

# Going Beyond Research: Climate Change Engagement by Scientists

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# Sixth Assessment Report

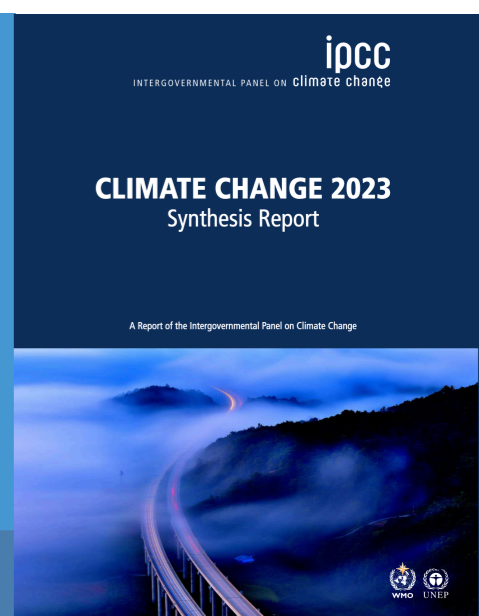
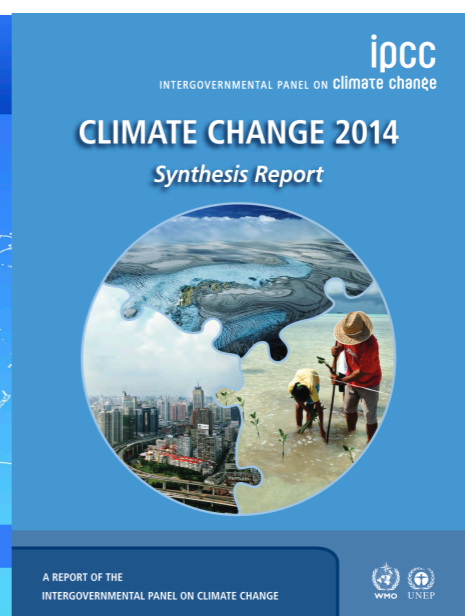
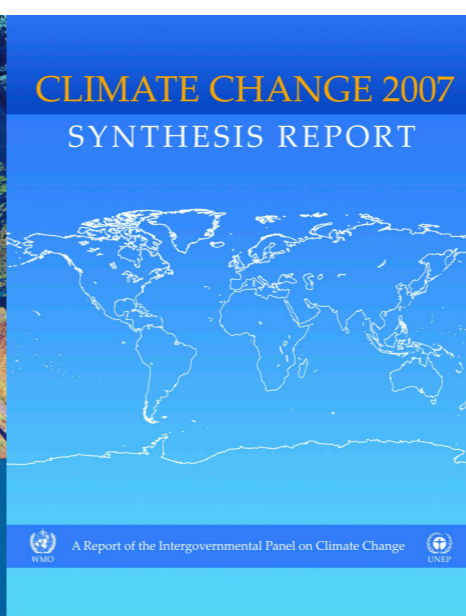
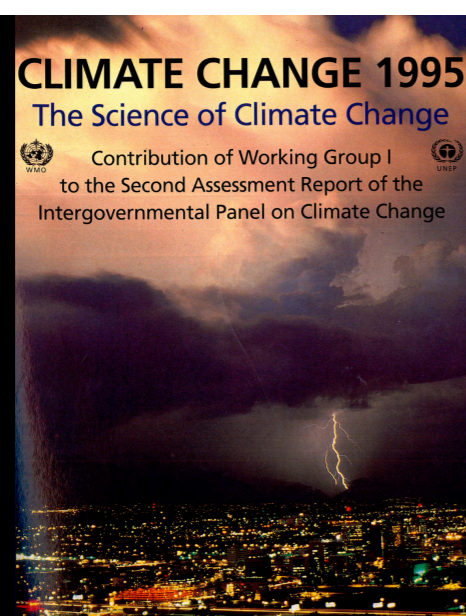
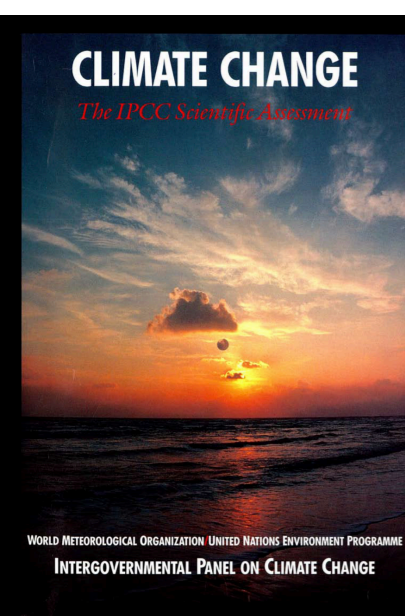
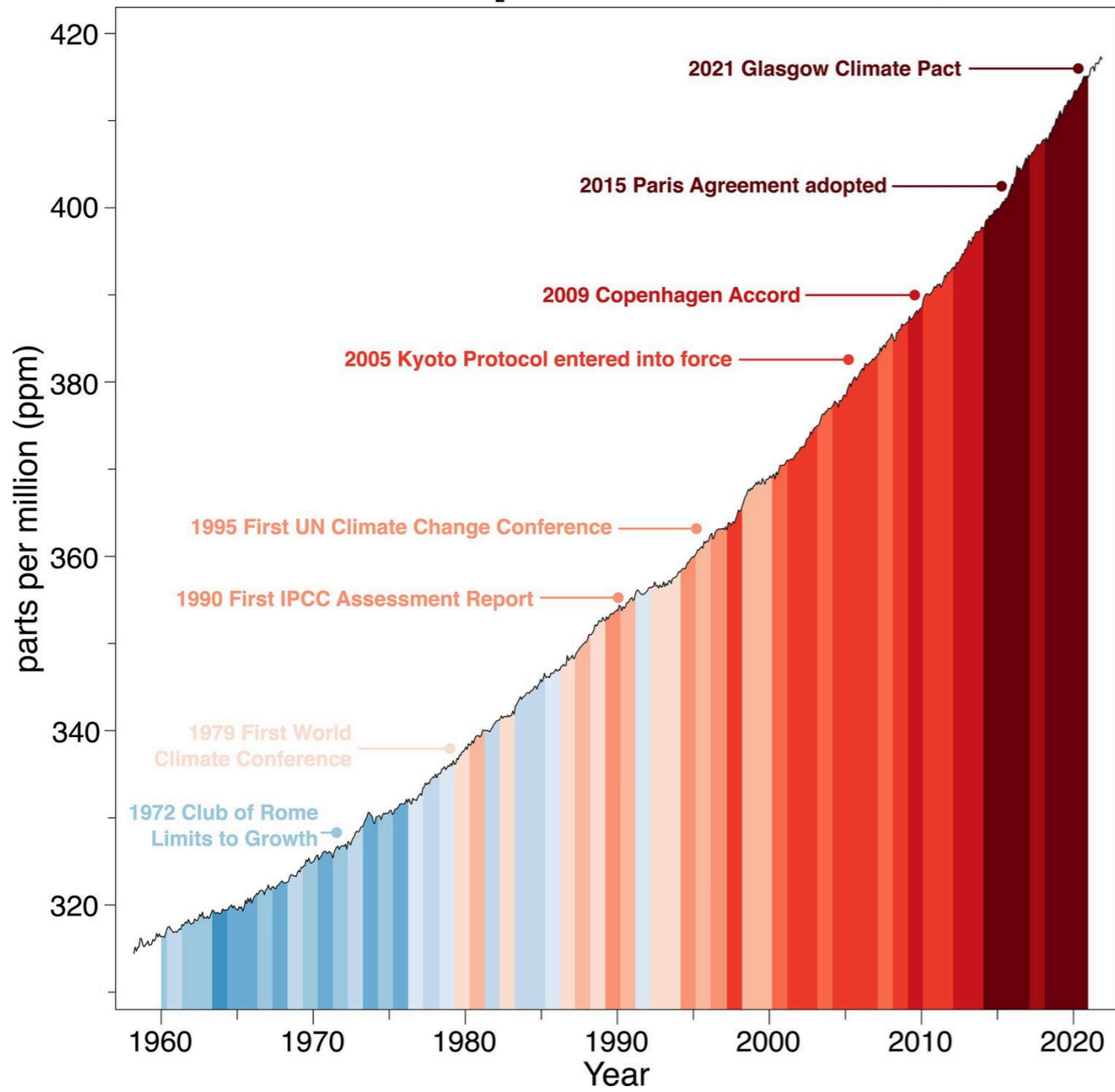
## Synthesis Report

