



Perception vs. Reality



https://www.epa.ie/publications/monitoring--assessment/climate-change/climate-change-in-the-irish-mind-wave-2-report-1.php

WE LIVE IN A “FALSE SOCIAL REALITY”

nature communications

Article

https://doi.org/10.1038/s41467-022-32412-y

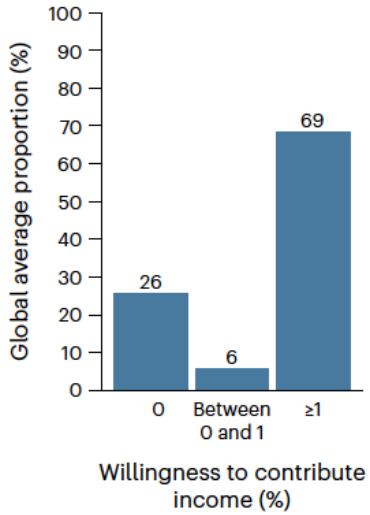
Americans experience a false social reality by underestimating popular climate policy support by nearly half

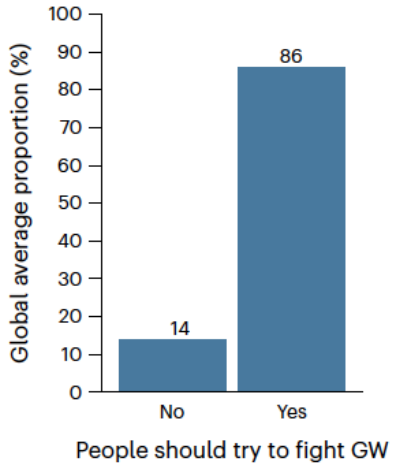
Received: 7 December 2021

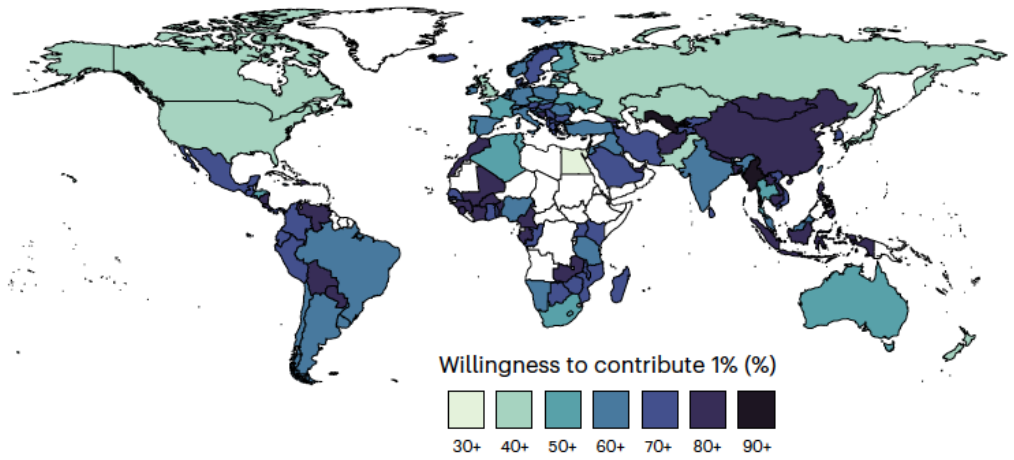
Accepted: 27 July 2022

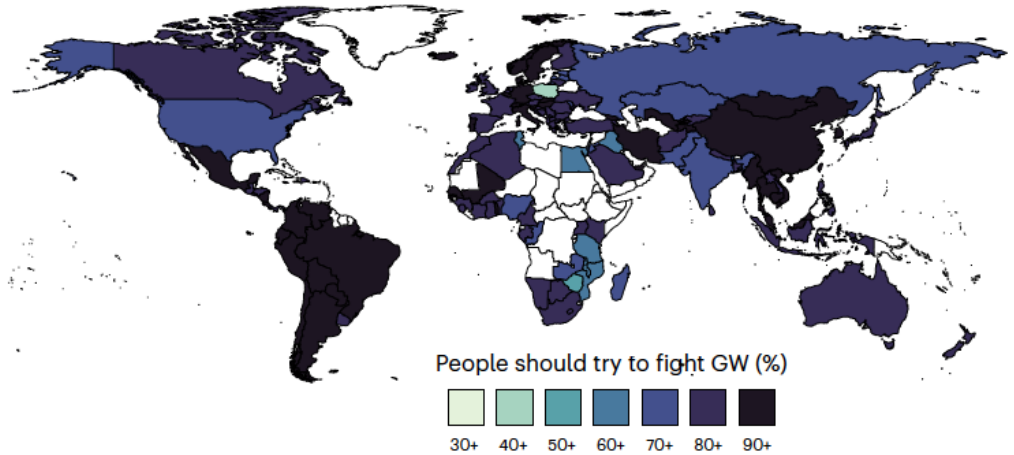
Gregg Sparkman[1], Nathan Geiger[2] & Elke U. Weber[3]

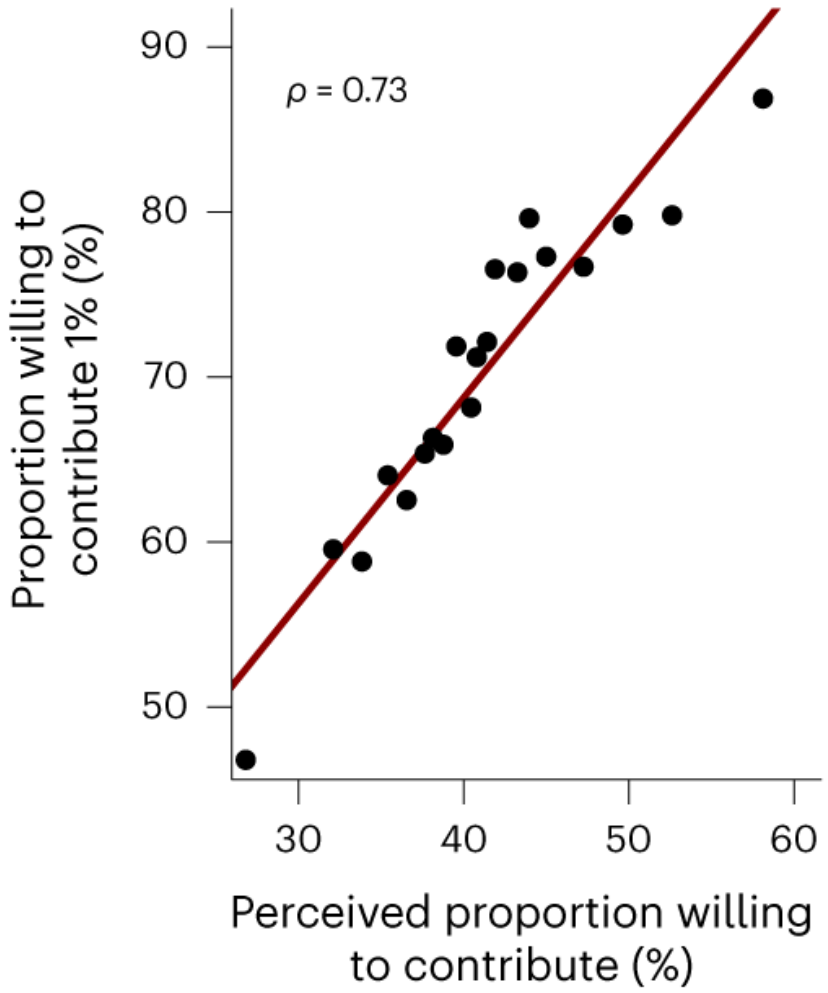
- 80-90% of people **dramatically** underestimate other people's concern about climate change, and their support for climate action policies.
- This matters! Why?
  - It creates a **false social reality** (***pluralistic ignorance***) - a shared misperception of how others think or behave
  - What we **think other people think** strongly impacts our own behaviour (social norms and ***conformity***).
  - Underestimating consensus **negatively affects** our beliefs about the likely success and efficacy of political or collective action.





