

Climate change engagement of scientists

In the format provided by the
authors and unedited

Supplementary Text

Materials

The following three emails were sent to authors:

1. Invitation email:

Dear Colleague,

We – Maien Sachisthal (University of Amsterdam, Netherlands) and Jonas Haslbeck (Maastricht University, Netherlands), in collaboration with an international research team – are inviting you to participate in a global study on scientists’ and academics’ considerations when thinking about their professional role in times of climate change.

We are contacting you because we aim to obtain a **representative sample** across disciplines and you recently published in a top-tier journal in your field. Your **voluntary participation** is highly appreciated. To this end, we would like to ask you for 10 minutes of your time to fill out our survey, which can be accessed here:

Survey Link:

Or copy and paste the URL below into your internet browser

The study has been approved by the ethics committee of the University of Amsterdam (Netherlands), with protocol number FMG-925. Your privacy is guaranteed and only anonymised data will be published. Please do not hesitate to reach out to us if you have any questions or need

additional information. You can reach us by replying to this email or by sending an email to climatesurvey-fmg@uva.nl.

We would like to thank you for your support.

Thank you and kind regards,

Maijen Sachisthal & Jonas Haslbeck

Dr. Maijen Sachisthal (University of Amsterdam)

Dr. Fabian Dablander (University of Amsterdam)

Dr. Nana-Maria Grüning (Charité Berlin)

Dr. Viktoria Cologna (Harvard University)

Dr. Cameron Brick (University of Amsterdam)

Dr. Alison Green, Prof. Adam Aron (University of California San Diego)

Dr. Jonas Haslbeck (Maastricht University)

[Click here to unsubscribe for future reminders about this study:](#)

2. First reminder email:

Dear Colleague,

This is a kind reminder to participate in our **global study** on scientists' and academics' considerations when thinking about their professional role in times of climate change – initiated by Maijen Sachisthal (University of Amsterdam, Netherlands) and Jonas Haslbeck (Maastricht University, Netherlands).

As an expert in your academic field with a recent publication in a top peer-reviewed journal, your participation would be highly appreciated. Filling in the survey takes around 10 minutes of your time, and the survey can be accessed here:

Survey Link:

Or copy and paste the URL below into your internet browser:

The study has been approved by the ethics committee of the University of Amsterdam (Netherlands), with protocol number FMG-925. Your privacy is guaranteed and only anonymised data will be published. Please do not hesitate to reach out to us if you have any questions or need additional information. You can reach us by replying to this e-mail or by sending an email to climatesurvey-fmg@uva.nl.

We would like to thank you for your support.

Thank you and kind regards,

Maijen Sachisthal & Jonas Haslbeck

Dr. Maijen Sachisthal (University of Amsterdam)

Dr. Fabian Dablander (University of Amsterdam)

Dr. Nana-Maria Grüning (Charité Berlin)

Dr. Viktoria Cologna (Harvard University)

Dr. Cameron Brick (University of Amsterdam)

Dr. Alison Green, Prof. Adam Aron (University of California San Diego)

Dr. Jonas Haslbeck (Maastricht University)

Click here to unsubscribe for future reminders about this study:

3. Final reminder email:

Dear Colleague,

This is the final reminder to participate in our **global study** on scientists' and academics' considerations when thinking about their professional role in times of climate change – initiated by Maien Sachisthal (University of Amsterdam, Netherlands) and Jonas Haslbeck (Maastricht University, Netherlands).

Your **voluntary participation** in the survey is invaluable to gather **representative data** on the views of scientists and academics across different fields of study. We hope that you will take 10 minutes of your time to contribute to this important study and help us gather insights into the current state of academics' views on their role in times of climate change. The survey can be accessed here:

Survey Link:

Or copy and paste the URL below into your internet browser:

The study has been approved by the ethics committee of the University of Amsterdam (Netherlands), with protocol number FMG-925. Your privacy is guaranteed and only anonymised data will be published. Please do not hesitate to reach out to us if you have any questions or need additional information. You can reach us by replying to this e-mail or by sending an email to climatesurvey-fmg@uva.nl.

We would like to thank you for your support.

Thank you and kind regards,

Maijen Sachisthal & Jonas Haslbeck

Dr. Maijen Sachisthal (University of Amsterdam)

Dr. Fabian Dablander (University of Amsterdam)

Dr. Nana-Maria Grüning (Charité Berlin)

Dr. Viktoria Cologna (Harvard University)

Dr. Cameron Brick (University of Amsterdam)

Dr. Alison Green, Prof. Adam Aron (University of California San Diego)

Dr. Jonas Haslbeck (Maastricht University)

The respondents were informed about the aim of the study and were asked to give consent for participation with the following informed consent:

The Role of Scientists and Academics in Times of Climate Change

Thank you for your interest in participating in this survey. Completing it will take around 10 minutes. Before you begin, we would like to inform you about the background and procedure of this research.

Research goal

Our goal is to find out which considerations scientists and academics across the globe make when thinking about their professional role in times of climate change. We are interested in their views

about climate change itself and ways of engaging with it. Next to questions with fixed answer categories, we also provide open text fields to capture any additional considerations.

Voluntary participation

Participation is completely voluntary. You can stop participating at any point during the study, without any consequences.

Privacy

We treat your personal data confidentially, as required by law (GDPR). Personal data are data that can be traced back to you individually, either directly or indirectly. When working with (personal) data, researchers may use external parties, for instance when administering online surveys. In that case, the appropriate contracts with these parties have been arranged in order to warrant your privacy. We constructed a representative sample of scientists from the Scopus database, from which we also obtained email addresses of first authors. Email Addresses were used to contact the authors and will be deleted as soon as possible. Responses are linked to the Personal ID of authors for statistical post-stratification to retain representative results.

Data sharing

The results of this study will be shared through a public database (open access), without any directly identifying personal data.

Research team

This study is led by a team of researchers from the University of Amsterdam, University Maastricht, Charité Berlin, the University of California San Diego, and Harvard University. Your personal data are processed only by researchers of the University of Amsterdam.

Further information

If you have any questions about the study, either before you participate or afterwards, please feel free to contact the research team via climatesurvey-fmg@uva.nl. You can direct any formal complaints about this study to the member of the Ethics Review Board of the Faculty of Social and behavioural Sciences of the University of Amsterdam by contacting [removed]. If you have any questions or complaints about the processing of your personal data, you can also contact the Data Protection Officer of the University of Amsterdam through [removed].

Thank you!

Dr. Fabian Dablander, Dr. Maien Sachisthal, Dr. Nana-Maria Grüning, Dr. Viktoria Cologna, Dr. Cameron Brick, Dr. Alison Green, Prof. Adam Aron, and Dr. Jonas Haslbeck

Determinants of lifestyle and civic action behaviours

We explored which characteristics and beliefs of scientists were associated with six lifestyle and seven civic action behaviours. An example lifestyle item is reducing the amount of flying, and an example civic action is talking about climate change with others. Supplementary Figure 1 shows which variables were associated with the number of lifestyle (green) and civic action (orange) behaviours of scientists; associations were determined employing individual (i.e., for each predictor) multilevel Bayesian binomial regression with a random intercept and random slope for country. For a more detailed analysis of these actions, see Dablander, Sachisthal, & Haslbeck (2024)¹.

Having an advocate/activist in one's inner circle was most strongly related to the number of such actions scientists engage in, in line with research showing the importance of one's social network and similar other's actions (e.g.,^{2,3}) in determining civic actions and lifestyle behaviours^{4,5}. Those who are more informed on climate change and worried more about climate change also engaged in more climate

actions, especially civic actions, confirming prior research on the importance of beliefs and emotions for engaging in climate action ^{6,7}.