20 March 2023

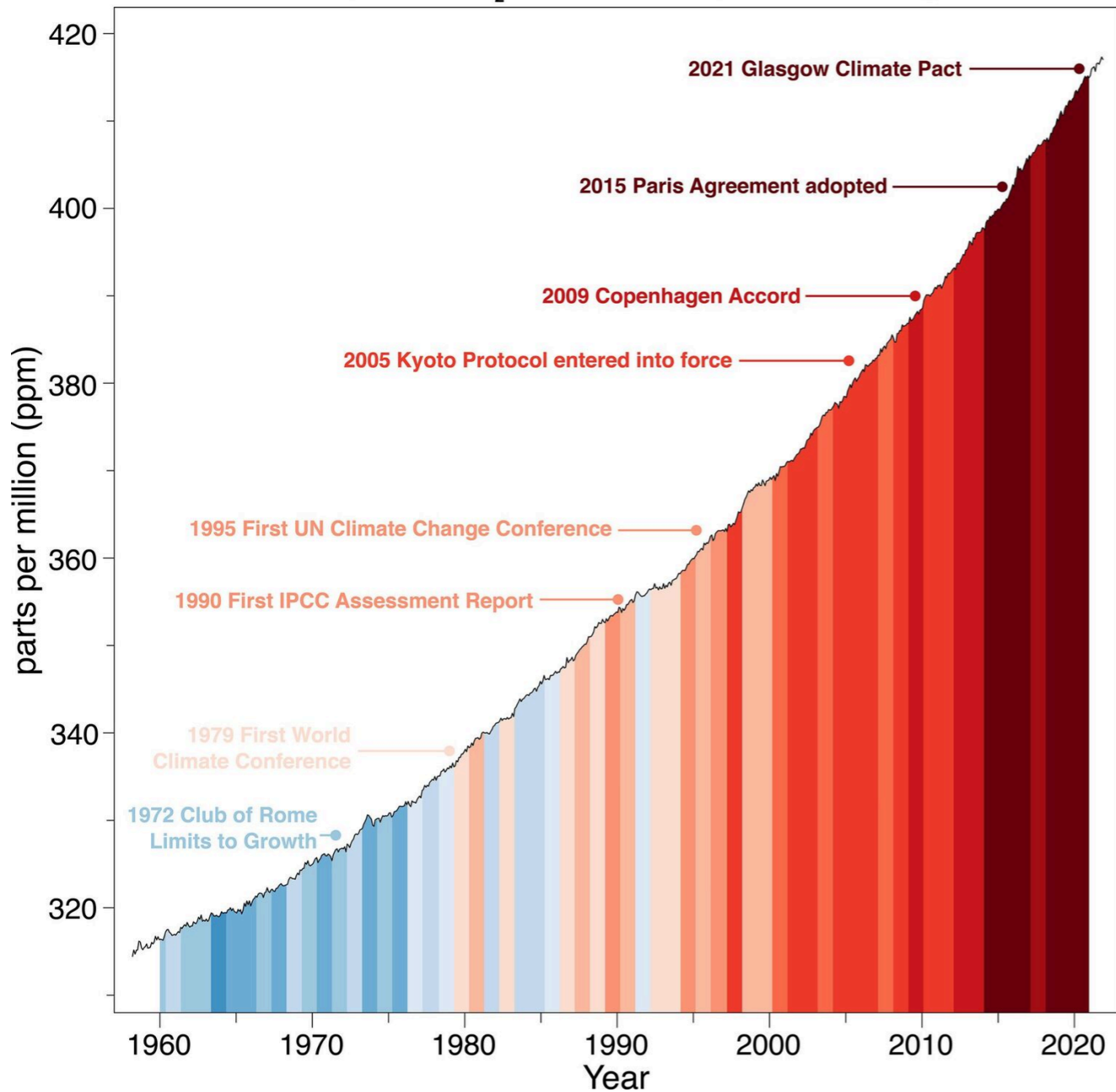
**“There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all.”**



# Trends in Atmospheric CO<sub>2</sub> vs Global Temperature Change

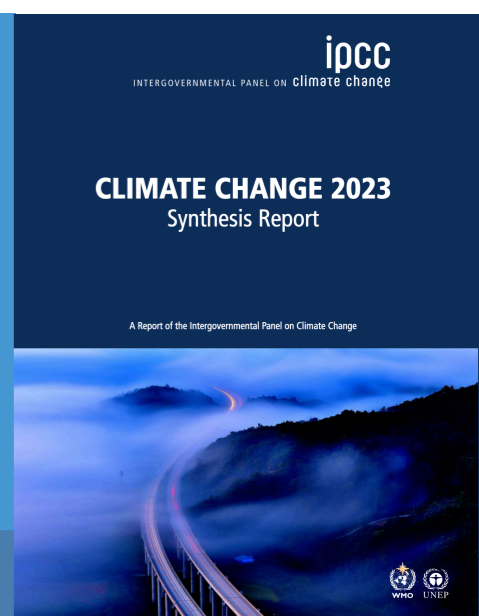
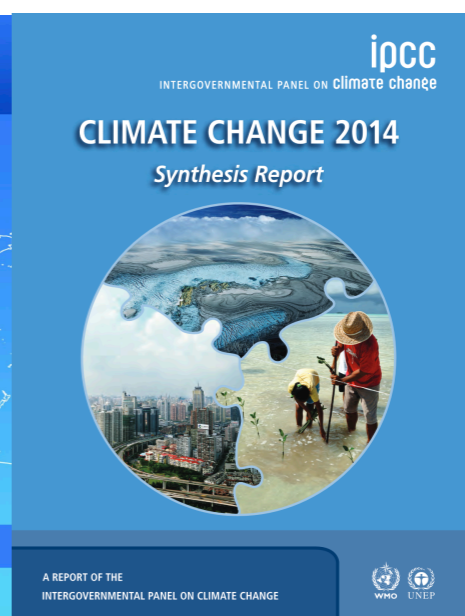
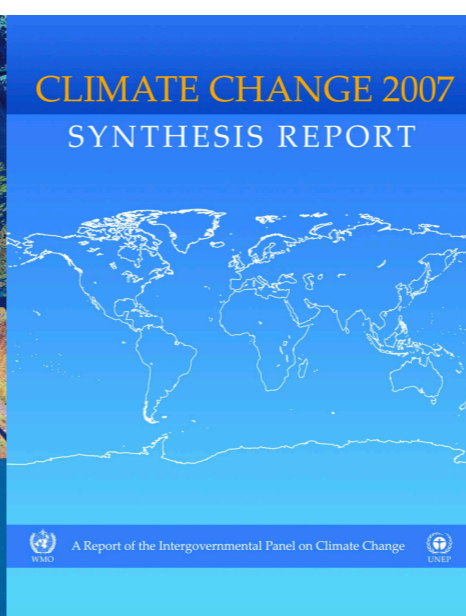
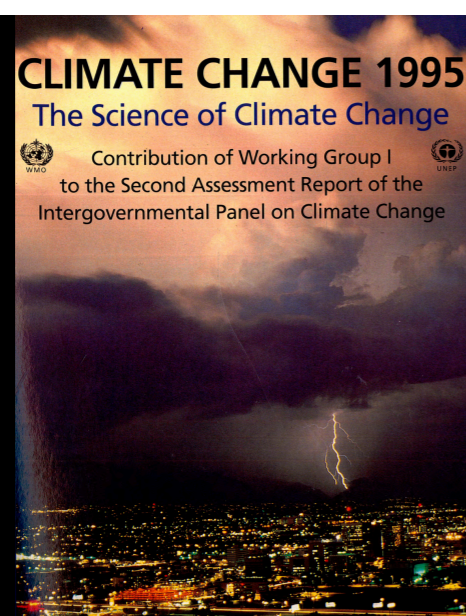
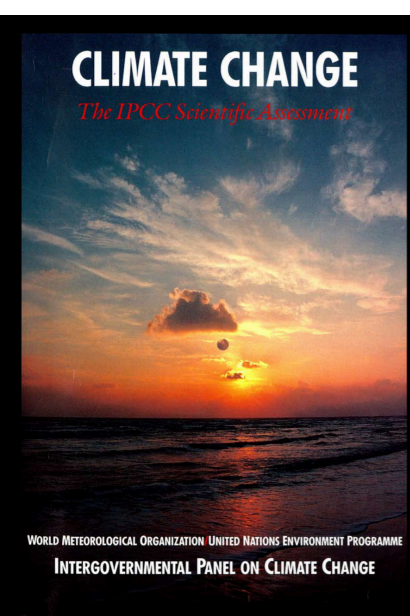