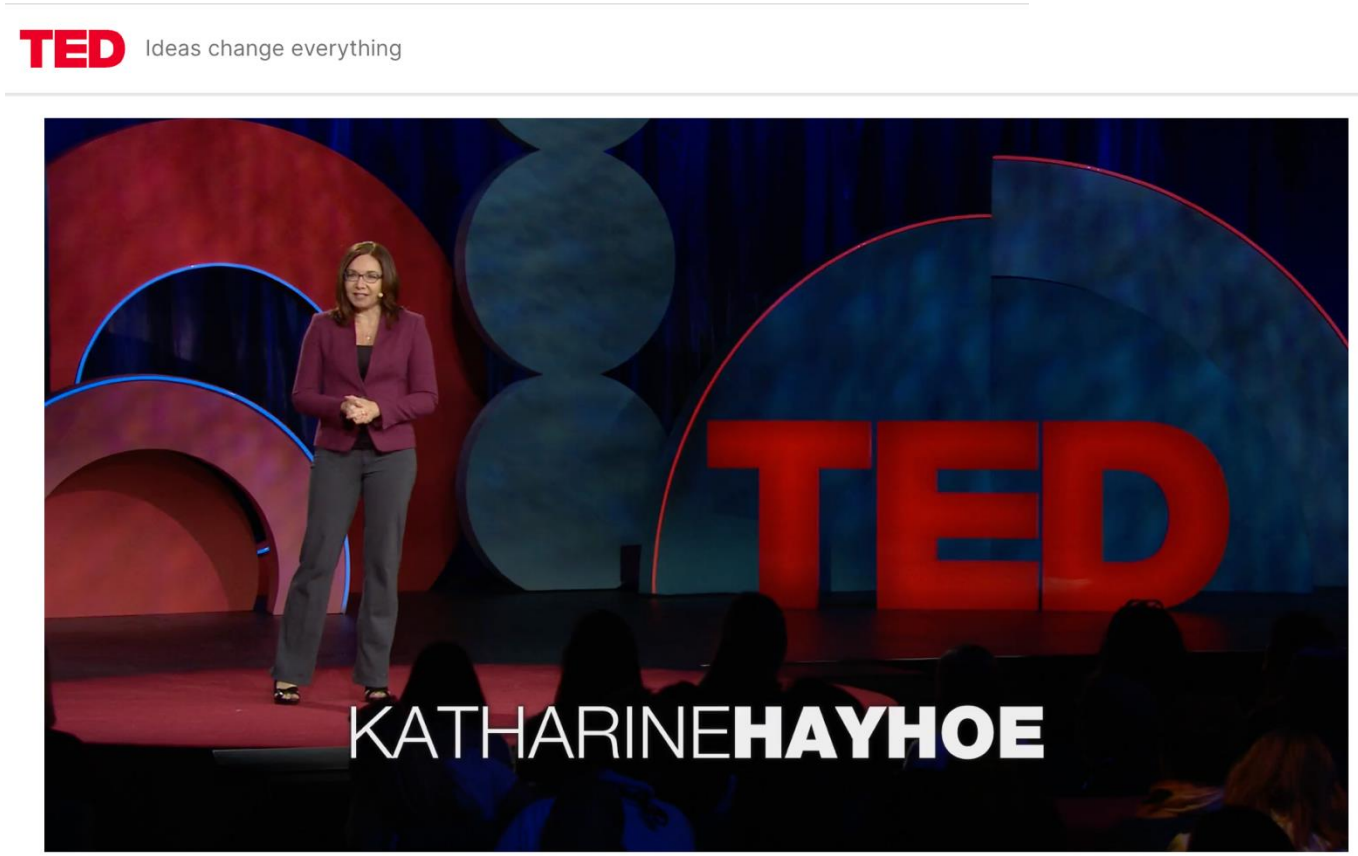


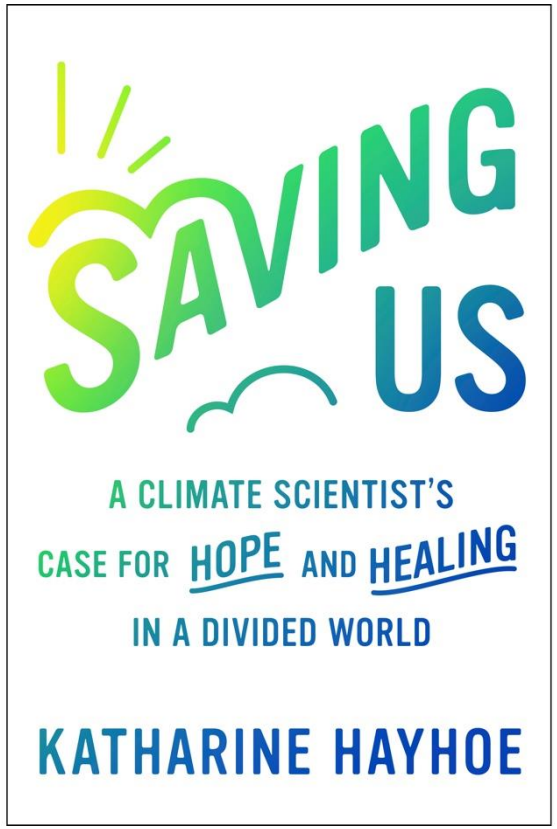




Andre et al. (2024)
https://www.nature.com/articles/s41558-024-01925-3

Don’t be silent about your climate attitudes & actions! TALK ABOUT IT!





https://www.ted.com/talks/katharine_hayhoe_the_most_important_thing_you_can_do_to_fight_climate_change_talk_about_it?language=en

Information Deficit?

To change attitudes, beliefs, & behaviours, we need to fill “gaps” in the audience’s knowledge.

Assumes **more & better information** will foster a change in behaviour – that “the facts speak for themselves.”

The information deficit model **does not entirely explain the action gap**, since this approach has failed to change attitudes, beliefs, & behaviour.

Assumes that humans are all the same and that simple provision of information will change hearts and minds.

The surface attitudes and the attitude roots underlying anti-science beliefs

When we discuss or debate with someone, we hear the surface attitude. But it is the attitude root, which underlies the surface argument, that lends it psychological power and coherence. The root makes the surface attitude stable, and it provides motivation for the person to resist new evidence, and to seek out other evidence, in a biased and selective way, to reinforce their surface attitude

SURFACE ATTITUDES

My future is in the stars.

I don't believe in climate change.

Vaccines are toxic.

Genetically modified food is wrong.

Humans were created in their present form.

ATTITUDE ROOTS

Vested interests

Anxieties/phobias

Personal identity expression

Conspiracist worldview

Social identities

Ideologies

Adapted from Hornsey, M. J., & Fielding, K. S. (2017). Attitude roots and Jiu Jitsu persuasion: Understanding and overcoming the motivated rejection of science. *American Psychologist*, 72(5), 459-473. http://dx.doi.org/10.1037/a0040437

Aron, A – The Climate Crisis, Chapter 5

Social Identity

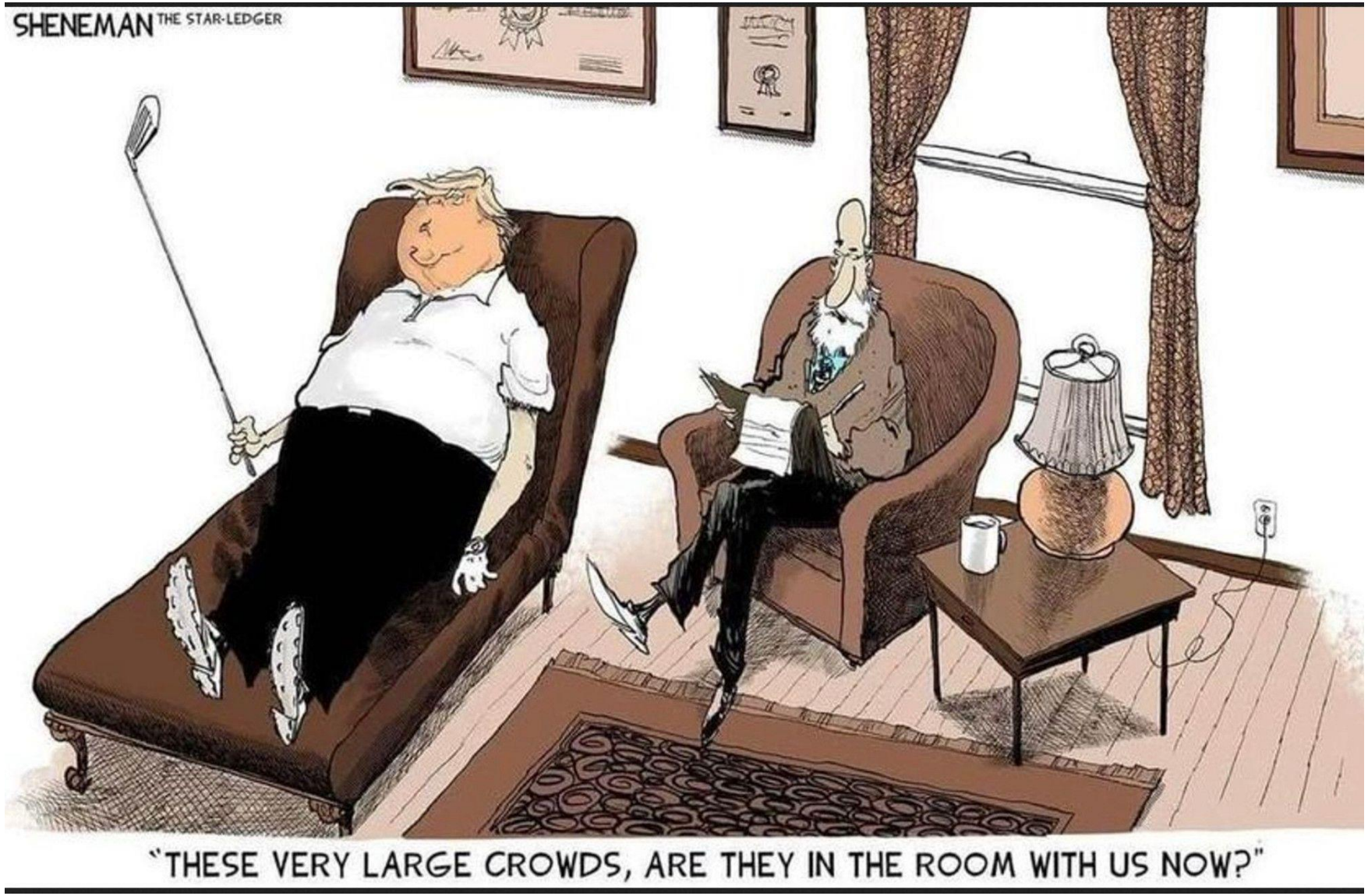
- People define themselves (gain a sense of self/identity) according to their membership in social groups (*Social Identity Theory, Minimal Group Paradigm* - Tajfel & Turner, 1986).
- Whatever sense of self is active shifts as these group memberships – and the social norms that exist within each - are activated.
- When a particular social identity is active (e.g., at a march), we are more likely to feel, act, and process information in ways aligned with that identity.
- I becomes **we**; me becomes **us**; mine becomes **ours**.... And people in other groups become **THEM**
- Because group memberships provide us with a sense of self and belonging, **we're strongly motivated to protect those identities**

https://ed.ted.com/lessons/the-sibling-rivalry-that-divided-a-town-jay-van-bavel-and-dominic-packer/digdeeper