Consistent with existing research showing that climate scientists do not necessarily change their lifestyles (e.g., ⁸), doing research on topics related to climate was associated with increased advocacy but much less with lifestyle changes (see also¹). Moreover, those who experienced higher personal responsibility engaged in more high-impact mitigation lifestyle actions (see also ^{6,7}), as did those who perceived that as a scientist they had a responsibility to address climate change engaged in more civic actions, in line with previous findings that scientists who perceive that science and activism are compatible engage more in activism ⁹.

Scientists who believed that technology will largely solve the problems caused by climate change engaged in fewer lifestyle and civic actions, suggesting that technological optimism may hamper climate action (see also ^{10,11}). Scientists who leaned politically right and who said that scientific institutions were doing enough engaged in fewer lifestyle and civic action behaviours. Scientists engaged in slightly more climate actions when they were from fields outside the natural and applied sciences, female, tenured, and older (Supplementary Figure 1). Supplementary Figure 3 shows pairwise correlations between all predictor variables.

Qualitative analysis: Cause of climate change

Of the 361 respondents who did not agree that climate change is caused by human activity, 345 (95.6%) described their reason for this answer in an open-text response. The open-text responses were coded by one author (NG) as indicating climate change scepticism (e.g., climate change is not human caused, it is a hoax) or other reasons for answering no on the item, such as not agreeing with the phrasing of the question or there not being enough scientific evidence for anthropogenic climate change. A second author (MS) coded 40 (11.6%) randomly selected open-text responses using the same scheme. The interrater reliability Kappa was moderate to strong¹² with $K = .78$ (CI: .58 - .98) for the *scepticism* category and $K = .80$ (CI: .61 - .98) for the *other* category.

Of the 345 open-text responses, 119 (34.5%) were coded as *climate change scepticism*, including responses such as describing natural processes as causes of climate change (e.g., “This is a periodic phenomenon due mainly to the Sun.”) and responses referring to previous changes in the climate (e.g., “Because you have to look at the history of climate and not just at the last 50 years. Just taking the last 150 years, the hottest ones were the 1910-1930s, i.e. prior to the post-WWII industrial take off, which is supposed to be the start of the so-called man-made climate change”), with some respondents describing climate change as a hoax (e.g., “Because it isn't. There are natural cycles of warming and cooling that occur mostly related to sunspot activity. Human activity is having a minor effect. The results are induced by inadequate methodology and thermometers placed near heating units or likewise. It's just another way to control the populace by taking money from us and using it for whatever purpose. It's a hoax.”).

In the *other* category, which was coded 218 times (63.2%) respondents noted that they did not agree with the phrasing of the item (e.g., “This should not be a yes/no answer. I believe that climate change is partly caused by human activities, but that there are also other causal factors. If I answer "yes" then there is no question on why I answered yes. It already appears that the authors have preconceived opinions.”), noted that there is not enough scientific evidence as of yet (e.g., “There are still many uncertainties to study. Models have failed in the past”) and that climate change is complex, with both natural and human influence (e.g., “The system is far too complex to be fully understood. Human activities can have a severe impact. But there are other global players as for example the sun and clouds whose contribution is still under investigation. And far more most probably unknown. My concern is that the urgent need for sustainability and care is confused with climate control by human beings”).

The remaining 8 (2.3%) open-text responses were coded as not applicable.

Country heterogeneity

Supplementary Figure 2 shows the country heterogeneity of the individual multilevel logistic regressions predicting engagement in advocacy and protest, respectively. That is, we ran a Bayesian logistic regression model including one predictor at a time as well as a random intercept and random

slope per country for each country with $n > 10$, which was true for 52 countries in total. The remaining countries (i.e., those with fewer than 10 observations, or those for which the respondents did not give an answer) were included in the “other” country category. Country heterogeneity was largest for the following predictors: (a) beliefs that academics should engage more in protest, (b) beliefs that activists can drive change, (c) not knowing enough about climate change, (d) beliefs that technology will solve the problem, (e) beliefs that scientific institutions do enough, (f) not being convinced of the impact of such engagement (for protest), (g) not knowing any groups, and (h) not having time. Country heterogeneity was also high for some background variables, including political orientation.

Multiple regression results for advocacy and protest

Supplementary Figure 4 shows marginal effects at the mean between the predictor variables and the comparison of interest for advocacy and protest, respectively, using multiple logistic regression. That is, we examine the effect of increasing the predictor by one standard deviation (or to 1, in case of binary variables) while holding all other predictors at their means (or 0, in case of binary variables). This analysis differs from the one reported in the main text, where we reported results from individual regressions. In general, the coefficients in the multiple regression analysis are smaller than in the individual regression analyses, which is to be expected when variables (predictors) are correlated, which makes sense in the present context (see also Supplementary Figure 3). For example, we find a much smaller effect of being informed on climate on willingness to engage in protests in the multiple regression analysis. One reason for this smaller effect in this analysis could be a scenario in which being informed on climate causes more engagement in protests, and more worry causes one to be better informed on climate and to engage more in protest. Now, when not including worry in the model, as in the individual regression analysis, the indirect effect from being informed about climate on worry on engaging in protest gets absorbed into the marginal association between being informed about climate and engaging in protests. However, to draw such causal conclusions, strong additional assumptions are needed, most importantly a temporal precedence of one variable to the other and the absence of any confounders^{13,14}.

Since it is difficult to make these assumptions convincingly in our setting and because effects from individual regressions are easier to interpret, we chose to report those in the main text. However, an interesting outcome of the multiple regression analysis is that we can assess to what extent all of the assessed variables allow us to predict whether scientists are willing to, or are already engaging in advocacy or protest. We report these predictability measures in Supplementary Table 9.

Climate versus non-climate researchers

We show, using individual Bayesian logistic regression models, marginal effects at the mean of predictor variables and engagement in Figure 2. Supplementary Figure 5 repeats this analysis, but for each predictor variable includes the extent to which one's research is related to climate change as an interaction (including main effect). For advocacy, we generally found that researchers whose research is not at all related to climate change (somewhat transparent, square shape) showed stronger percentage change effects than researchers whose research is a great deal related to climate change (quite transparent, triangle shape) when considering the contrast "willing to" versus "not willing to". This was not the case, however, for certain barrier variables and the contrast "already do" versus "willing to", including "Do not know any groups" and "No time". In these cases, there was a stronger effect for researchers whose research is more related to climate change. The situation is similar in the case of protest, except that the differences are overall not as pronounced.

Supplementary Figure 6 shows the same results, except this time for log odds ratios. This figure shows that the variables themselves generally did not have a different effect across different degrees to which one's research is related to climate change. Why does this differ from the percentage change results? Note that the percentage change effect size is dependent on the intercept of the model, that is, the base rate of engagement across the scientists whose research is related to climate change to varying degrees. This explains the large differences in the case of the contrast of "already do" versus "willing to" for variables such as "Do not know any groups": scientists whose research is a great deal related to climate change (at a mean level of agreement with "Do not know any groups") have a much higher base

rate of engagement in advocacy (62%) compared to scientists whose research is not at all related to climate change (at a mean level of agreement with “Do not know any groups”; 7%). Changing the levels of the predictor “Do not know any groups” can have a much larger effect on the former group than the latter, which is what we observe. Log odds ratios are not dependent on the intercept, and therefore are not susceptible to this base rate dependency. However, they are more difficult to interpret; and since in practice we are interested in percentage change, we report percentage change in the main text.

Classification performance

Supplementary Table 9 shows a number of out-of-sample performance metrics for our different multiple regression models across outcomes. The models were trained on 80% of the data and evaluated on the remaining 20%. We selected the training data set by sampling the full data set stratified on the binary outcome variable so as to preserve its distribution in the training and test data set.