Trends in Atmospheric CO<sub>2</sub> vs Global Temperature Change



# Broken Record

Temperatures hit new highs, yet world fails to cut emissions (again)







## Scientists must act on our own warnings to humanity

[Charlie J. Gardner](#) & [Claire F. R. Wordley](#)

*Nature Ecology & Evolution* 3, 1271–1272 (2019) | [Cite this article](#)

32k Accesses | 37 Citations | 1543 Altmetric | [Metrics](#)

From Publications to Public Actions: The Role of Universities in Facilitating Academic Advocacy and Activism in the Climate and Ecological Emergency

[Charlie J. Gardner](#)<sup>1\*</sup> [Aaron Thierry](#)<sup>2</sup> [William Rowlandson](#)<sup>3</sup> [Julia K. Steinberger](#)<sup>4</sup>

Comment | [Published: 29 August 2022](#)

## Civil disobedience by scientists helps press for urgent climate action

[Stuart Capstick](#), [Aaron Thierry](#), [Emily Cox](#), [Oscar Berglund](#), [Steve Westlake](#) & [Julia K. Steinberger](#)

*Nature Climate Change* 12, 773–774 (2022) | [Cite this article](#)

11k Accesses | 24 Citations | 1608 Altmetric | [Metrics](#)

## Less Talk, More Walk: Why Climate Change Demands Activism in the Academy

Jessica F. Green

[Author and Article Information](#)

*Daedalus* (2020) 149 (4): 151–162.

A better knowledge is possible:  
Transforming environmental science for  
justice and pluralism ☆

[Esther Turnhout](#)

## Point of View: The biospheric emergency calls for scientists to change tactics



[Fernando Racimo](#), [Elia Valentini](#), [Gaston Rijo De León](#), [Teresa L Santos](#), [Anna Norberg](#), [Lane M Atmore](#), [Myranda Murray](#), [Sanja M Hakala](#), [Frederik Appel Olsen](#), [Charlie J Gardner](#), [Julia B Halder](#) [« see less](#)

SCIENCE POLICY

## Pathways for diversifying and enhancing science advocacy

[Fernando Tormos-Aponte](#)<sup>1,2\*</sup>, [Phil Brown](#)<sup>3</sup>, [Shannon Dosemagen](#)<sup>4</sup>, [Dana R. Fisher](#)<sup>5</sup>, [Scott Frickel](#)<sup>6</sup>, [Norah MacKendrick](#)<sup>7</sup>, [David S. Meyer](#)<sup>8</sup>, [John N. Parker](#)<sup>9</sup>

POINT OF VIEW

## Rethinking academia in a time of climate crisis

[ANNE E URAI\\*](#) AND [CLARE KELLY\\*](#)

## A role for provocative protest

[The Lancet Planetary Health](#)

Open Access • Published: November, 2022 • DOI: [https://doi.org/10.1016/S2542-5196\(22\)00287-X](https://doi.org/10.1016/S2542-5196(22)00287-X)

# de Volkskrant

Opinie: Een geslaagde energietransitie begint met minder in plaats van meer

nrc

Een optimistisch klimaatverhaal kunnen we goed gebruiken, maar het moet wel kloppen

Onze leiders doen veel te weinig voor het klimaat. Daarom zijn wij nu zelf aan zet

Het Parool

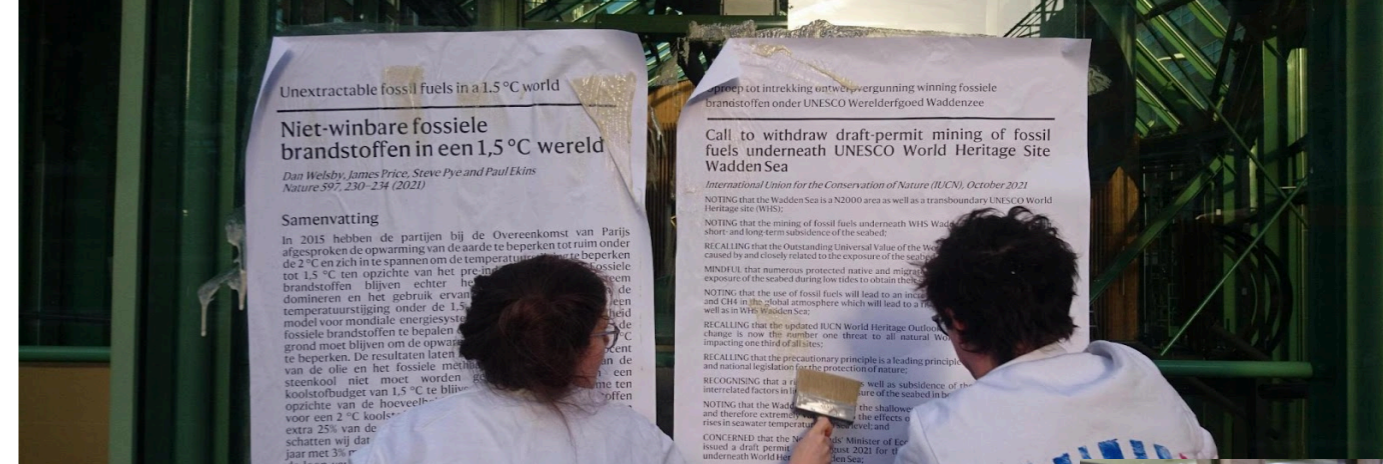
Opinie: 'Er is geen koolstofbudget meer voor rijke landen, stop met koolstofgraaien'

nature

Scientists skip COP28 to demand climate action at home

The Guardian

More than 1,000 climate scientists urge public to become activists





# Research questions

1.

What beliefs do scientists have about climate change and their role?

2.

To what extent do they engage in climate action?

3.

What barriers exist for them to engage in climate action?



# Previous work

 Available access | Research article | First published online July 12, 2018

## Understanding Scientists' Willingness to Engage


[John C. Besley](#)  , [Anthony Dudo](#), [Shupeiyuan](#), and [Frank Lawrence](#)  [View all](#)

## Views of health professionals on climate change and health: a multinational survey study

[John Kotcher, PhD](#)   • [Edward Maibach, PhD](#) • [Jeni Miller, PhD](#) • [Eryn Campbell, MS](#) • [Lujain Alqodmani, MD](#) • [Marina Maiero](#) • et al. [Show all authors](#)

[Open Access](#) • Published: April 07, 2021 • DOI: [https://doi.org/10.1016/S2542-5196\(21\)00053-X](https://doi.org/10.1016/S2542-5196(21)00053-X) •

Majority of German citizens, US citizens and climate scientists support policy advocacy by climate researchers and expect greater political engagement

Viktoria Cologna<sup>1</sup> , Reto Knutti<sup>2</sup>, Naomi Oreskes<sup>3</sup> and Michael Siegrist<sup>1</sup>

Published 21 January 2021 • © 2021 The Author(s). Published by IOP Publishing Ltd

[Environmental Research Letters](#), [Volume 16](#), [Number 2](#)

Use of aviation by climate change researchers: Structural influences, personal attitudes, and information provision

Lorraine Whitmarsh<sup>a,d,e,\*</sup>, Stuart Capstick<sup>b,d,e</sup>, Isabelle Moore<sup>b</sup>  
Corinne Le Quéré<sup>c,d</sup>