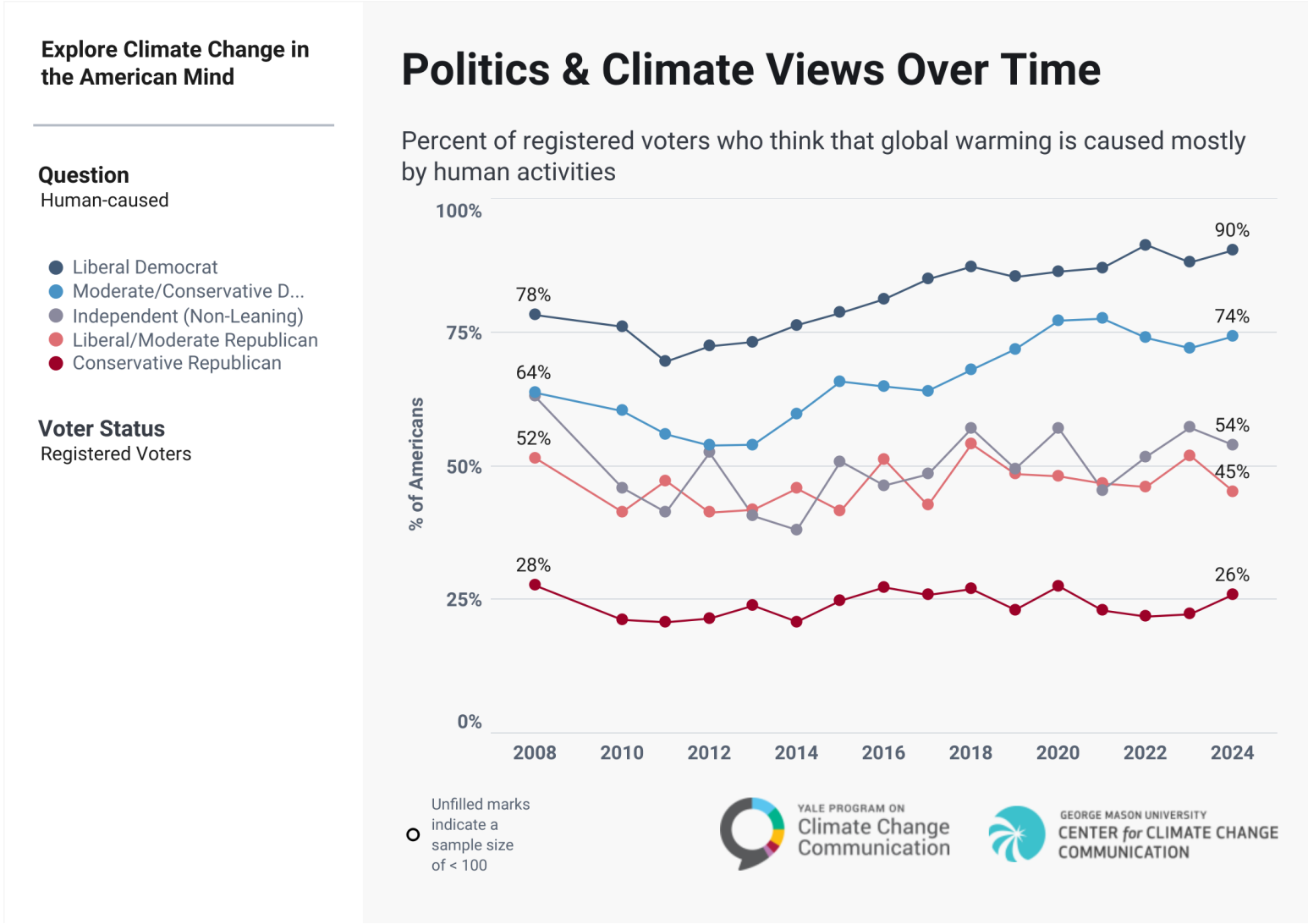
Identity-Protective Cognition

- Social belonging is sometimes more important to us than the “truth”
- Motivated reasoning: when faced with facts that conflict with our social identity we unconsciously re-interpret or distort the information
- Can also happen consciously - people ascribe to certain beliefs or dismiss certain facts not to express what they know but to show their group identity
- This is why the best arguments and facts often will not convince a climate-denier: their attitudes and beliefs are serving a function - protecting or proclaiming their identity and worldview
- **Anaïs Nin: We don't see things as they are, we see them as we are**

> *After an elementary school shooting in Uvalde, Texas left 19 kids and two adults dead, Sen. Ted Cruz (R-TX) (who’s speaking at the NRA’s convention this Friday) argued yesterday that the problem isn’t that there are too many guns out there, it’s that schools have too many doors – more specifically, more than one door.*


SHENEMAN THE STAR-LEDGER
"THESE VERY LARGE CROWDS, ARE THEY IN THE ROOM WITH US NOW?"

Is there an information deficit?
Motivated Reasoning and Climate



https://climatecommunication.yale.edu/visualizations-data/americans-climate-views/

“The environmental challenge that confronts the whole world demands an equivalent response from the whole world. Every country will be affected and no one can opt out. Those countries who are industrialised must contribute more to help those who are not.” (1989)

“Those who think we are powerless to do anything about the greenhouse effect forget about the 'White House effect'; as President, I intend to do something about it.” (1988)

Unsettled Science

Knowing that weather forecasts are reliable for a few days at best, we should recognize the enormous challenge facing scientists seeking to predict climate change and its impact over the next century. In spite of everyone's desire for clear answers, it is not surprising that fundamental gaps in knowledge leave scientists unable to make reliable predictions about future changes.

A recent report from the National Research Council (NRC) raises important issues, including these still-unanswered questions: (1) Has human activity already begun to change temperature and the climate, and (2) How significant will future change be?

The NRC report confirms that Earth's surface temperature has risen by about 1 degree Fahrenheit over the past 150 years. Some use this result to claim that humans are causing global warming, and they point to storms or floods to say that dangerous impacts are already under way. Yet scientists remain unable to confirm either contention.

Geological evidence indicates that climate and greenhouse gas levels experience significant natural variability for reasons having nothing to do with human activity. Historical records and current scientific evidence show that Europe and North America experienced a *medieval warm period* one thousand years ago, followed centuries later by a *little ice age*. The geological record shows even larger changes throughout Earth's history. Against this backdrop of large, poorly understood natural variability, it is impossible for scientists to attribute the recent small surface temperature increase to human causes.

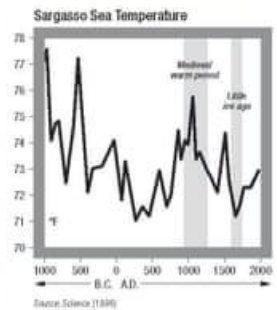
Moreover, computer models relied upon by climate scientists predict that lower atmospheric temperatures will rise as fast as or faster than temperatures at the surface. However, only within the last 20 years have reliable global measurements of temperatures in the lower atmosphere been available through the use of satellite technology. These measurements show little if any warming.

Even less is known about the potential positive or negative impacts of climate change. In fact, many academic studies and field experiments have demonstrated that increased levels of carbon dioxide can promote crop and forest growth.

So, while some argue that the science debate is settled and governments should focus only on near-term policies—that is empty rhetoric. Inevitably, future scientific research will help us understand how human actions and natural climate change may affect the world and will help determine what actions may be desirable to address the long-term.

Science has given us enough information to know that climate changes may pose long-term risks. Natural variability and human activity may lead to climate change that could be significant and perhaps both positive and negative. Consequently, people, companies and governments should take responsible actions now to address the issue.

One essential step is to encourage development of lower-emission technologies to meet our future needs for energy. We'll next look at the promise of technology and what is being done today.



ExxonMobil

Science: what we know and don't know

As the debate over climate change heats up, science is being upstaged by the call for solutions. At stake is a complex issue with many questions. Some things we know for certain. Others are far from certain.

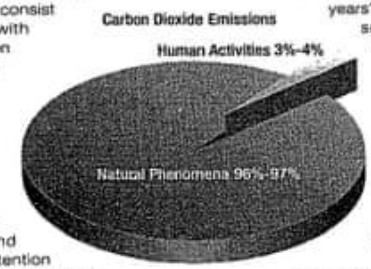
First, we know greenhouse gases account for less than one percent of Earth's atmosphere. The ability of these gases to trap heat and warm Earth is an important part of the climate system because it makes our planet habitable. Greenhouse gases consist largely of water vapor, with smaller amounts of carbon dioxide (CO_2), methane and nitrous oxide and traces of chlorofluorocarbons (CFCs).

The focus of concern is CO_2. While most of the CO_2 emitted by far is the result of natural phenomena—namely respiration and decomposition, most attention has centered on the three to four percent related to human activities—burning of fossil fuels, deforestation. The amount of carbon dioxide in the atmosphere has risen in the last 100 years, leading scientists to conclude that the increase is a result of man-made activities.

Although the linkage between the greenhouse gases and global warming is one factor, other variables could be much more important in the climate system than emissions produced by man.

The UN-sponsored Intergovernmental Panel on Climate Change (IPCC) thought it had found the magic bullet when it concluded that the one-degree Fahrenheit rise in global temperatures over the past century may bear a "fingerprint" of human activity. The fingerprint soon blurred when an IPCC lead author conceded to the "uncertainty inherent in computer climate modeling."

Nonetheless, nations at Kyoto are being asked to embrace proposals that could have potentially huge impacts on economies and lifestyles. Nations are being urged to cut emissions without knowing either the severity of the problem—that is, will Earth's temperature increase over the next 50–100 years?—or the efficacy of the solution—will cutting CO_2 emissions reduce the problem?



Within a decade, science is likely to provide more answers on what factors affect global warming, thereby improving our decision-making. We just don't have this information today.

Answers to questions on climate change will require more reliable measurements of temperature at many places on Earth, better understanding of clouds and ocean currents along with greater computer power.

This process shouldn't be short-circuited to satisfy an artificial deadline, like the conference in Kyoto. Whatever effect increased concentrations of man-made gases may have, it will develop slowly over decades. Thus, there is time for scientists to refine their understanding of the climate system, while governments, industry and the public work to find practical means to control greenhouse gases, if such measures are called for. Adopting quick-fix measures at this point could pose grave economic risks for the world.

Mobil The energy to make a difference.

https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing
https://www.theguardian.com/us-news/2023/sep/14/exxonmobil-documents-wall-street-journal-climate-science
https://insideclimatenews.org/project/exxon-the-road-not-taken/

But **they knew…**

Oil companies **knew** what continued use of fossil fuels would do, because they projected it in the 1970s.