In general, Supplementary Table 9 shows that predicting whether somebody is willing to (versus not willing to) is easier to predict than whether somebody has already engaged in (versus is just willing to) in protest and civil disobedience. For advocacy, the reverse is true. has engaged in the specific behaviour is easier than predicting whether somebody is willing to (or not willing to) engage. This is particularly pronounced in the case of civil disobedience, for which it is very difficult to distinguish those we have already engaged in the behaviour compared to those who are willing to (Precision = .68, Recall = .07).

Results for civil disobedience

Supplementary Figure 7 (left) shows that key variables distinguishing scientists who are willing to engage versus those that are not willing to engage in civil disobedience are (a) believing that scientists and academics *should* engage in more protests, (b) believing that activists can drive change and that local actions are effective, (d) worry and believed impacts on self, (e) academic / personal / and institutional

responsibility, (f) believes that system change and lifestyle changes are required, and (g) having an activist / advocate in one's inner circle. Effects shown are again marginal effects at the mean. Believing that protest and advocacy would diminish the credibility of scientists was strongly associated with a decreased willingness to engage in civil disobedience. Having an advocate in one's inner circle emerged as the most important variable when contrasting scientists who have engaged in civil disobedience with those that are willing to, followed by being informed on climate. Effects were again smaller for the contrast already do versus willing to, as for advocate and protest, see Figure 2. Supplementary Figure 7 (right) shows the relationships between the predictor variable and the outcome conditional on all other predictors, where we observe that many variables get shrunk to zero. Believing that academics should protest more and that activists can drive change emerged as the strongest predictors for being willing to engage (versus not being willing to engage), while believing that protests would diminish the credibility was associated with the strongest decrease in willingness to engage. Having an activist / advocate in one's inner circle was the variable most strongly associated with an increase in already engaging versus merely being willing to.

Barriers descriptives

Supplementary Figure 8 shows relative frequencies of (dis)agreement across different barriers we surveyed for scientists who were unwilling to engage, were willing to engage, and already engaged.

For those who were unwilling to engage in advocacy, the question was framed as “*What are the reasons for you **not** to participate in **climate change advocacy**?*”. For those who were willing to engage, the question was framed as “*What are the reasons that you have **not yet** engaged in **climate change advocacy**?*”. For those who already engaged, the question was framed as “*Before participating in **climate change advocacy**, which of the following concerns did you have?*”. For protest, the behaviour was changed to “*legal climate change-related protests (e.g., marches, demonstrations)*”.

For both advocacy (left) and protest (right), we found that scientists who are (not) willing to engage tended to agree more strongly that they did not know enough about climate change to engage in advocacy compared to those who already engage. The same holds true for lack of time. Lack of perceived

efficacy, fearing repercussions, and believing engagement might negatively affect one's reputation were especially important for those who are not willing to engage, while not knowing any groups was especially important for those who are willing to engage.

A perceived lack of efficacy was especially pronounced for scientists who are unwilling to engage in protest compared to those who are unwilling to engage in advocacy. Conversely, considerably fewer scientists who have engaged in protest perceived a lack of subject knowledge to have been a barrier compared to scientists who have already engaged in advocacy.

The regression analysis in the main text (Figure 2) showed the counter-intuitive result that respondents were more likely to be willing to engage in protest and advocacy (compared to not willing to engage) if they scored higher on the item "Do not know any groups". We think that this is the case because the question did not make sense for individuals answering with "Not willing to", because the practical problem of not knowing any groups to engage in an action is only relevant when one is in principle willing to engage in that action. If the scientist responded to this non-applicable question by just picking a random response in the middle of the scale, and scientist who are willing to engage answered more towards the right of the scale, since not knowing any groups can be precisely the reason why they have not already engaged in some action, we would see precisely the regression results as in Figure 2. And indeed, Supplementary Figure 8 shows that the distribution of "Do not know any groups" is roughly symmetric around the middle of the scale for scientists who are not willing to engage and left-skewed for scientists who are willing to engage.

Qualitative analysis: Understanding barriers to advocacy and joining legal protests

A total of 17 and 31 percent of respondents ($n = 1,590$; $2,848$) used the option to describe further barriers they experience(d) engaging in climate advocacy and joining legal climate protests, respectively.

The respondents who answered at least one of the two open questions ($n = 3,166$) came from 97 countries, with a majority from the United States of America ($n = 837$; 26%), a majority being male ($N = 1,788$, 56%), more full professors ($n = 892$, 28%), from the natural sciences ($n = 1,276$, 40%), between 35

and 54 years old ($n = 985$, 31%), and lean left politically (45.8% indicate 1-2 on a 1-7 Likert scale from left to right). The research of 18.3% is very related to climate change, and for 23.3% not at all.

The data was coded based on a coding scheme developed by Finnerty and colleagues⁹, which was used to analyse scientists' and academics' barriers to climate activism. The coding scheme was adapted iteratively across two rounds of coding by two authors (MS, AA). Before the first round, the authors each coded 10 open answers of both barriers to advocacy and protesting together and added to and/or refined the code book. Each coder then coded around ten percent of the total open responses ($n = 200$, 13%, for advocacy; $n = 300$, 11% for protest), which were selected randomly. Instances in which the coders did not agree were discussed and codes were added/combined and/or refined if deemed necessary. In the second round, the coders coded 20 open answers together and discussed the new code book and made refinements when needed. They then coded ten percent of the total open responses ($n = 165$, for advocacy; $n = 290$, for protest), which were selected randomly. In round three, one author (MS) then used the resulting coding scheme (see Supplementary Table 6) to code all open answers and another author (AB) went through two rounds of coding, coding around 10% of the open-text answers to determine interrater reliability. After the first round ($n = 164$, for advocacy; $n = 300$, for protests), the coders discussed the codes they did not agree on and decided on reducing the code categories: codes that were used very infrequently (mentioned by less than 2% of respondents across both behaviours) were either merged with a similar code (e.g., *Lack of funding* was included in *Not incentivised by work*) or included in the "Other" category (e.g., *Feelings of hypocrisy, Disempowerment and hopelessness*). Kappa was calculated based on the final round of coding ($n = 200$ ¹, for advocacy, $n = 310$, for protest). The interrater reliability across codes was moderate to perfect¹², ranging from $K = .63$ (CI: .48 - .78) for the *Other* category for barriers to legal protests, and $K = 1.00$ (CI: 1.00 - 1.00) for *Residency and visa concerns* as a

¹Please note that 20 open text replies were coded as "*Same barrier as legal protests*". For this code category, interrater reliability was almost perfect, with $K = .94$ (CI: .84 - 1.00). Cases that were coded as "*Same barrier as legal protests*" were removed before calculating Kappa for the other code categories; as they were coded based on the codes used for barriers to legal protests.

barrier to legal protests (see Supplementary Table 7). On average, across codes, interrater reliability was strong, with $K = .86$ for advocacy and $K = .83$ for barriers to legal protests.

The final code book included 11 themes, with one to five sub-themes/codes each, resulting in a total of 23 codes. An overview of all codes, including examples per activity and the code description can be found in Supplementary Table 6. For an overview of the number of times each code was used and Kappa per code, see Supplementary Table 7. The barriers that were reported by at least 5% of respondents of the different willingness groups (not willing, willing, already do/did) are displayed in Supplementary Table 8.