NEWS FEATURE | 01 November 2021

**Top climate scientists are sceptical that nations will rein in global warming**

# Sampling



250,000 emails sent

# Survey

**Climate  
Change  
Beliefs  
(3)**

**Theory of  
Change  
(9)**

**Role of  
Scientists  
(4)**

**Credibility  
(2)**

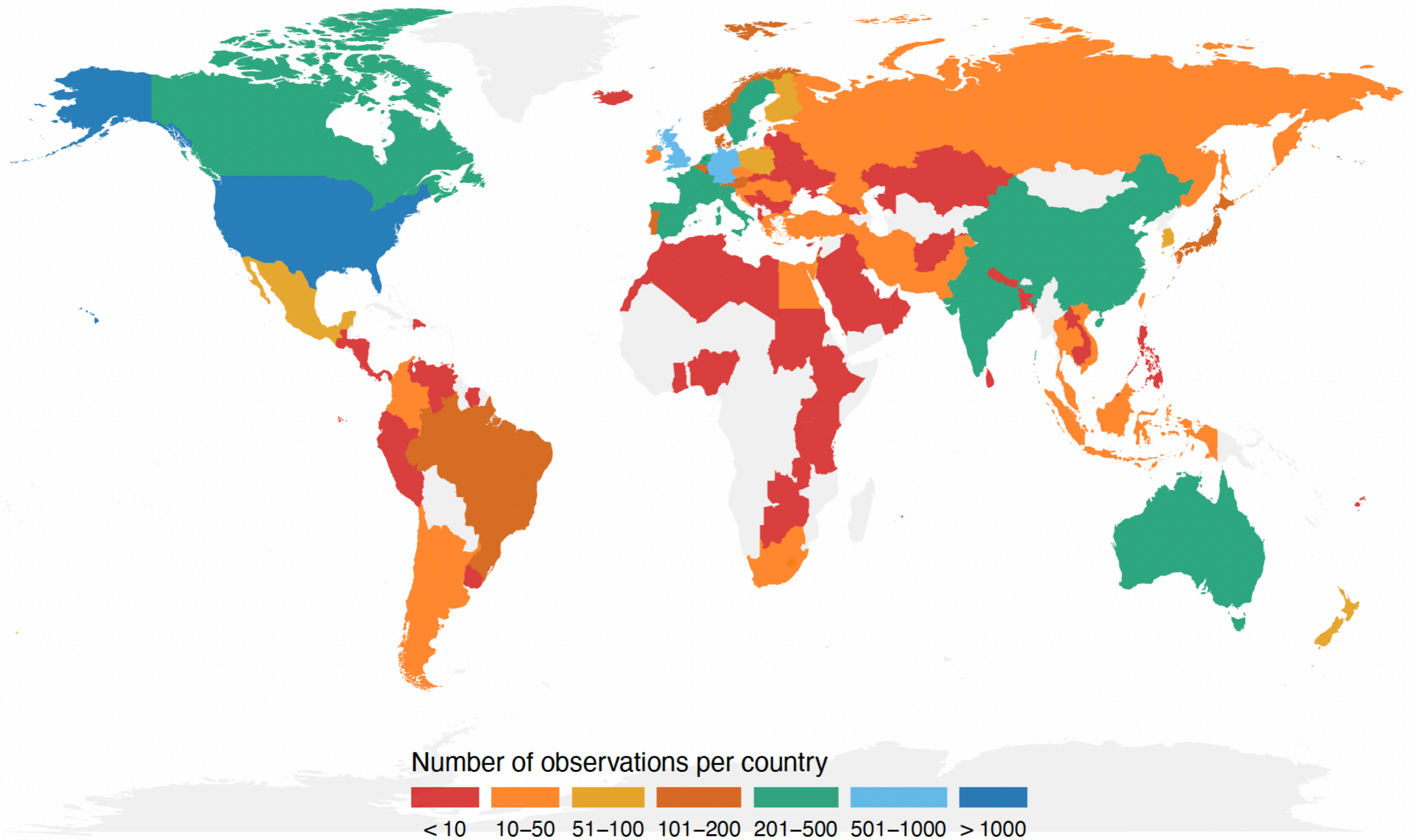
**Individual &  
Collective  
Behaviour  
(15)**

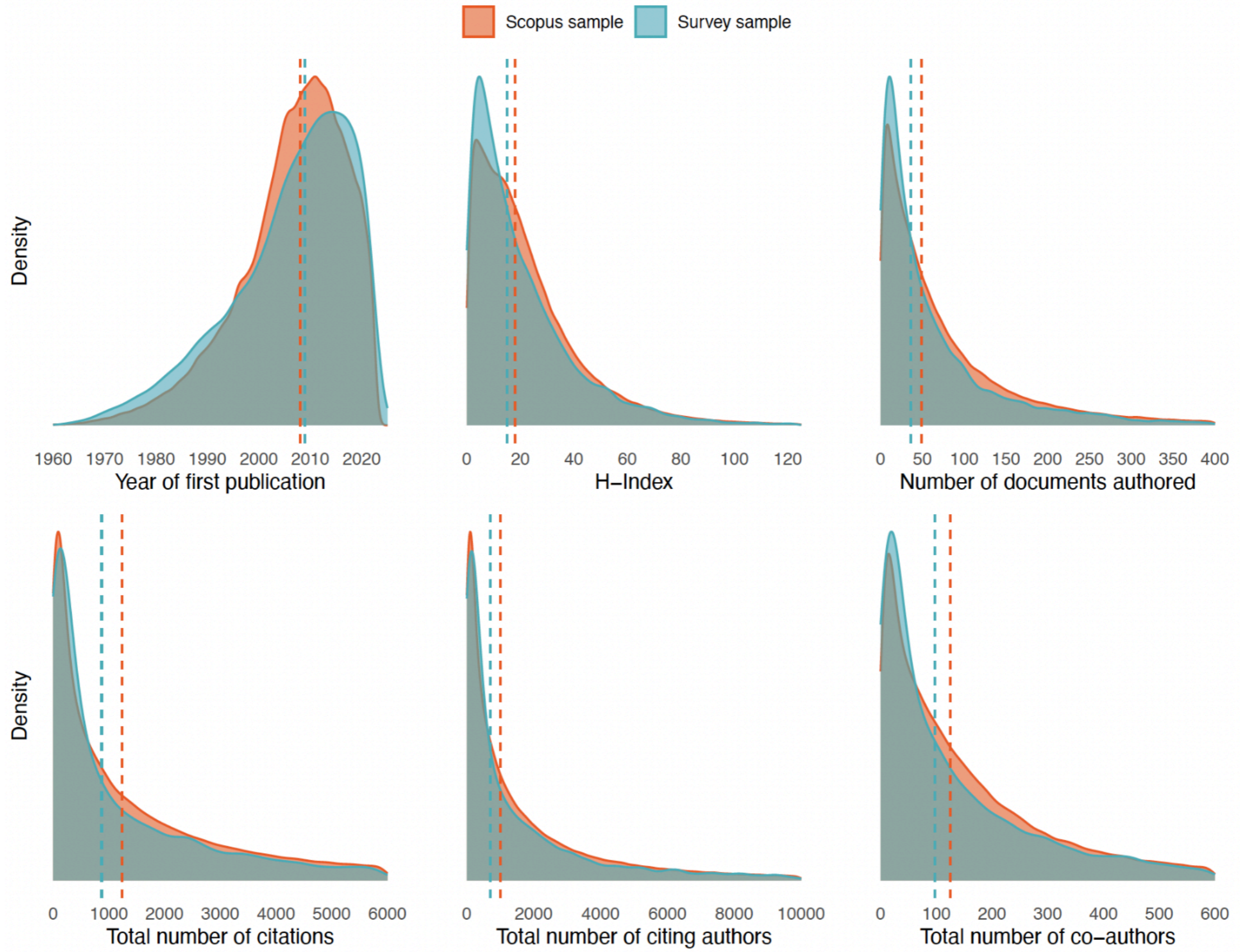
**Barriers to  
Action  
(7)**

**Demo  
graphics**

$N = 9,220$

115 countries, virtually all disciplines



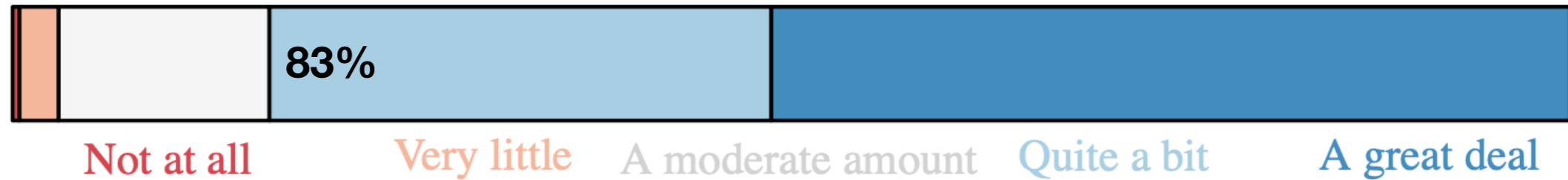


**Extended Data Figure 2. Distribution of Scopus and our sample on key variables.** The dashed lines indicate the median of the respective distributions.