Since then, fossil fuel companies have spent **$billions on lobbying, PR, denial, and delay**

SOURCE: [DOI: 10.1126/science.abk006](https://doi.org/10.1126/science.abk006)

https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing

RESEARCH

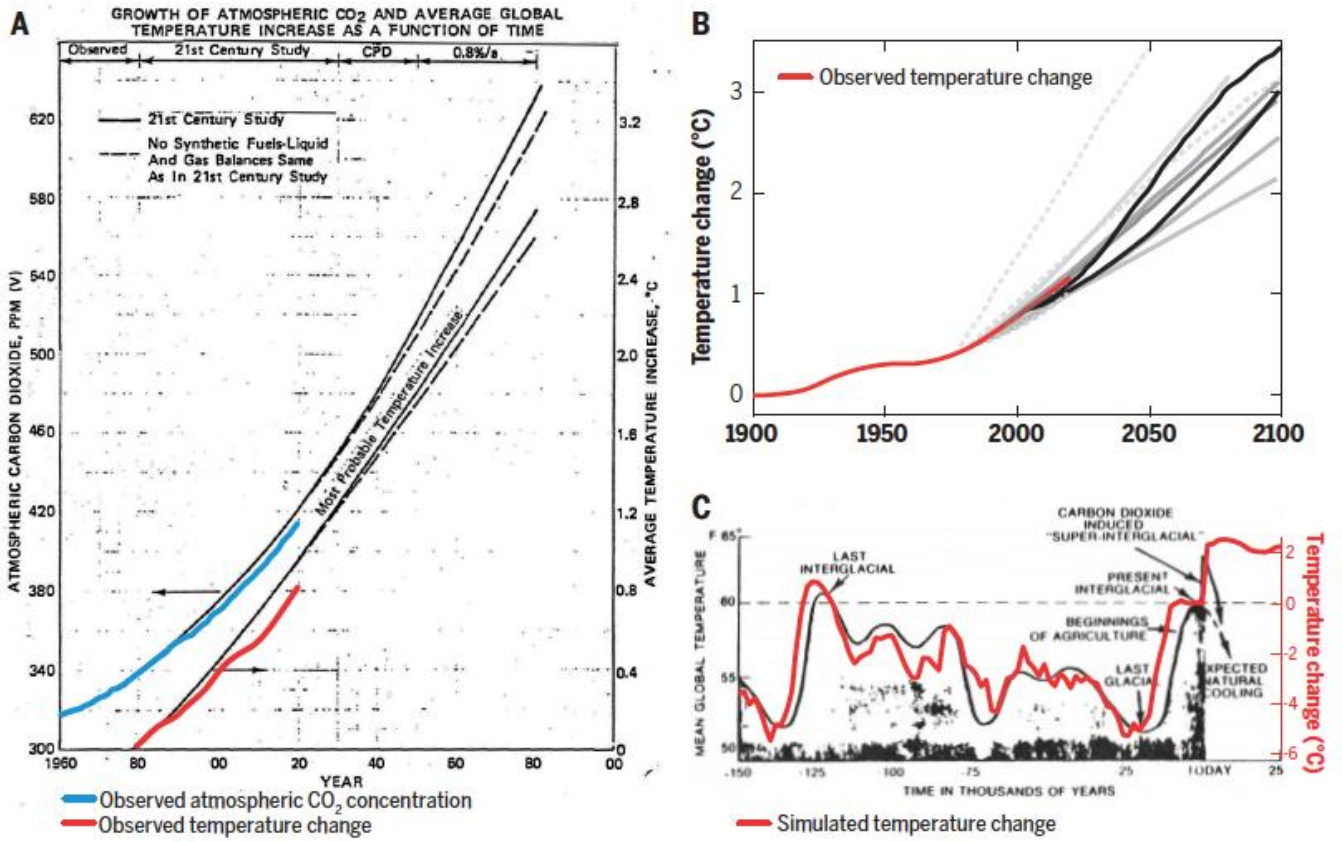
REVIEW SUMMARY

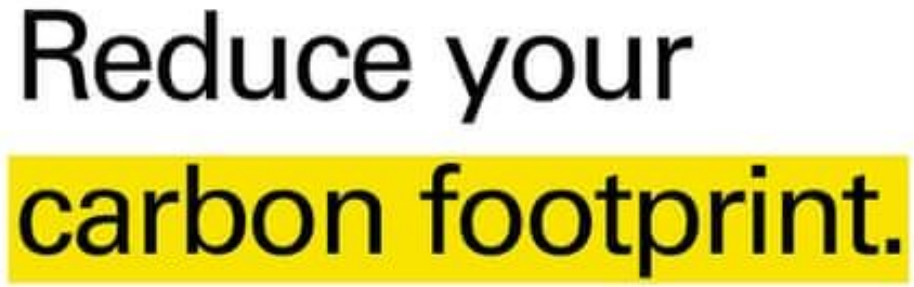
Supran *et al.*, *Science* **379**, 153 (2023) 13 January 2023

CLIMATE PROJECTION

Assessing ExxonMobil's global warming projections

G. Supran*, S. Rahmstorf, N. Oreskes



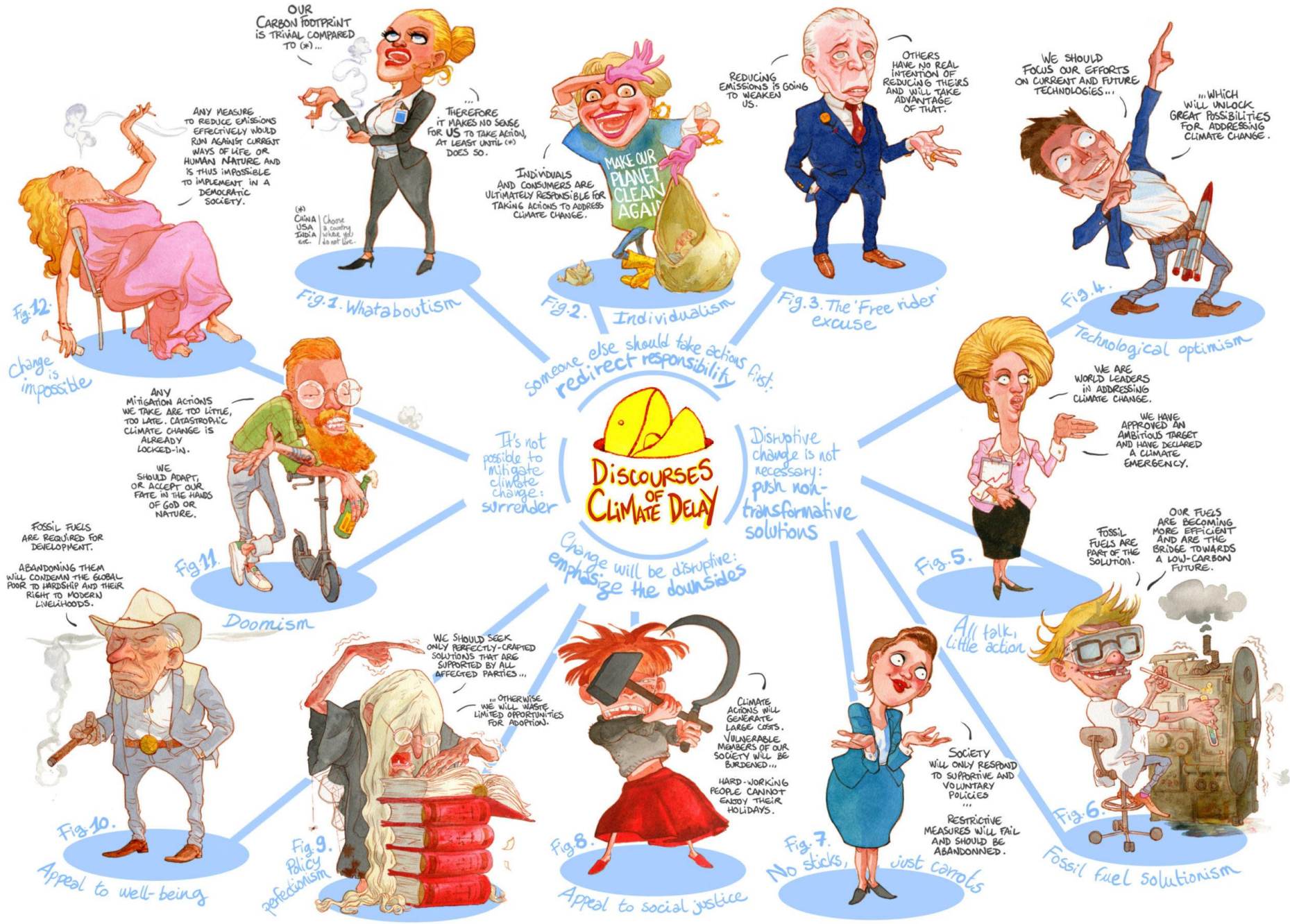


From 2004-2006, BP ran a (>$100 million per year) marketing campaign that popularised the idea of the individual "carbon footprint." A recent social media version of the campaign ran in 2019.

The central message? Global heating is *your* fault. All that's needed is for you to "do your bit" and watch your own emissions – the most important actions are at the **individual level.**

By tricking us into focusing on our own footprints, Big Oil distracts from theirs.

https://grist.org/energy/footprint-fantasy/
https://www.rollingstone.com/politics/politics-news/climate-change-exxonmobil-harvard-study-1169682/



https://www.leolinne.com/?portfolio=discourses-of-climate-delay

DOOMISM/FATALISM

Lamb et al. 2020; https://doi.org/10.1017/sus.2020.13

https://www.leolinne.com/?portfolio=discourses-of-climate-delay

MOTHERBOARD
TECH BY VICE

Apocalypse Neuro: Why Our Brains Don't Process the Gravest Threats to Humanity

The human brain simply may not be wired to process slow-moving crises like climate change.