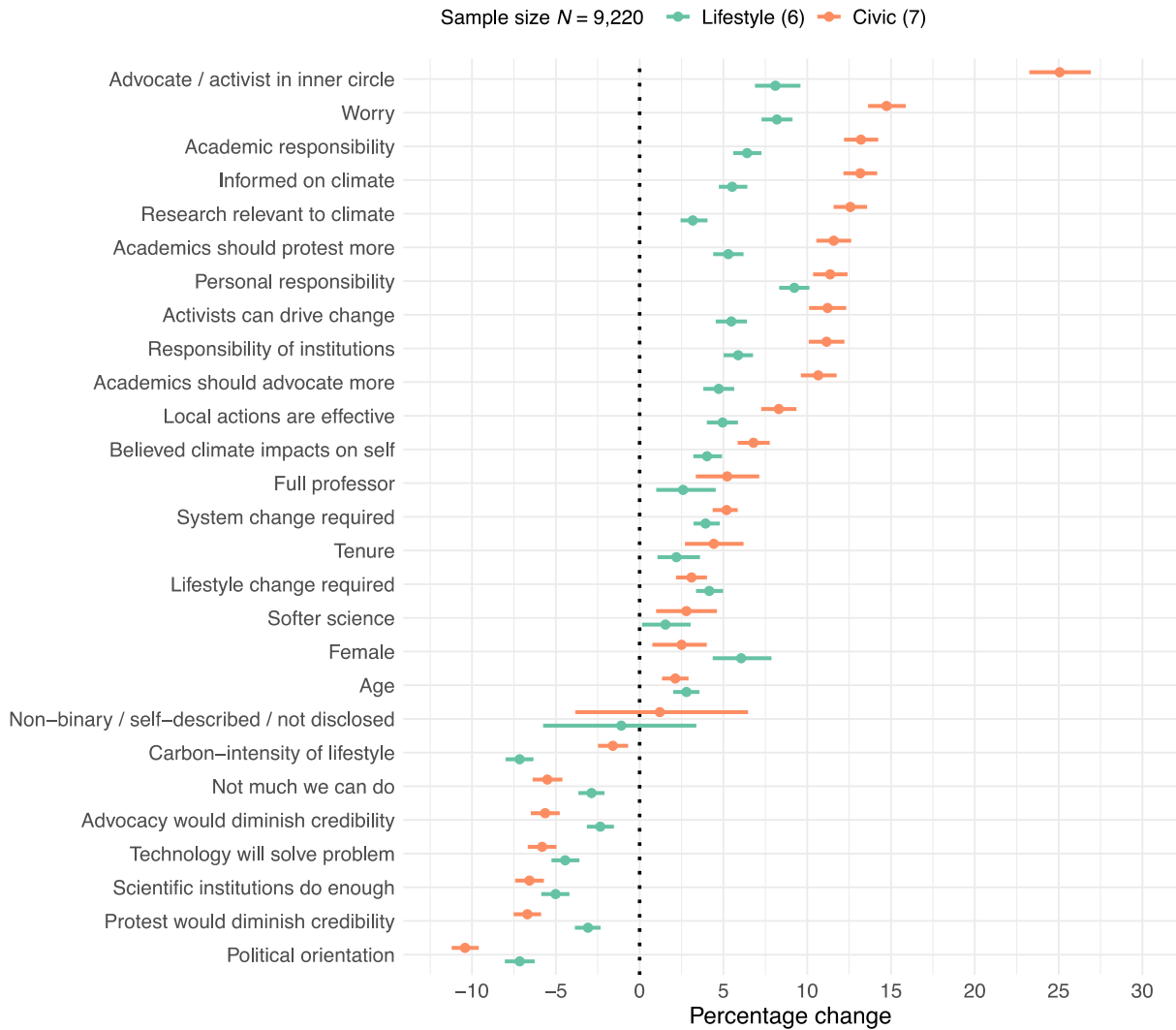
Among scientists who already engage in advocacy and provided open responses, the barriers to advocacy described most frequently included not having enough time, a perceived lack of skills or knowledge around climate change, doubts about the efficacy of (participating in) advocacy, concerns on activists' ideology and strategy and not knowing how to get active. Key barriers to engaging in legal protests described by scientists who already did or do join such actions included a lack of time, potential negative consequences of joining such actions including potential legal consequences, risk to (personal) safety and risk to employment, doubts about the efficacy of (participating in) protests and believing they could be more effective in another role. They also discussed their concerns on activists' ideology and strategy as a potential barrier to joining protests.

Supplementary references

1. Dablander, F., Sachisthal, M. S. M. & Haslbeck, J. Going Beyond Research: Climate Actions by Climate and Non-Climate Researchers. doi:10.31234/osf.io/5fqtr (2024).
2. Rees, J. H. & Bamberg, S. Climate protection needs societal change: Determinants of intention to participate in collective climate action. *Eur. J. Soc. Psychol.* **44**, 466–473 doi:10.1002/ejsp.2032 (2014).
3. Wallis, H. & Loy, L. S. What drives pro-environmental activism of young people? A survey study on the Fridays For Future movement. *J. Environ. Psychol.* **74**, 101581 doi:10.1016/j.jenvp.2021.101581