# **Beliefs & Actions**

# Beliefs about climate change & solutions

Overall, how worried are you about climate change?



Fundamental changes to society, politics, and economics required



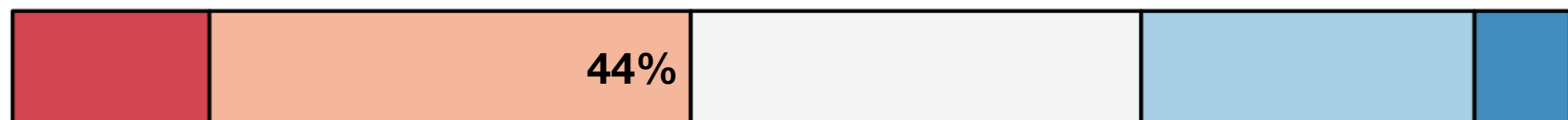
Significant changes to personal behavior and lifestyle required



Environmental activist groups can drive positive change



Advances in technology will largely solve climate change



Strongly Disagree    Disagree    Neither agree / disagree    Agree    Strongly agree



# Responsibility & role of scientists and academics

Scientific or academic institutions are responsible

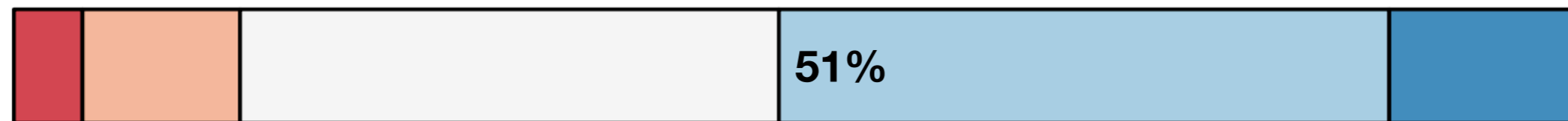


Feel responsible as a scientist or academic

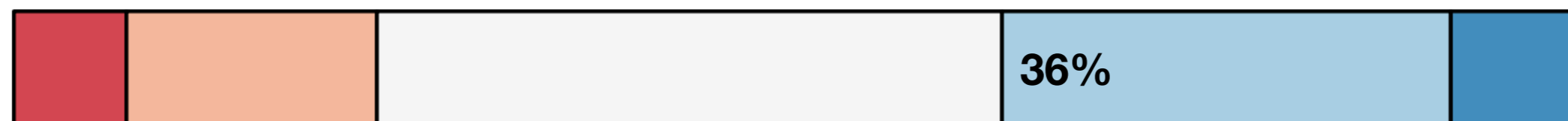


Not at all      Very little      A moderate amount      Quite a bit      A great deal

Scientists and academics should engage more in advocacy



Scientists and academics should engage more in legal protest



Engaging in advocacy would diminish scientists' credibility



Strongly Disagree      Disagree      Neither agree / disagree      Agree      Strongly agree