By Brian Merchant

10 June 2015, 3:30pm Share Tweet Snap

theguardian.com/sustainable-business/2014/nov/10/brain-climate-change-scie

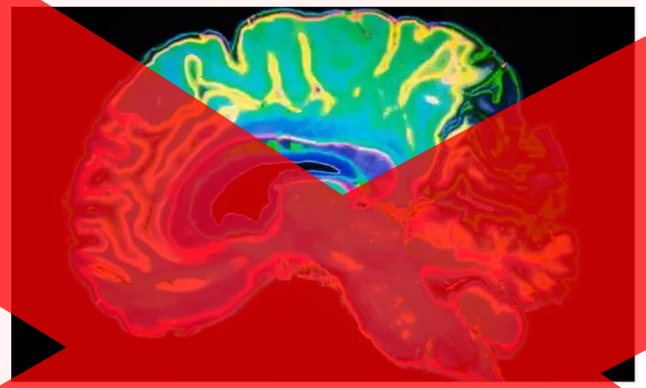
The science behind sustainability solutions Guardian sustainable business

Analysis

Your brain on climate change: why the threat produces apathy, not action

Greg Harman

Many people aren't responding to mounting evidence of the huge impacts of climate change. Neuroscience helps explain why – and the key role that businesses can play in responding rationally



BROOKINGS

PLANET POLICY

Why the wiring of our brains makes it hard to stop climate change

David G. Victor, Nick Obradovich, and Dillon J. Amaya · Monday, September 18, 2017

The New York Times

Opinion

GRAY MATTER

We're All Climate-Change Idiots

By Beth Gardiner

July 21, 2012

TIME

IDEAS • CLIMATE CHANGE

Why Your Brain Can't Process Climate Change

The “psychological barriers” narrative is **highly problematic**

It promotes a reading of psychological evidence that justifies the climate crisis:

- as a product of universal human nature
- by portraying the human mind as a collection of evolved psychological barriers to climate action.

It misrepresents psychological research and theory

Frames the climate-policy narrative in a way that may **itself be a potential barrier to tackling climate change**: as a result of individual human frailties and shortcomings (i-frame), rather than an issue with our political, economic, and social systems (s-frame), which can be addressed through regulation.

This rationalises and justifies inaction: failure to act is not just natural but inevitable

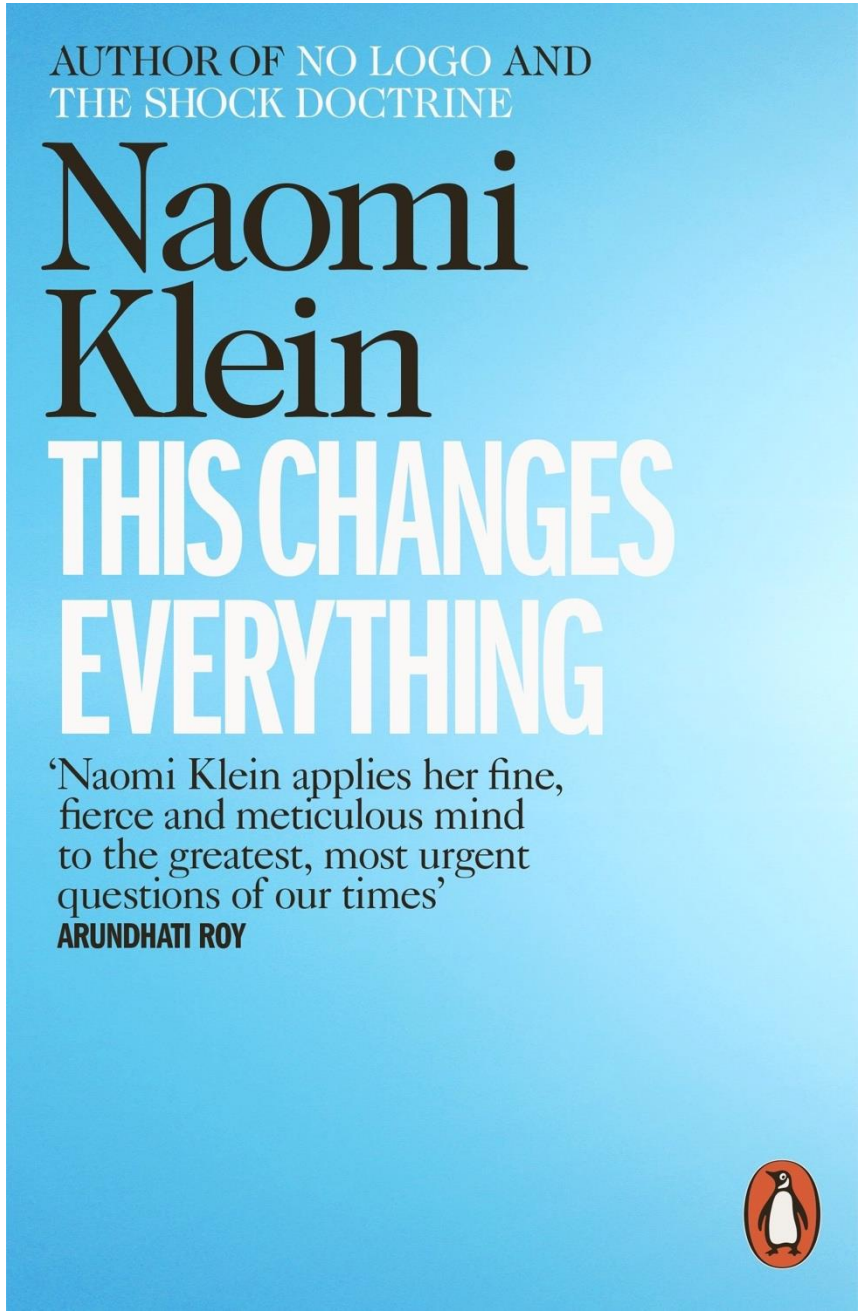
Atkinson & Jacquet, 2021; https://journals.sagepub.com/doi/10.1177/17456916211018454
Chater & Loewenstein, 2023: https://doi.org/10.1017/S0140525X22002023

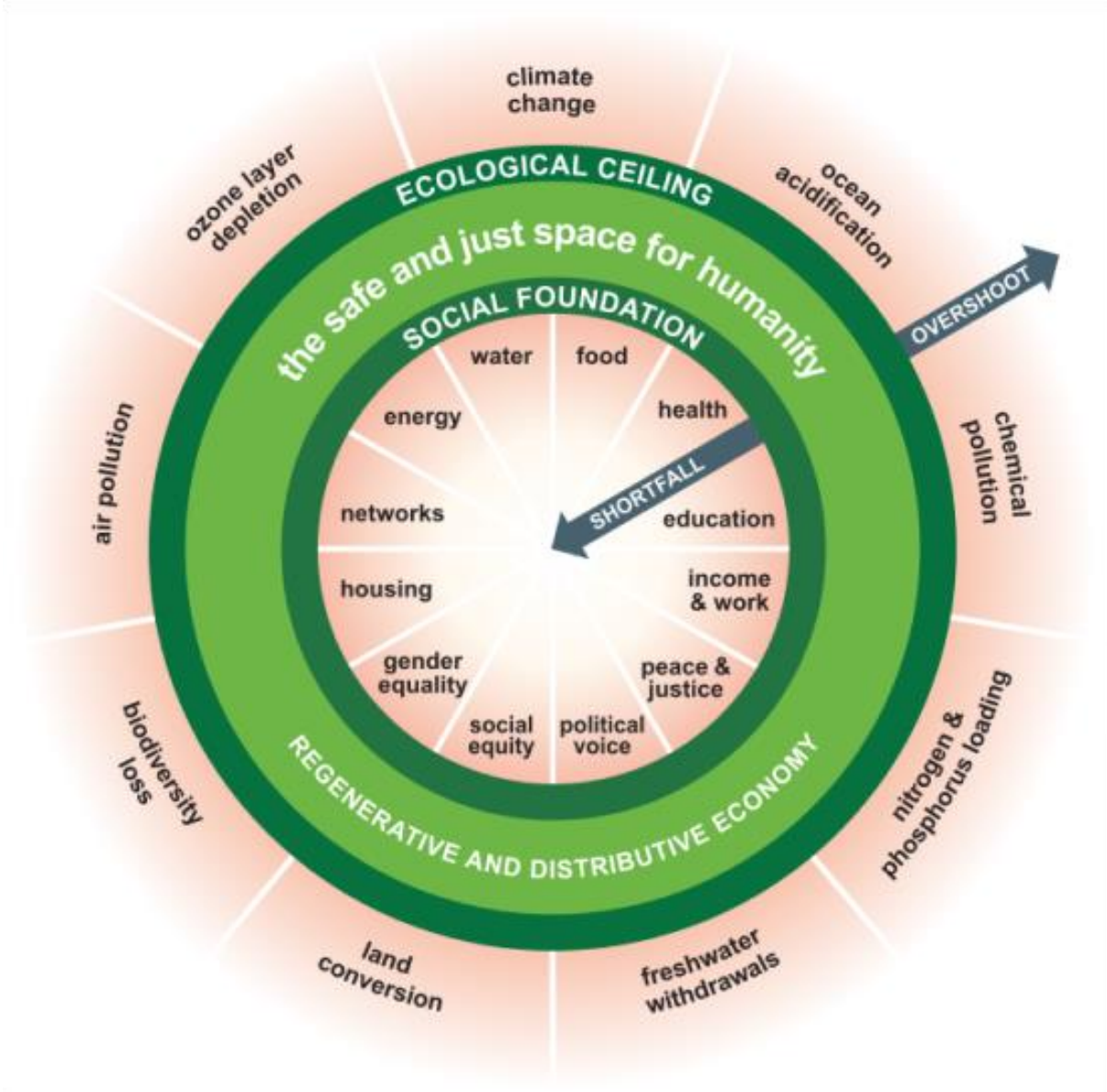
Action requires more than a technical effort to cut emissions. Because those least responsible for the climate crisis are suffering the most from its effects, climate justice requires transformative change that centres human rights and social inequality.

Solutions must be socially just - they must address **inequality and issues of social justice** – the concerns that working people have over their jobs and living conditions.

We need to unite people around a common purpose.