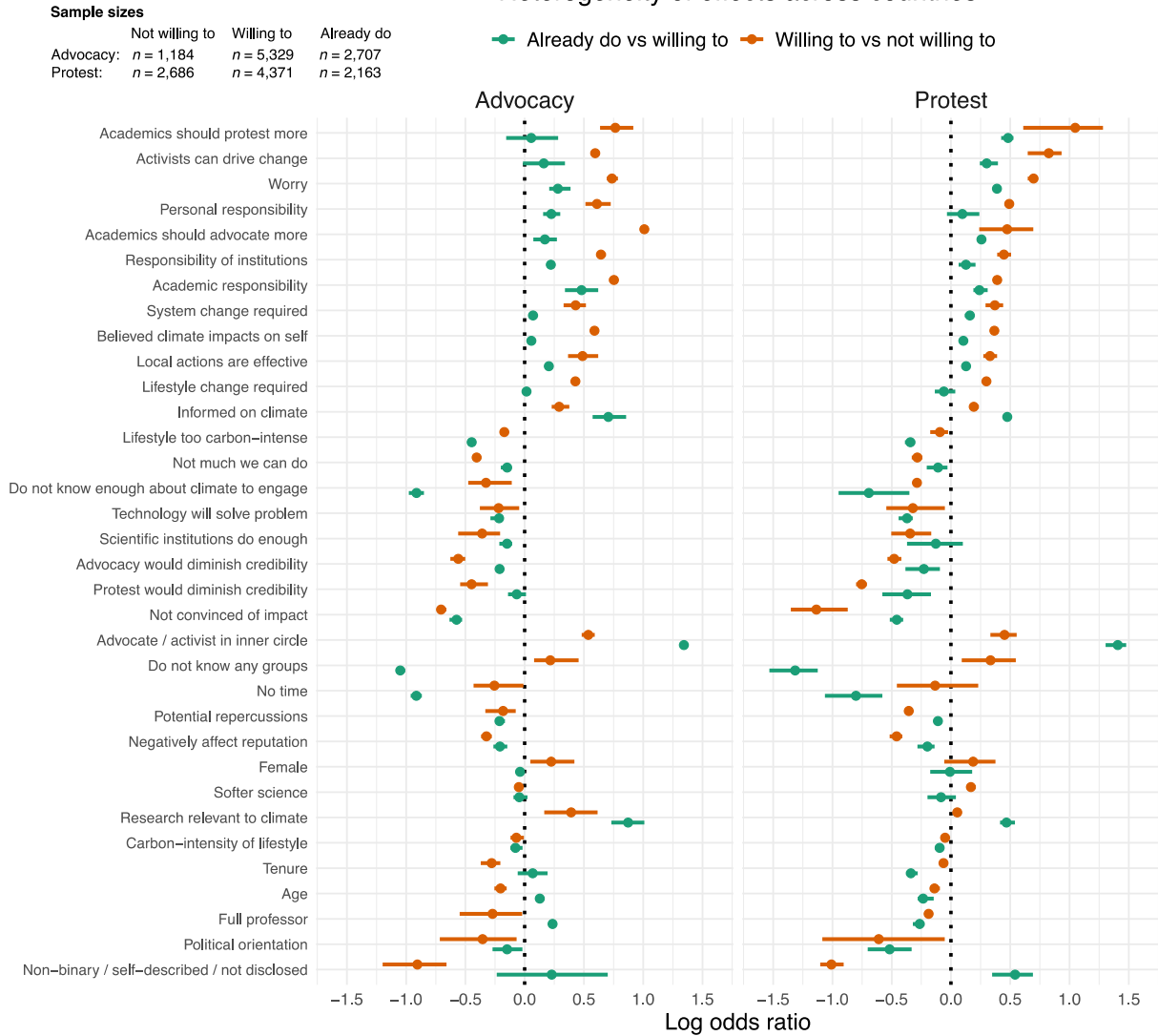
- (2021).
4. Doherty, K. L. & Webler, T. N. Social norms and efficacy beliefs drive the Alarmed segment's public-sphere climate actions. *Nat. Clim. Change* **6**, 879–884 doi:10.1038/nclimate3025 (2016).
 5. Wolske, K. S., Gillingham, K. T. & Schultz, P. W. Peer influence on household energy behaviours. *Nat. Energy* **5**, 202–212 doi:10.1038/s41560-019-0541-9 (2020).
 6. Bouman, T. *et al.* When worry about climate change leads to climate action: How values, worry and personal responsibility relate to various climate actions. *Glob. Environ. Change* **62**, 102061 doi:10.1016/j.gloenvcha.2020.102061 (2020).
 7. Zawadzki, S. J., Bouman, T., Steg, L., Bojarskich, V. & Druen, P. B. Translating climate beliefs into action in a changing political landscape. *Clim. Change* **161**, 21–42 doi:10.1007/s10584-020-02739-w (2020).
 8. Whitmarsh, L., Capstick, S., Moore, I., Köhler, J. & Le Quéré, C. Use of aviation by climate change researchers: Structural influences, personal attitudes, and information provision. *Glob. Environ. Change* **65**, 102184 doi:10.1016/j.gloenvcha.2020.102184 (2020).
 9. Finnerty, S., Piazza, J. & Levine, M. Scientists' identities shape engagement with environmental activism. *Commun. Earth Environ.* **5**, 1–13 doi:10.1038/s43247-024-01412-9 (2024).
 10. Lamb, W. F. *et al.* Discourses of climate delay. *Glob. Sustain.* **3**, e17 doi:10.1017/sus.2020.13 (2020).
 11. Gifford, R. The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. *Am. Psychol.* **66**, 290–302 doi:10.1037/a0023566 (2011).
 12. McHugh, M. L. Interrater reliability: the kappa statistic. *Biochem. Medica* **22**, 276–282 (2012).
 13. Waldorp, L., Schutzeichel, F. & De Jong, P. J. Causal inference: principles unifying experimental and observational accounts. Preprint at <https://doi.org/10.31234/osf.io/bta5z> (2024).
 14. Peters, J., Janzing, D. & Schölkopf, B. *Elements of Causal Inference: Foundations and Learning Algorithms*. (The MIT Press, 2017).

Percentage change for number of climate actions

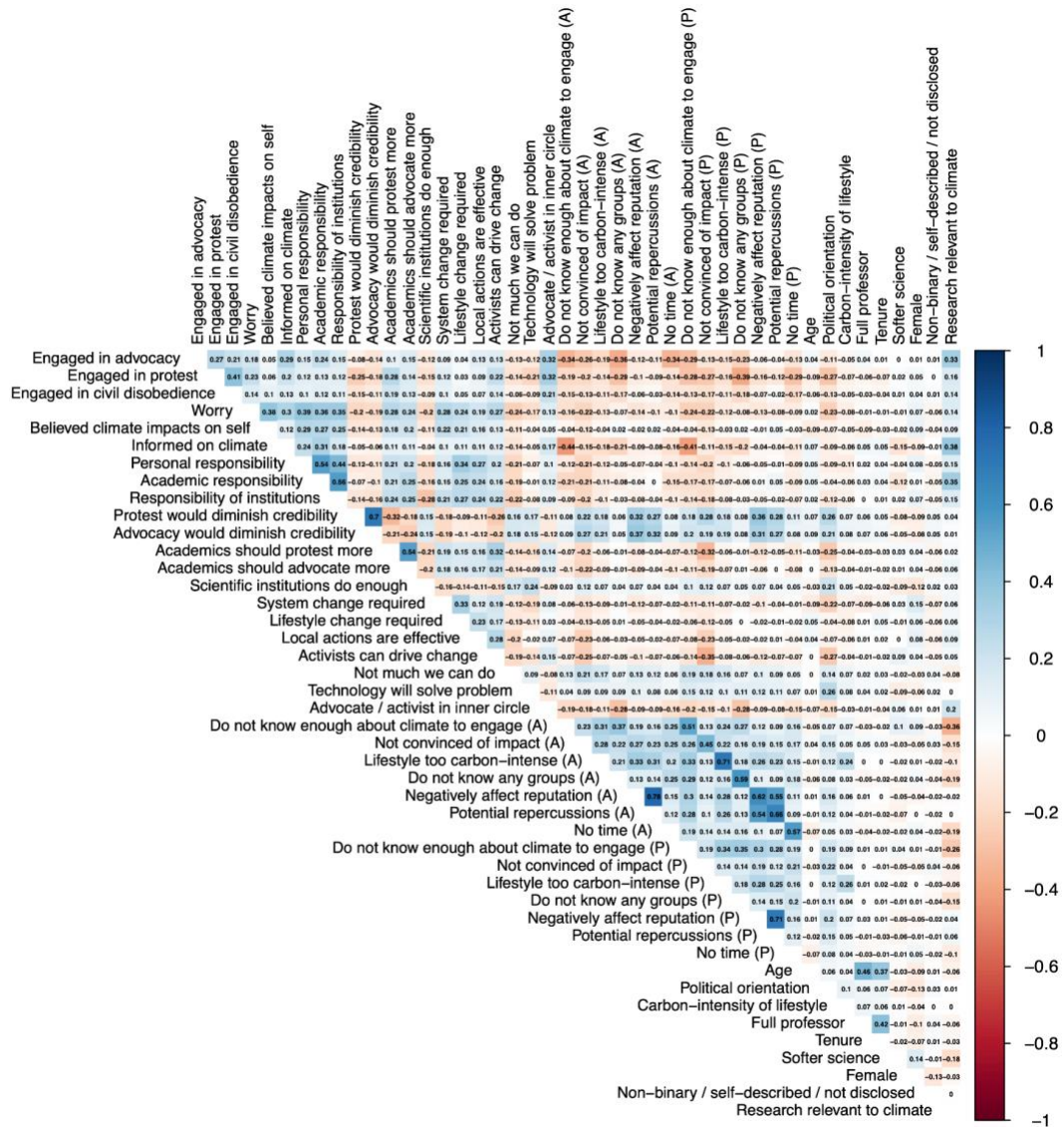


Supplementary Figure 1. Results of individual multilevel binomial regression on number of climate actions. Posterior means and 95% credible intervals for percentage change in the expected number of behaviours for the predictors, estimated through individual multilevel binomial regression models with random intercepts and random slopes for countries. Non-binary predictors were z-standardised.

Heterogeneity of effects across countries



Supplementary Figure 2. Country heterogeneity of marginal results of logistic regressions predicting engagement. Posterior means and 95% quantiles for contrasts willing to vs. not willing to (orange) and already do versus willing to (green) for advocacy (left) and protest (right) from Bayesian logistic regression models that only included one predictor at a time as well as a random intercept and random slope for country. The points give the posterior mean fixed effects while the intervals are 95% quantiles quantifying the heterogeneity across all 53 countries (see supplemental text). Non-binary predictors were z-standardised.