# Advocacy & activism behaviors

Talking about climate change with others



Engaging in climate change advocacy



Donating to a relevant organization



Participating in legal climate change–related protests



Participating in nonviolent civil disobedience actions



Not willing to

Willing to

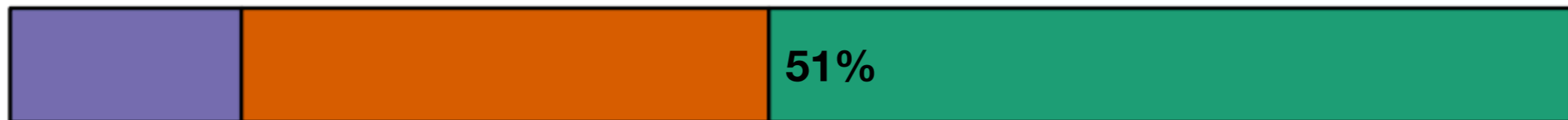
Already do

# Lifestyle behaviors

Reducing car usage



Reducing the amount of flying



Increasing energy efficiency at home



Following a mostly vegetarian or vegan diet



Having fewer or no children



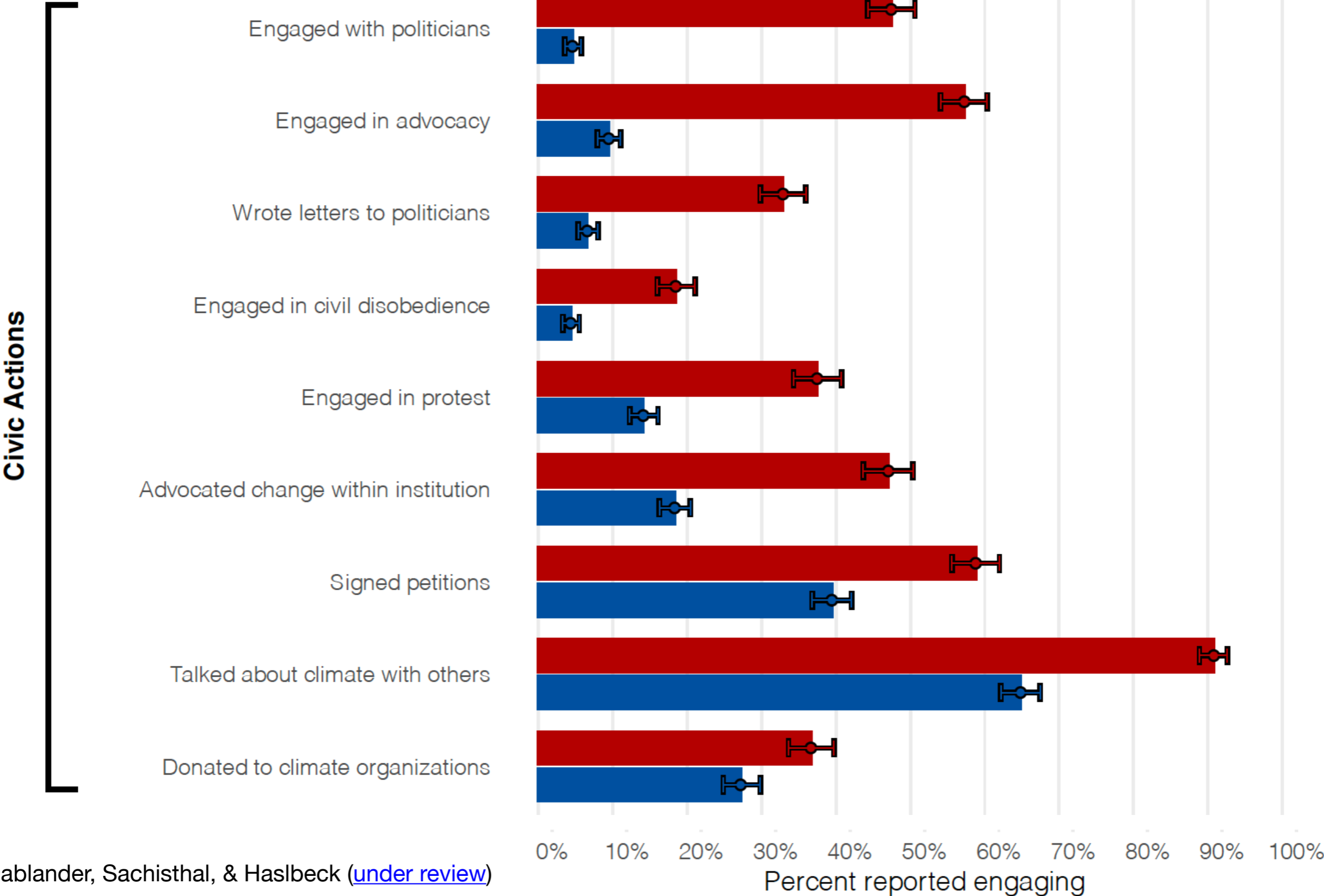
Not willing to

Willing to

Already do

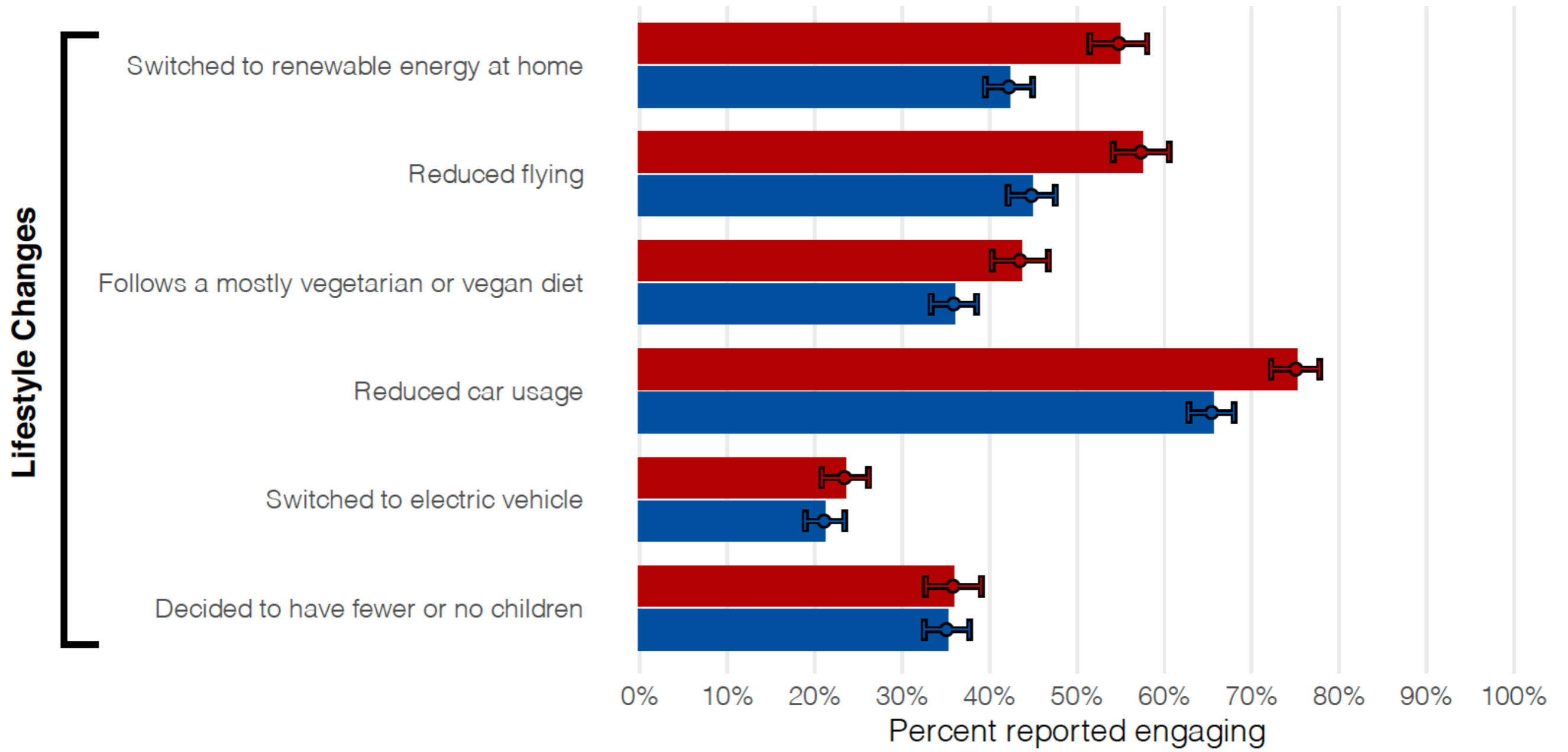
# Climate actions by climate and non-climate researchers

Climate researchers (n = 1,565)    Non-climate researchers (n = 2,257)



# Climate actions by climate and non-climate researchers

Climate researchers (n = 1,565)    Non-climate researchers (n = 2,257)