We need to reimagine what an economy is for.





https://doughnuteconomics.org/

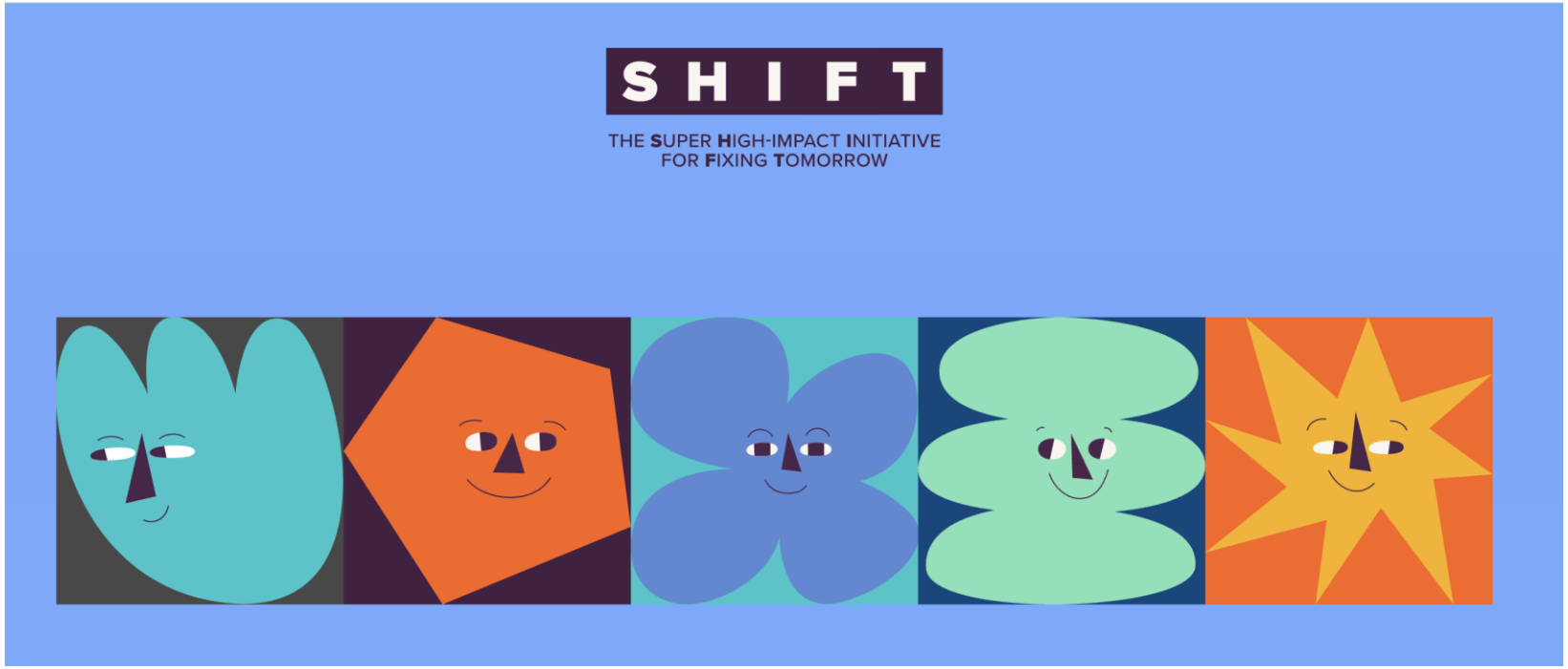
What else can I* do? *Where I = resident of **high-emitting nation** like Ireland

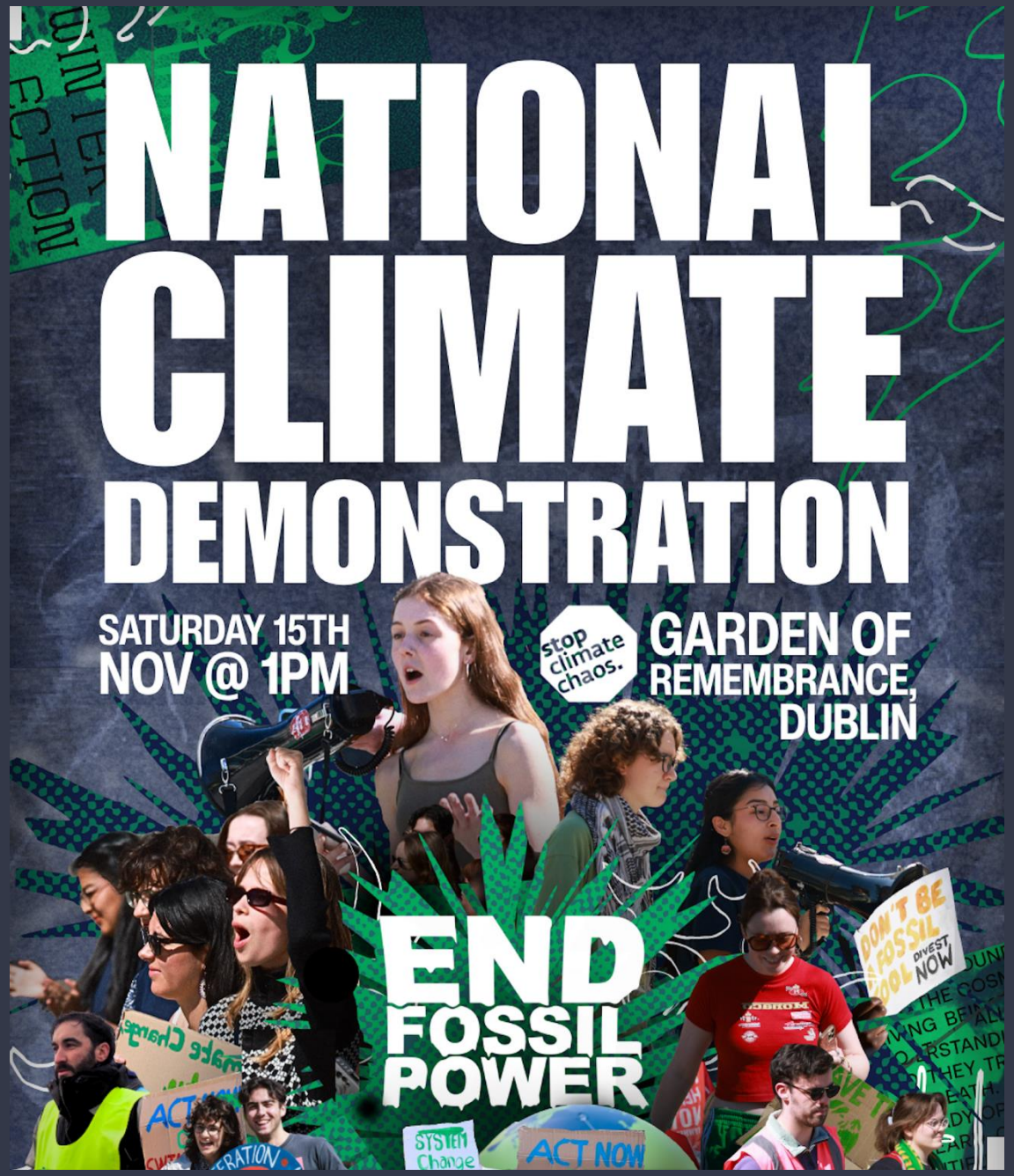
- **Eat less meat and dairy:** https://ourworldindata.org/grapher/food-emissions-supply-chain
- **Fly less:** Sustainable aviation is unlikely; carbon offsets are mostly a sham https://www.sustainabilitybynumbers.com/p/aviation-part-two; https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe
- **Leave your car at home**; if you can't, go electric: https://www.seai.ie/blog/need-a-car/
- **Reduce your energy use, go renewable:** https://www.seai.ie/home-energy/energy-saving-tips/
- **Cut your consumption and waste**: food, clothing, electronics. Go circular! https://www.weforum.org/agenda/2022/03/21-circular-economy-solutions/
- **Divest your finances** – contact your bank or pension to ask about fossil-free banking and investment. Seems more difficult in Ireland than elsewhere; https://bank.green/
- **Respect, protect & create green & blue spaces.** https://www.antaisce.org/
- **Talk about it!** About the changes you're making, about how much you care and your support for climate action. https://www.ted.com/talks/katharine_hayhoe_the_most_important_thing_you_can_do_to_fight_climate_change_talk_about_it?language=en

SEE: https://www.imperial.ac.uk/stories/climate-action

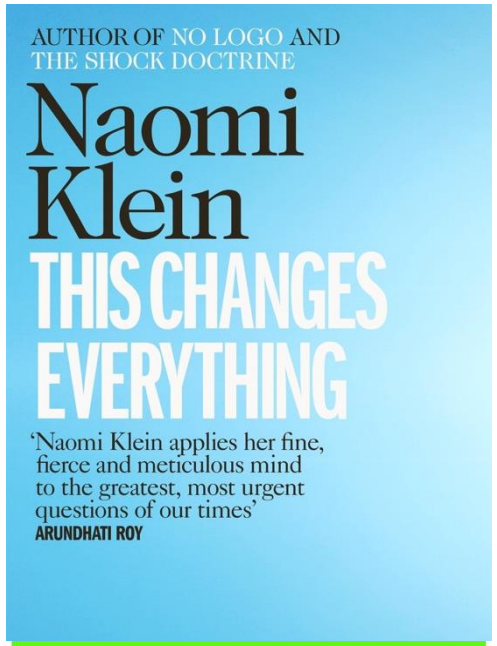
What is your climate superpower? Use the SHIFT tool help you to identify roles, power, and influence you hold!