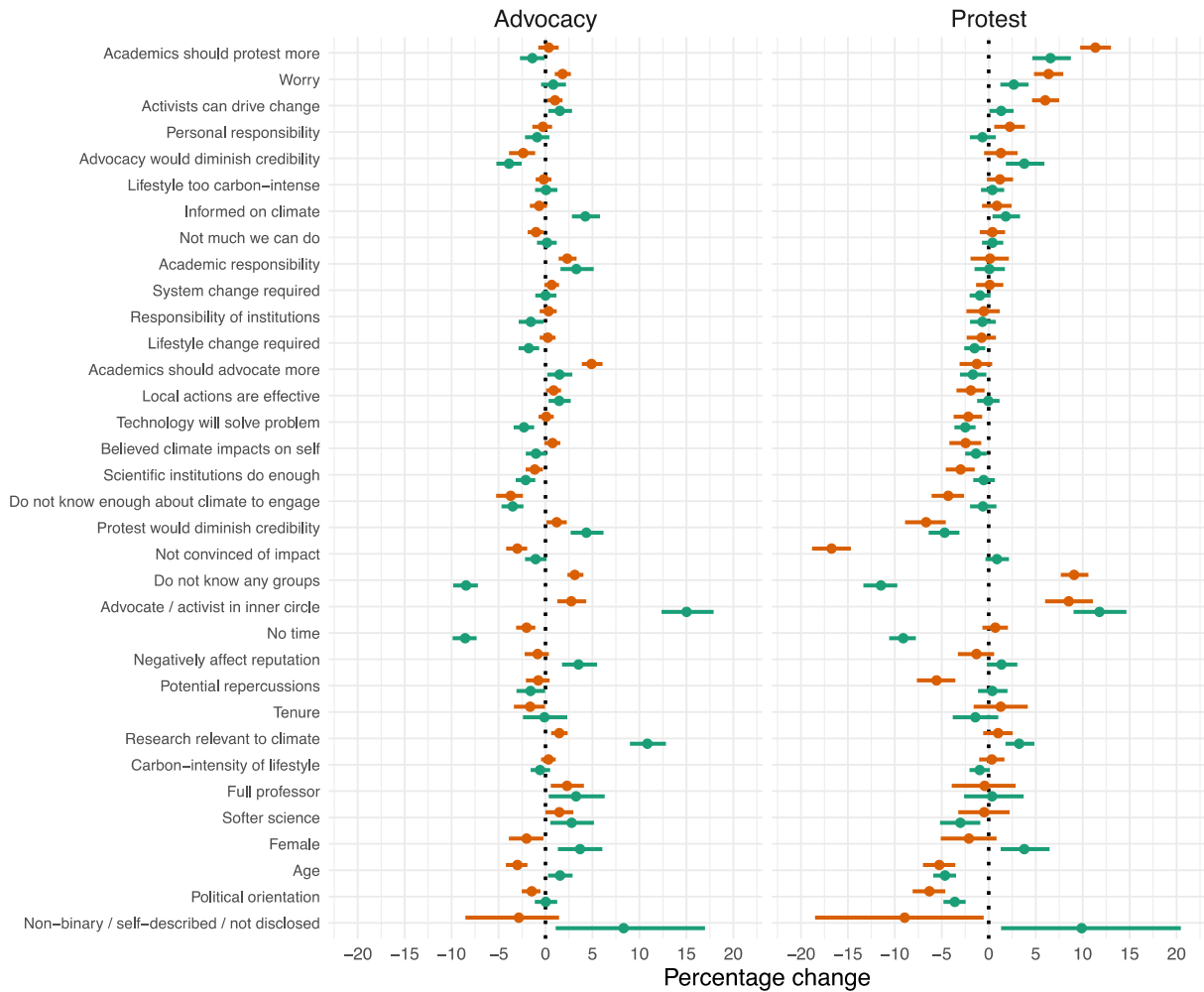
Supplementary Figure 3. Pairwise Kendall's τ correlations for all variables used in the regression models. Note that the parenthesis (A) and (P) indicate barrier variables answered in relation to advocacy or protest, respectively.

Multiple logistic regression results

Sample sizes

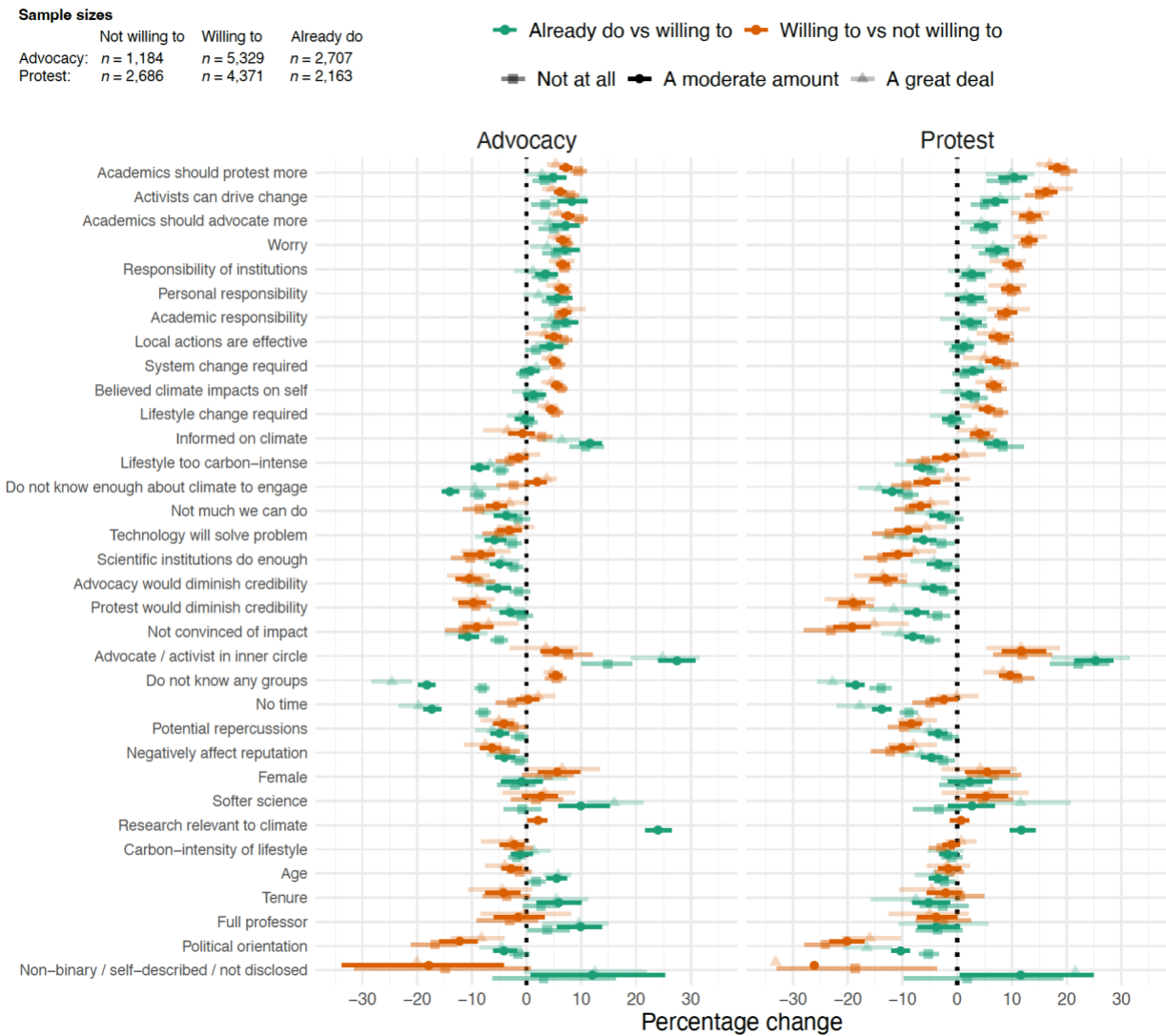
	Not willing to	Willing to	Already do
Advocacy:	<i>n</i> = 1,184	<i>n</i> = 5,329	<i>n</i> = 2,707
Protest:	<i>n</i> = 2,686	<i>n</i> = 4,371	<i>n</i> = 2,163