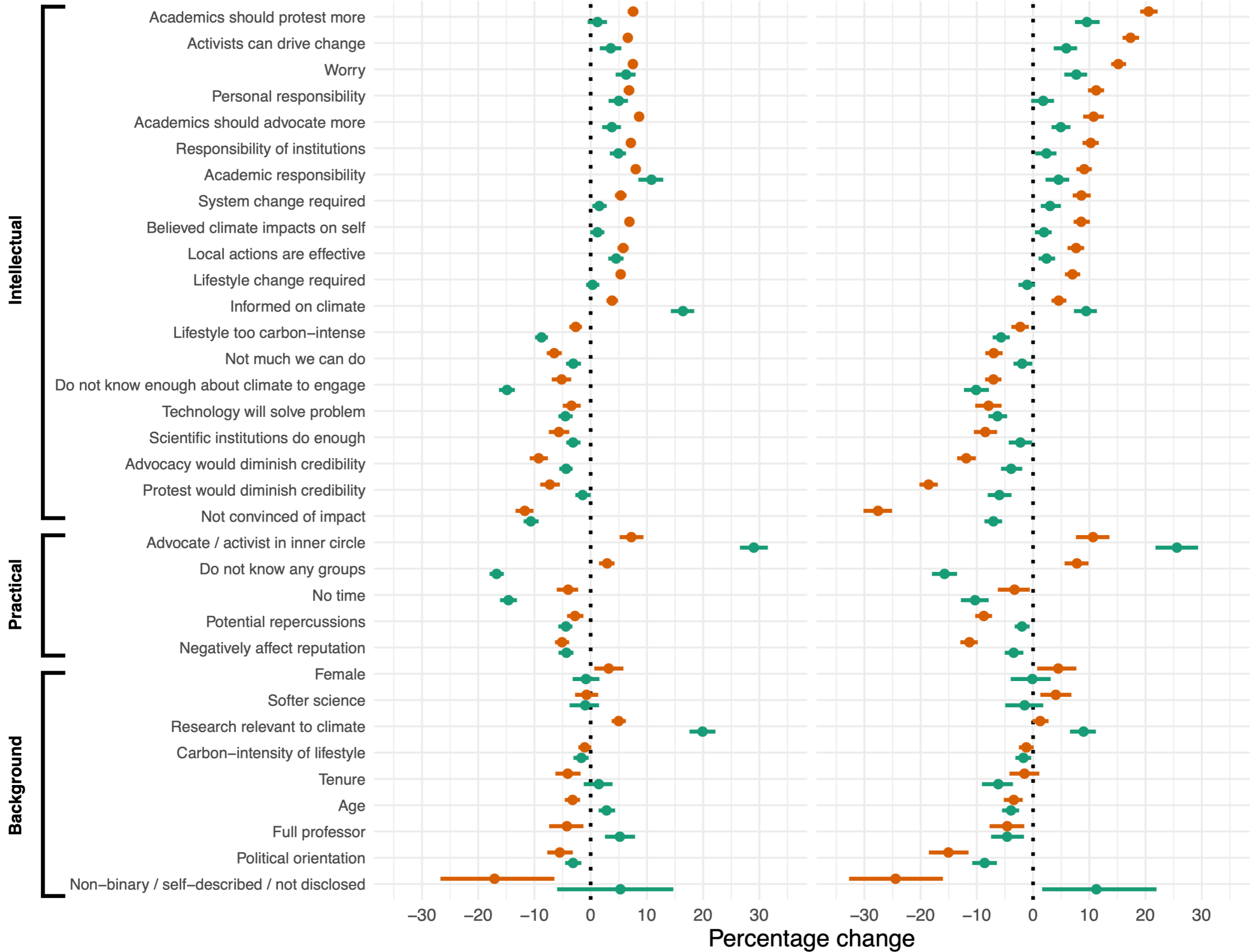


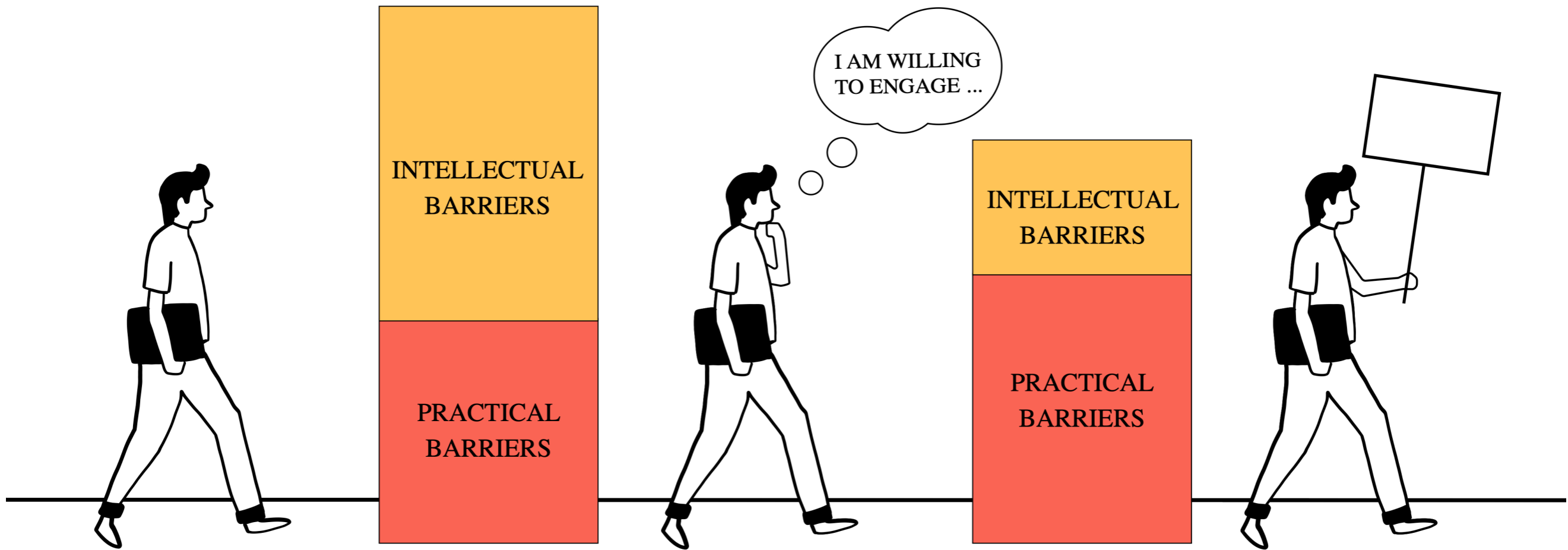
# Understanding Barriers

● Already do vs willing to    ● Willing to vs not willing to

### Advocacy

### Protest





### Intellectual Barriers

- Low levels of worry (A & P)
- Lack of knowledge (A & P)
- Lack of efficacy beliefs (A & P)
- Perceived responsibility (A & P)
- Not the role of scientists (A & P)
- Do not identify with activists (P)
- Disagree with activist ideology & strategy (A & P)

### Practical Barriers

- Fear of losing credibility (A & P)
- “Unsuitable” personality (A & P)
- No advocate in inner circle (A & P)
- Lack of skills (A)
- Fear of repercussions (P)

### Intellectual Barriers

- Not the role of scientists (P)
- Lack of knowledge (A & P)
- Own carbon footprint (A & P)

### Practical Barriers

- Lack of skills (A)
- Fear of losing credibility (A & P)
- Not knowing any groups (A & P)
- Lack of time (A & P)
- Lack of opportunity (A & P)
- No advocate in inner circle (A & P)




# Overcoming barriers

- Intellectual
  - Facilitate interaction with those who are worried and engaged
  - Education (changes to curricula)
- Practical
  - Institutional reform (allocate more time to engage with society; reward / normalize climate action)
  - Skill sharing, training for advocacy
  - International groups can help setup local groups

Scientist Rebellion at EGU 24  
Events co-organized by geoscientists active in Scientist Rebellion during EGU24 in Vienna

<b>Monday 15th</b> <b>08:30-12:30</b> <b>Oral Session EOS4.5</b> Moving beyond research-as-usual: Exploring and assessing the role of geoscientists in the face of the climate and ecological emergencies	<b>Tuesday 16th</b> <b>10:45-12:30</b> <b>Poster Session EOS4.5</b> Moving beyond research-as-usual: Exploring and assessing the role of geoscientists in the face of the climate and ecological emergencies  <b>19:00-20:00</b> <b>Short Course SC2.7</b> Igniting Academic Activism for Urgent Climate Action <b>Followed by networking dinner</b>	<b>Thursday 18th</b> <b>12:45-13:30</b> <b>Splinter Meeting SPM41</b> Climate activism in academia: Scientist Rebellion - what we do and how to get involved
<b>16:15-18:00</b> <b>Short Course SC2.5</b> Ethics for geoscientists in a time of crisis		<b>Friday 19th</b> <b>14:00-15:45</b> <b>Great Debate GDB6</b> If informing is not enough, how should scientists engage to accelerate the social transformation required by climate change and biodiversity collapse?

More info and updates 

## Rethinking academia in a time of climate crisis

ANNE E URAI\* AND CLARE KELLY\*

From Publications to Public Actions: The Role of Universities in Facilitating Academic Advocacy and Activism in the Climate and Ecological Emergency

# Summary

- A large majority of scientists across disciplines are (very) worried and believe we need fundamental system change
- A majority believes that scientists and scientific institutions should engage more
- Many scientists already engage in some lifestyle and civic actions
- We identified a number of intellectual and practical barriers to engage in advocacy and protest
- See [fabiandablander.com](http://fabiandablander.com) for links to the slides, preprints, etc.