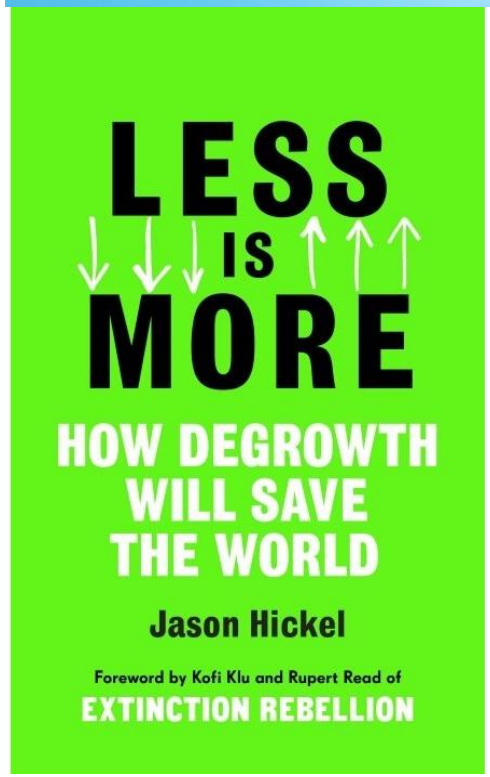
https://jointheshift.earth/

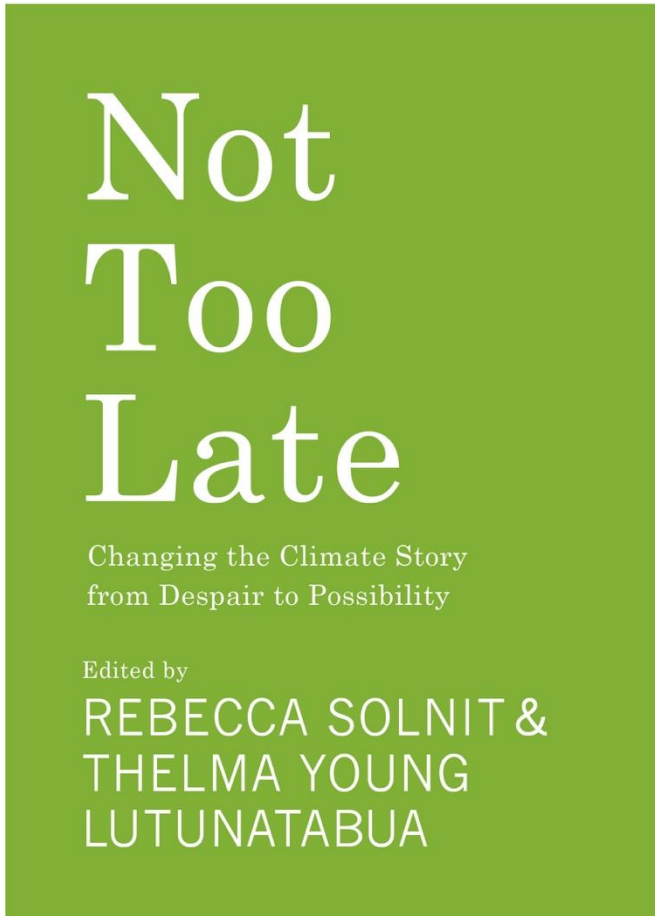




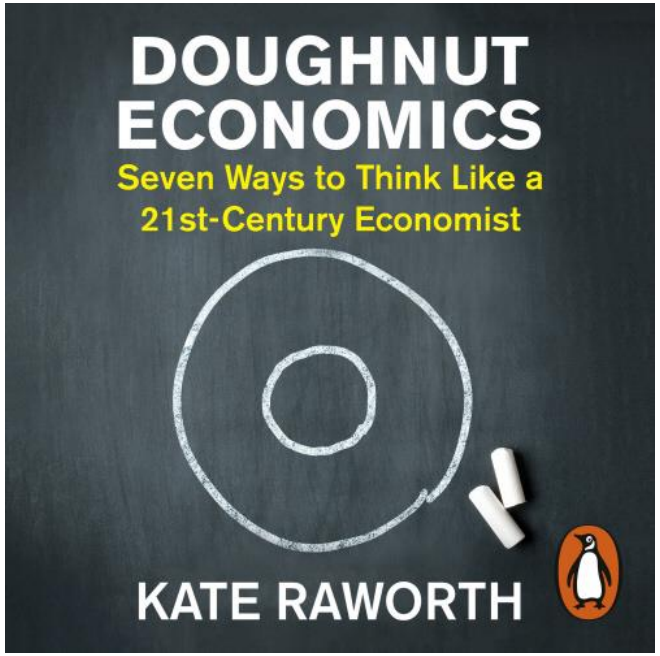
- https://chat.whatsapp.com/GSRjjsUYtRW0GDqtW0wHqF

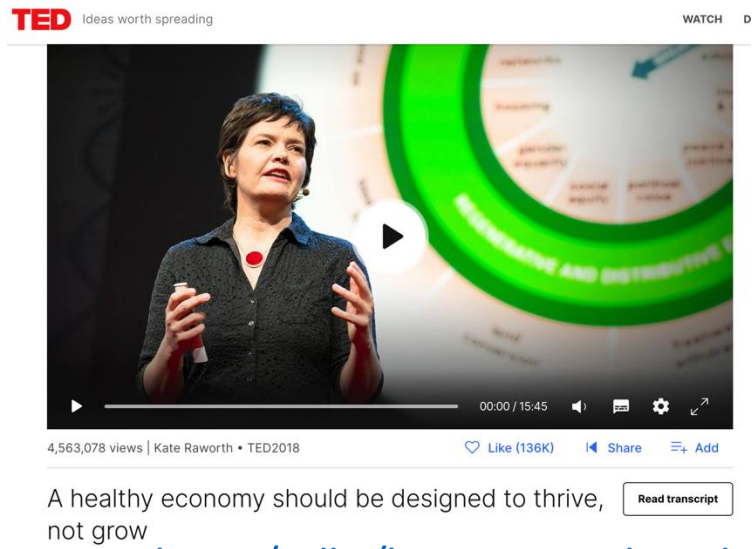




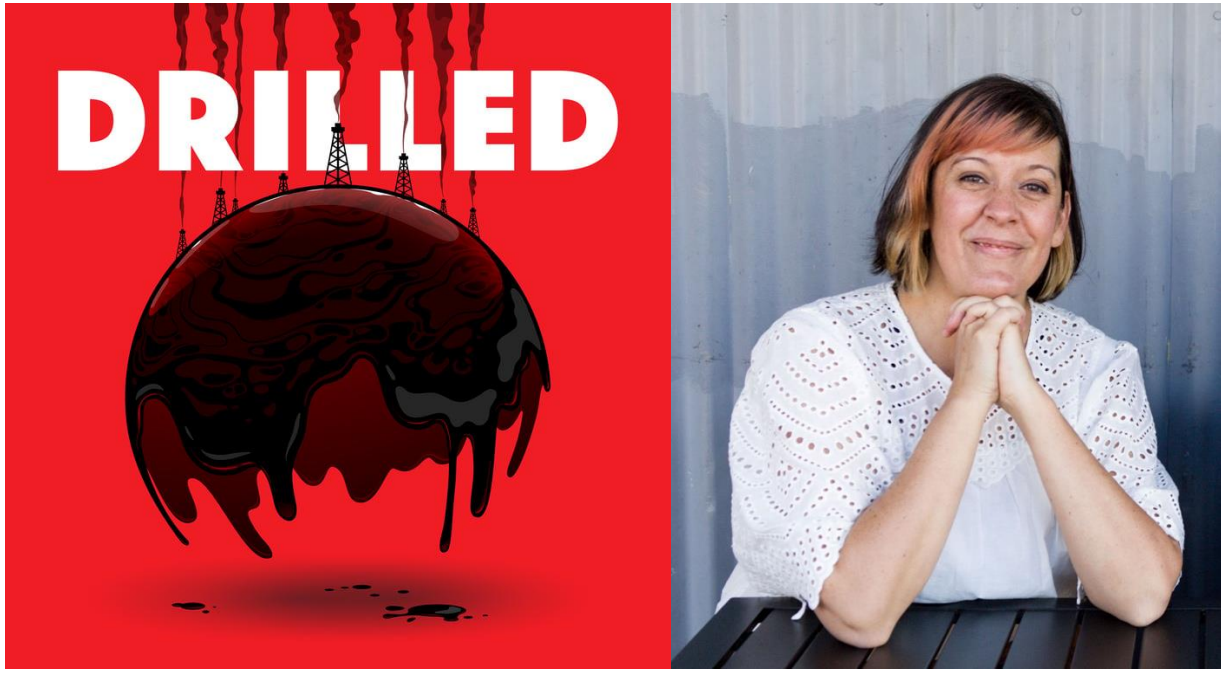


https://www.nottoolateclimate.com/

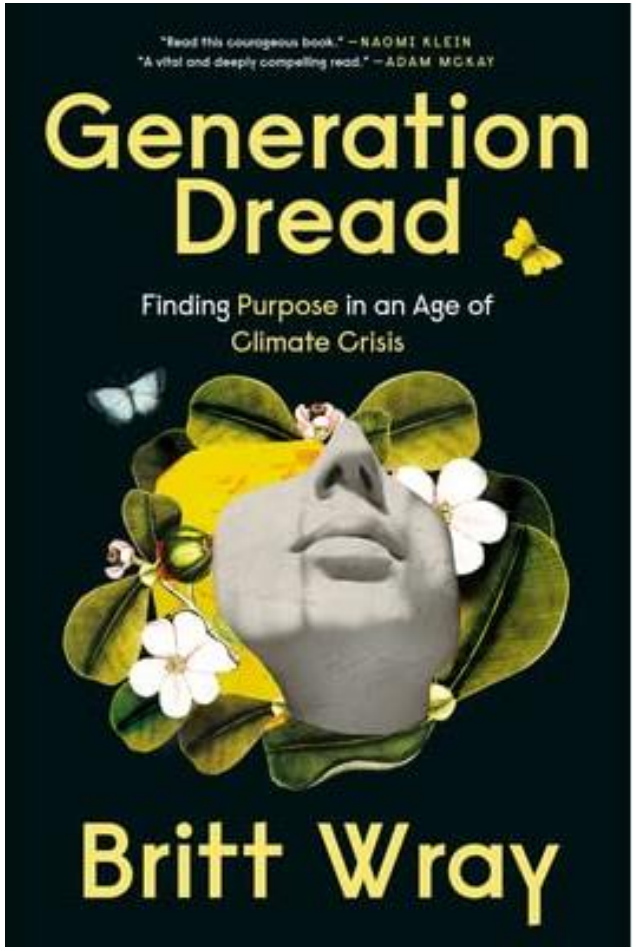




https://www.ted.com/talks/kate_raworth_a_healthy_economy_should_be_designed_to_thrive_not_grow