— Already do vs willing to — Willing to vs not willing to



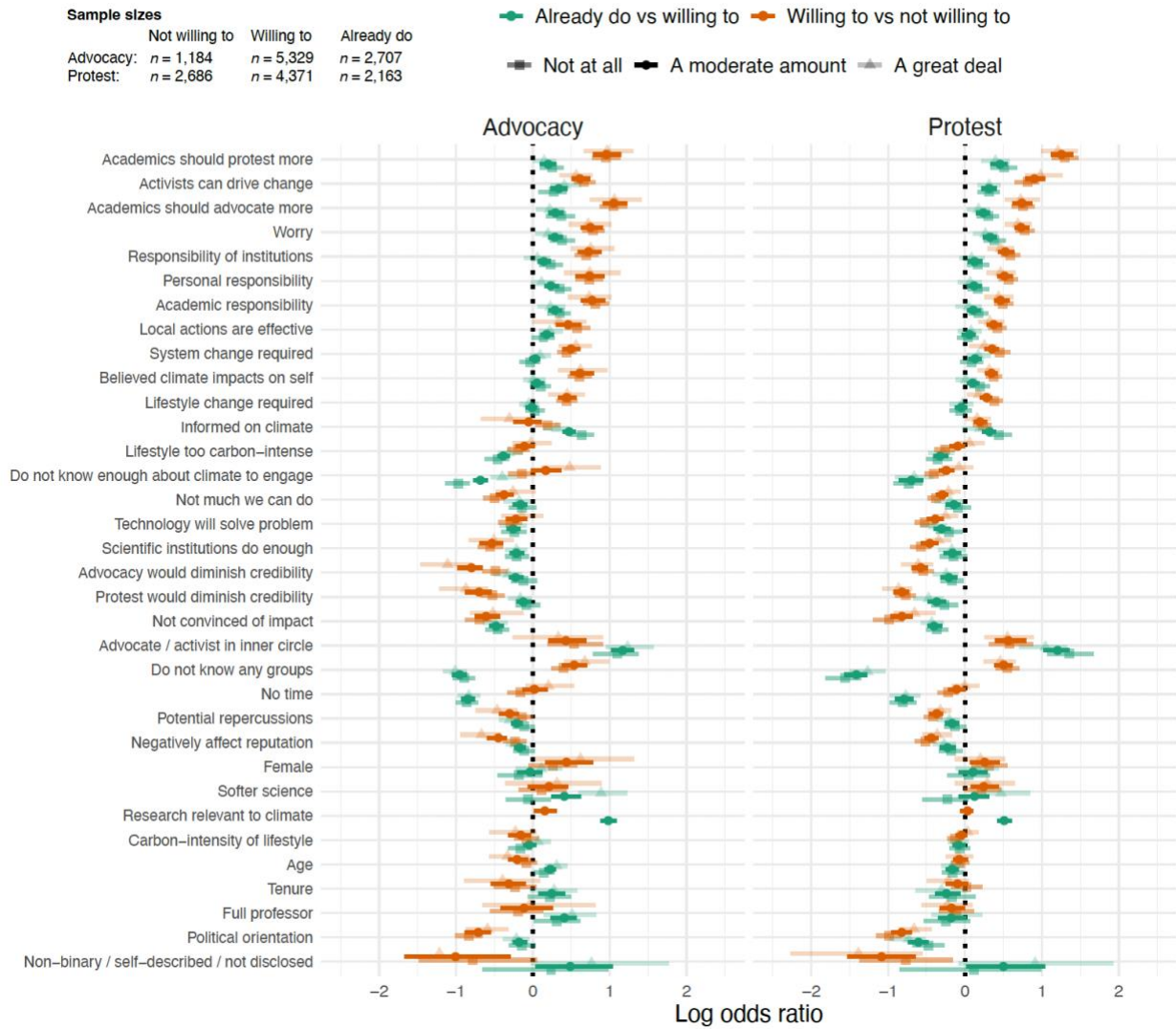
Supplementary Figure 4. Results of multiple logistic regression predicting engagement. Posterior means and 95% credible intervals for contrasts willing to vs. not willing to (orange) and already do versus willing to (green) for advocacy (left) and protest (right) from Bayesian multilevel logistic regression models that only included a random intercept for country. Non-binary predictors were z-standardised.

Percentage change across research relatedness to climate change



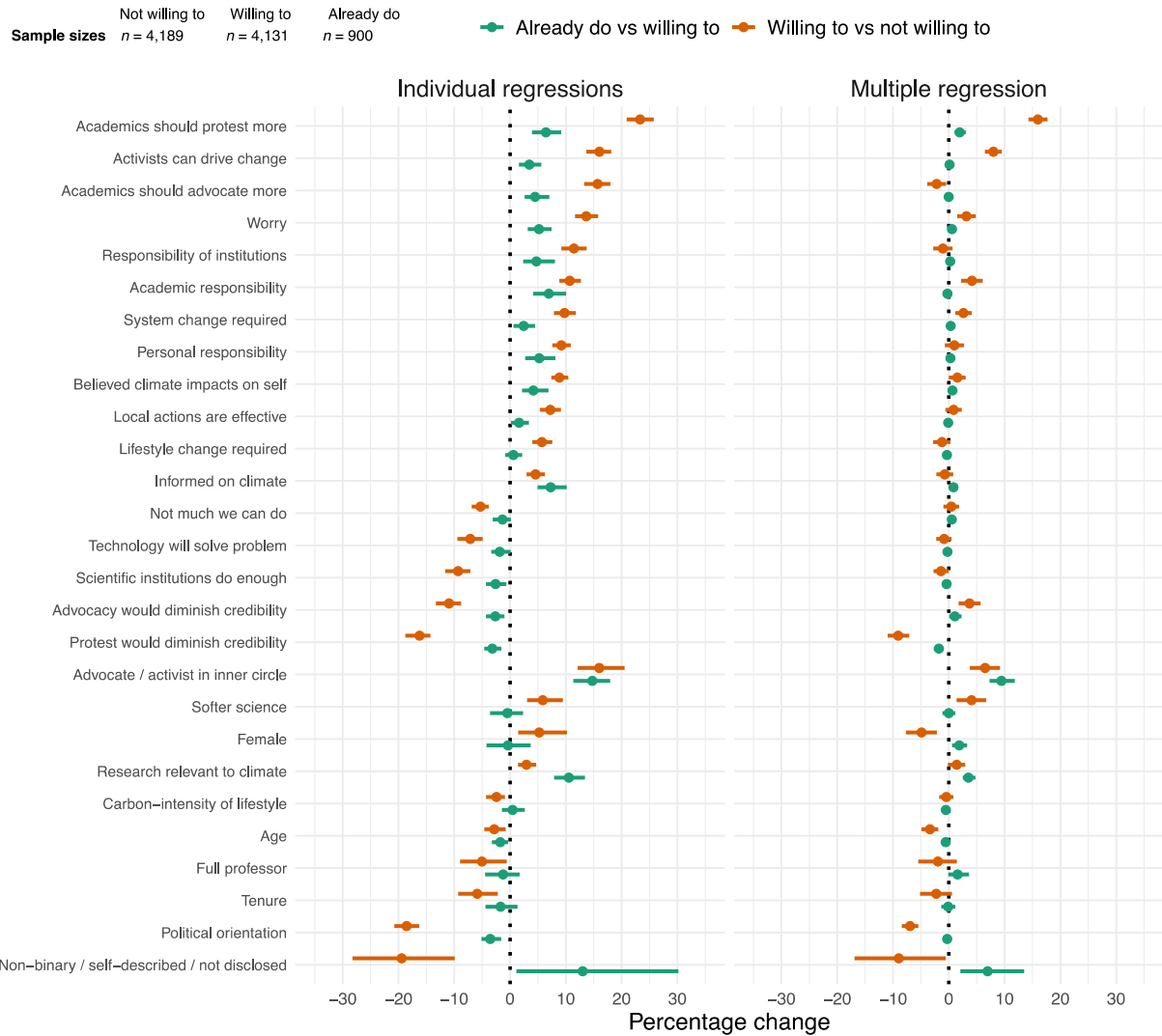
Supplementary Figure 5. Results of logistic regression predicting engagement with research relevant to climate as interaction. Posterior means and 95% quantiles for contrasts willing to vs. not willing to (orange) and already do versus willing to (green) for advocacy (left) and protest (right) from Bayesian multilevel logistic regression models that only included one predictor at a time as well as a random intercept and random slope for country. Points and intervals in full colour indicate effects for researchers whose research is a moderate amount related to climate change. Squares and intervals in medium transparency indicate effects for researchers whose research is not at all related to climate change. Triangles and intervals in least transparency indicate effects for researchers whose research is a great deal related to climate change. Non-binary predictors were z-standardised.