**Thank you!**

# Joint work with



Maien Sachisthal



Nana-Maria Grüning



Viktoria Cologna

Noel Strahm



Alison Green



Cameron Brick



Adam Aron

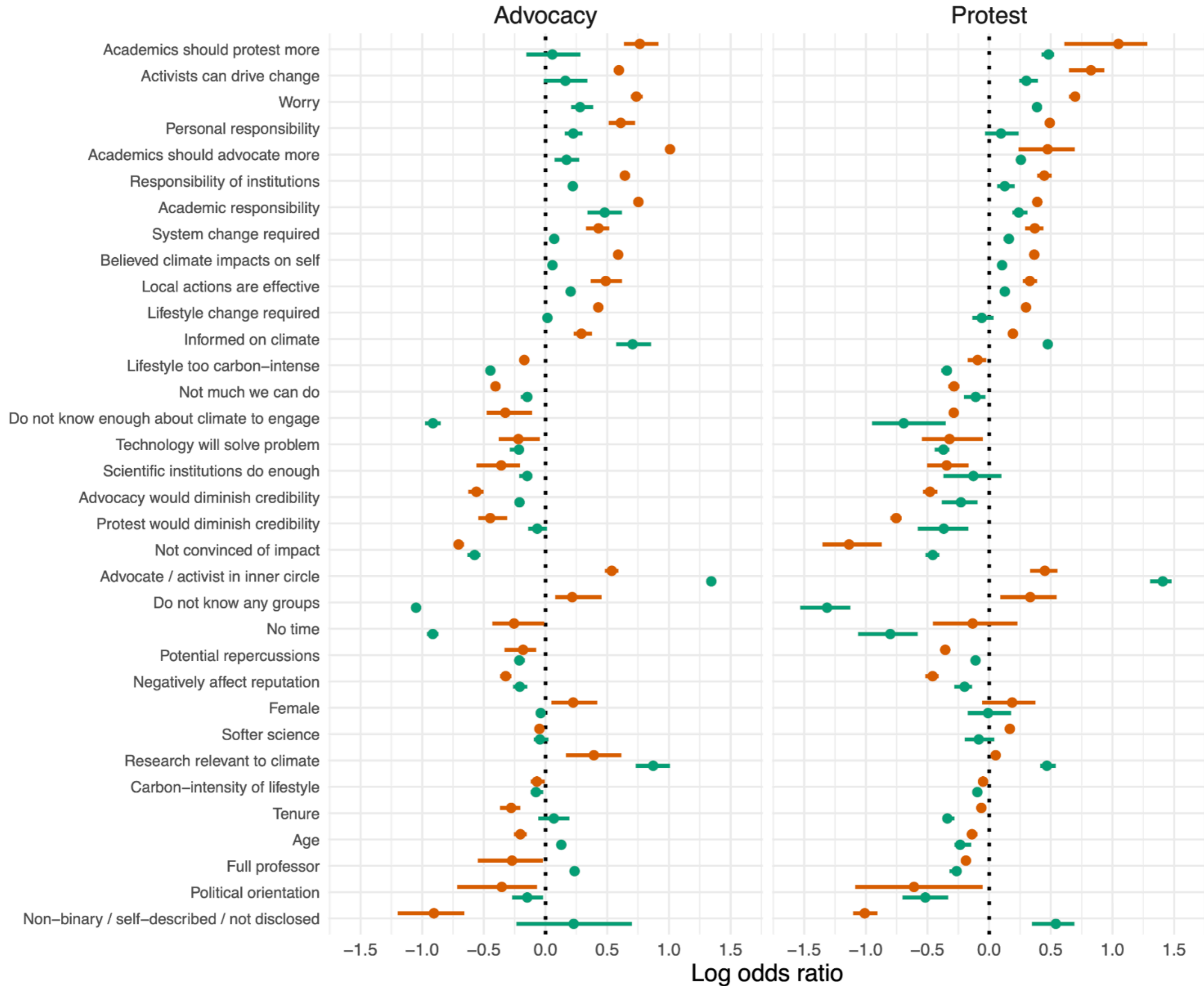


Jonas Haslbeck

# Appendix

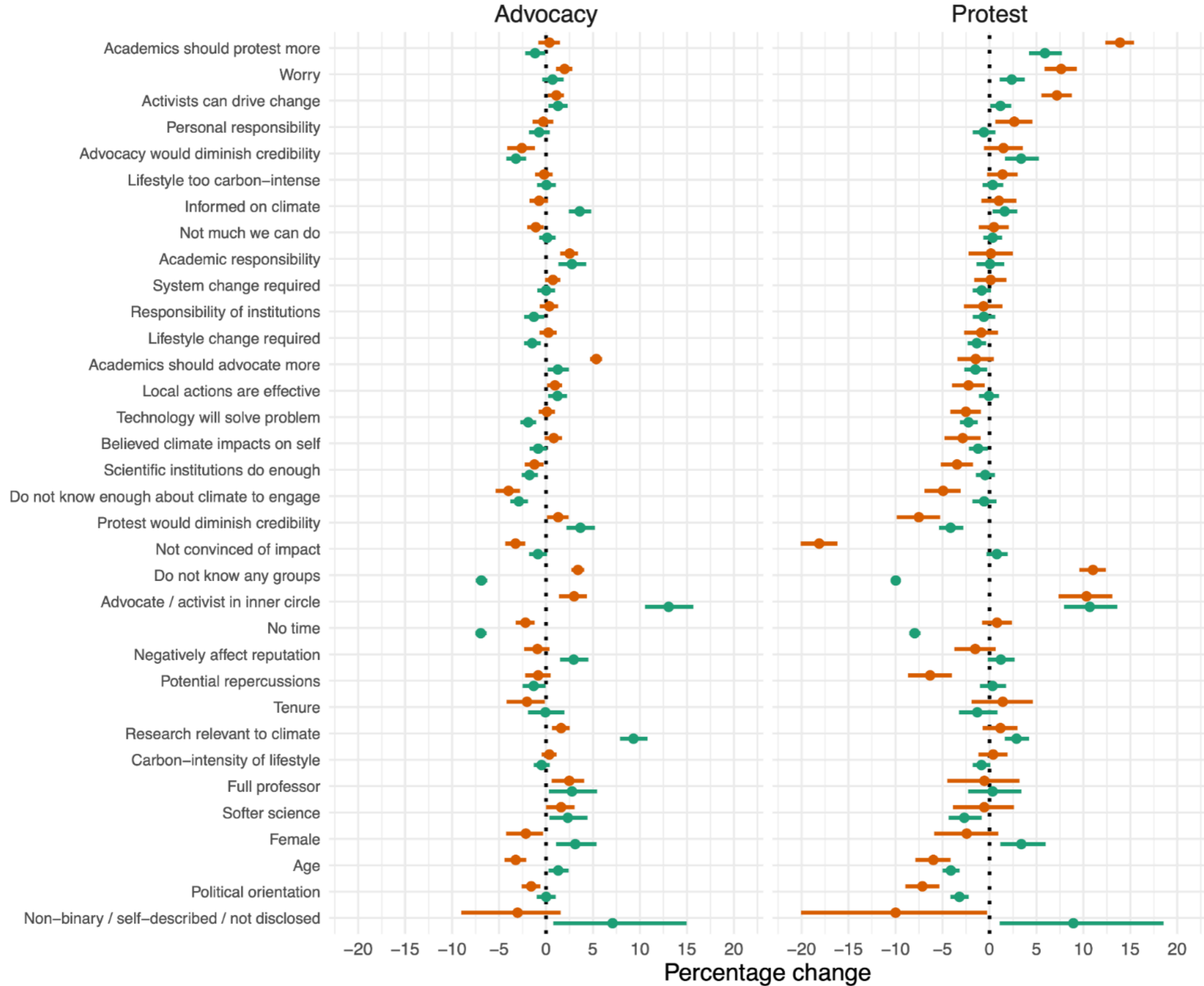
# Heterogeneity of effects across countries

● Already do vs willing to 
 ● Willing to vs not willing to



# Multiple logistic regression results

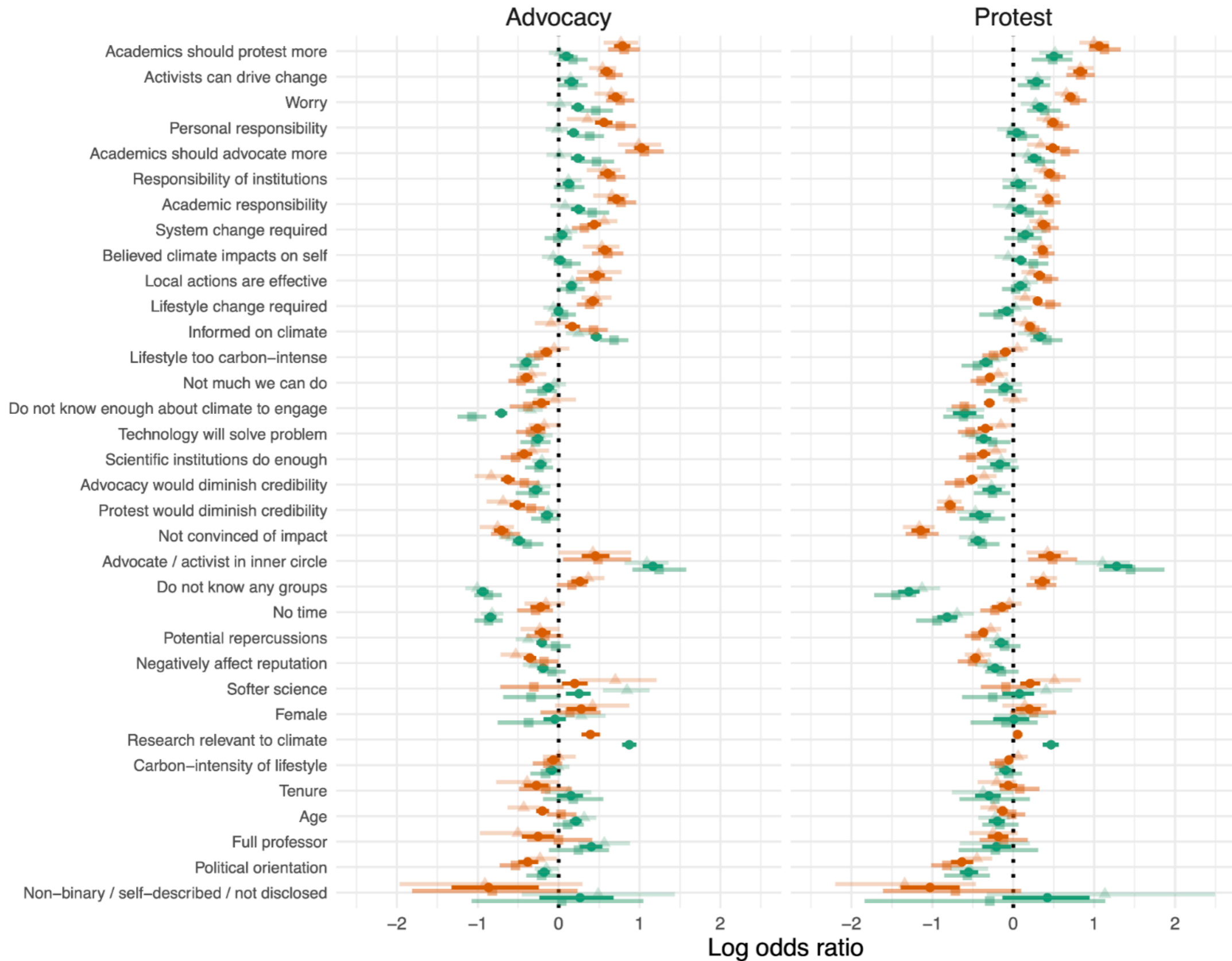
● Already do vs willing to   
 ● Willing to vs not willing to



# Log odds ratios across research relatedness to climate change

● Already do vs willing to ● Willing to vs not willing to

■ -2 SDs ● Mean research relatedness to climate ▲ +2 SDs





# Civil disobedience results

● Already do vs willing to ● Willing to vs not willing to