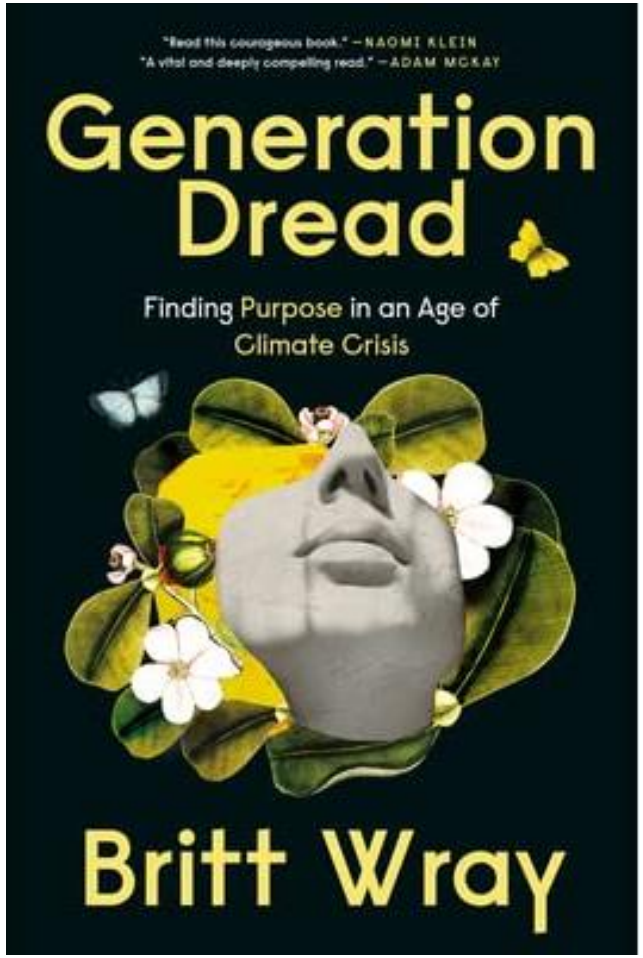
https://drilled.media/podcasts/drilled



https://unthinkable.substack.com/

Education, connection, solidarity & action

- Education is empowering! Be **informed** about the roots of the climate crisis.
- Break the false social reality of climate silence! **Talk with your friends,** normalise climate anxiety, express your support for action.
- Make the changes you can **- create new social norms.**
- **Seek and share interpersonal support and solidarity!** join climate or environmental groups, etc. Sharing and connecting with others can help to process. Solidarity is sustaining.
- **Generation Dread (Britt Wray):** We all need to learn how to face, value, and live with difficult eco-emotions to be able to engage in action https://unthinkable.substack.com/

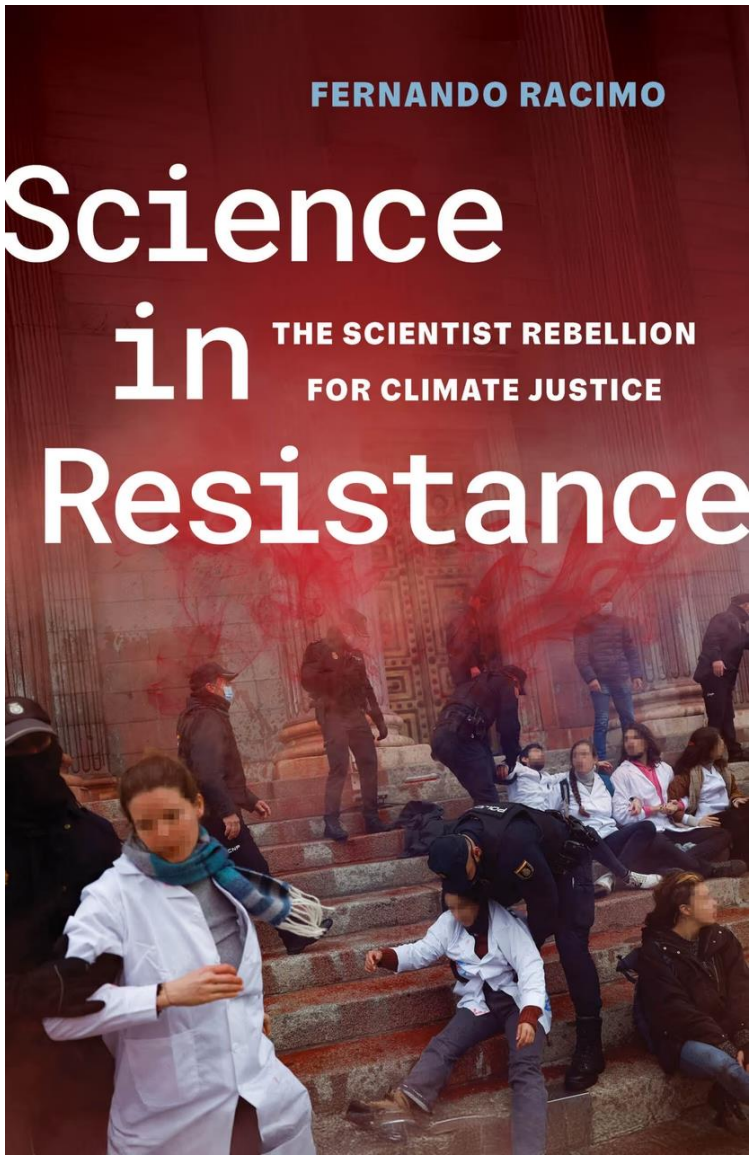


Difficult is not the same as impossible.

To hope is to... know the powerful have their weaknesses, and we who are supposed to be weak have great power together, power to change the world, have done so before and will again. To know that the future will be what we make of it in the present. To know that joy can appear in the midst of crisis, and that a crisis is a crossroads.

Questions?

clare.kelly@tcd.ie



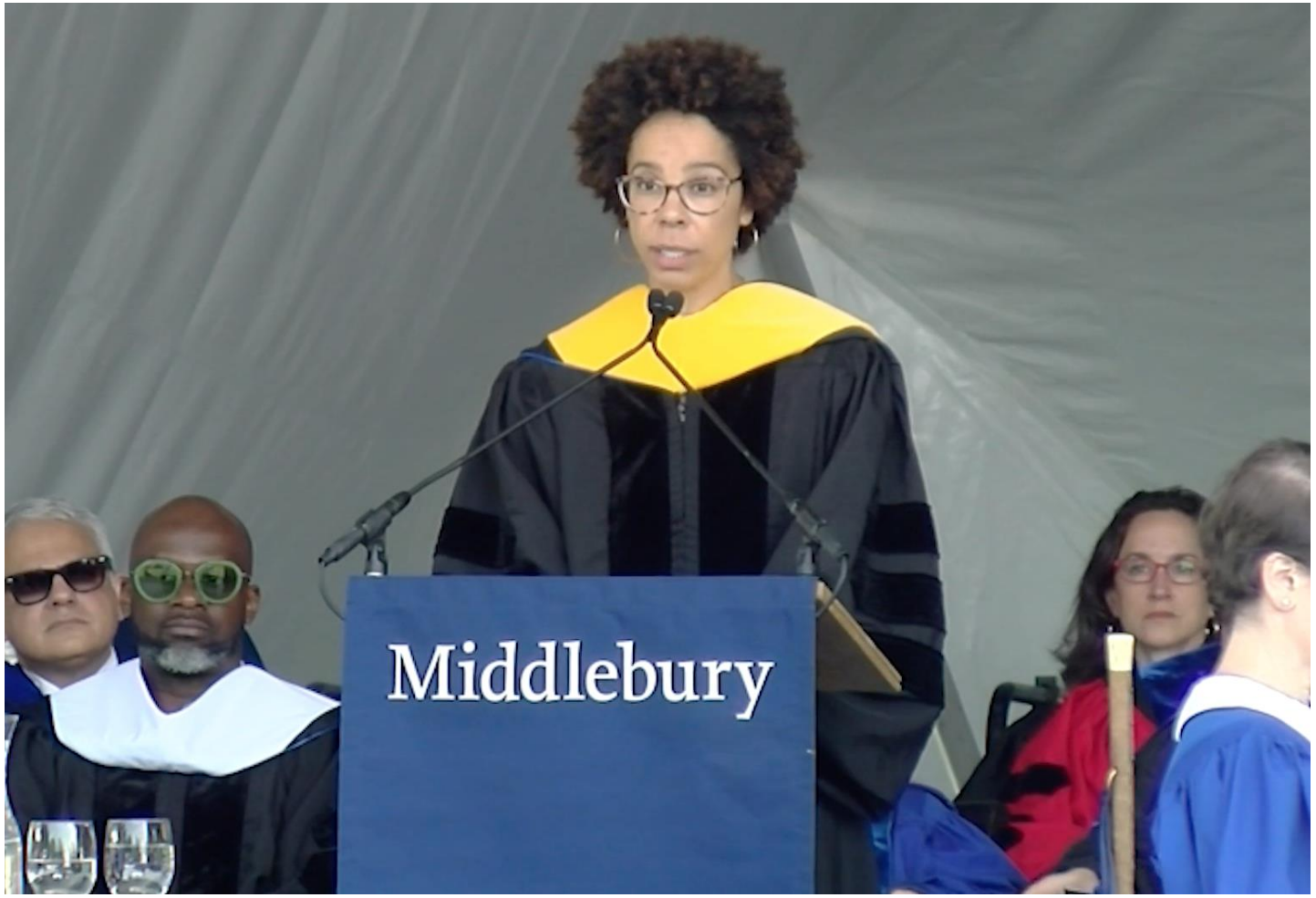
Join scientist Dr Fernando Racimo from the University of Copenhagen as he discusses his new book on why scientists around the world are rising up for climate and ecological justice.

Date and Time
Monday December 8th 18:30-20:00

Location
Trinity College Dublin - Arts Block – Ed Burke Theatre

https://www.eventbrite.com/e/science-in-resistance-the-scientist-rebellion-for-climate-justice-tickets-1921524113349

CLIMATE JUSTICE UNIVERSITIES UNION



Be tenacious on behalf of life on Earth.
You were made for this moment.
Dr Ayana Elizabeth Johnson

https://vimeo.com/831002020
https://www.middlebury.edu/announcements/2023/06/2023-middlebury-commencement-address-dr-ayana-elizabeth-johnson