Log odds ratios across research relatedness to climate change

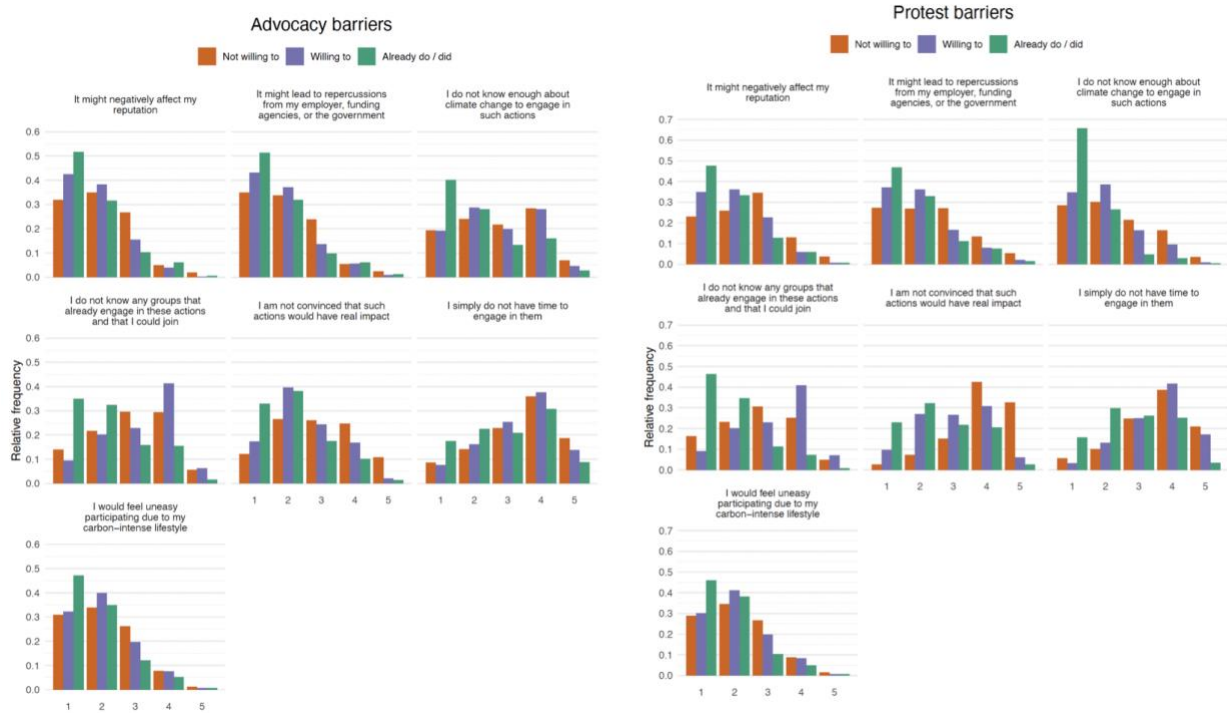


Supplementary Figure 6. Results of logistic regression predicting engagement with research relevant to climate as interaction. Posterior means and 95% quantiles for contrasts willing to vs. not willing to (orange) and already do versus willing to (green) for advocacy (left) and protest (right) from Bayesian multilevel logistic regression models that only included one predictor at a time as well as a random intercept and random slope for country. Points and intervals in full colour indicate effects for researchers whose research is a moderate amount related to climate change. Most and medium transparent points and intervals indicate effects for researchers whose research is a great deal and not at all related to climate change, respectively. Non-binary predictors were z-standardised.

Civil disobedience results



Supplementary Figure 7. Individual and multiple regression results predicting civil disobedience. Posterior means and 95% credible intervals for contrasts willing to vs. not willing to (orange) and already do versus willing to (green) for civil disobedience from the Bayesian logistic regression models. The right figure conditions on all other variables, the left figure shows effects from individual regressions (as in the main text).



Supplementary Figure 8. Pre-specified barriers for advocacy (left) protest (right) across engagement. Relative frequencies of barriers to protest for scientists who already engage (green), are willing to engage (purple), or are not willing to engage (orange). 1=Strongly disagree, 2=Disagree, 3=Neither disagree nor agree, 4=Agree, 5=Strongly agree.

Supplementary Table 1. Frequencies and percentages each answer option was chosen per item assessing demographics and background variables. Frequencies and percentages are based on the raw (not imputed) data.

Variable	Answer options	Frequency	Percentage
Continent ^a	Africa	110	1.2
	Asia	1,039	11.3
	Europe	4,695	50.9
	North America	2,545	27.6
	Oceania	464	5.0
	South America	280	3.0
	NA	87	0.9
Gender ^b	Male	5,662	61.4
	Female	3,276	35.5
	Non-binary	56	0.6
	Self-described	22	0.2
	Non-disclosed	184	2.0
	NA	20	0.2
Age	Under 18	2	0.0
	18-24 years old	14	0.2
	25-34 years old	1,674	18.2
	35-44 years old	3,197	34.7
	45-54 years old	2,087	22.6
	55-64 years old	1,368	14.8
	65+ years old	843	9.1
	NA	35	0.4
Research	Not at all	2,255	24.5

Variable	Answer options	Frequency	Percentage
related	Very little	1,899	20.6
	A moderate amount	1,846	20.0
	Quite a bit	1,646	17.9
	A great deal	1,563	17.0
	NA	11	0.1
Field ^b	Humanities (e.g., History, Languages, Law)	196	2.1
	Social and behavioural sciences (e.g., Economics, Sociology, Psychology)	2,230	24.2
	Natural sciences (e.g., Biology, Chemistry, Earth sciences)	3,939	42.7
	Formal sciences (e.g., Computer science, Logic, Mathematics)	288	3.1
	Professions and applied sciences (e.g., Agriculture, Engineering)	1,583	17.2
	Medical sciences	812	8.8
	Other, please specify	164	1.8
	NA	8	0.1
Position ^b	PhD student	552	6.0
	Postdoc	1,133	12.3
	Assistant professor (or equivalent)	1,403	15.2
	Associate professor (or equivalent)	1,684	18.3
	Full professor	2,452	26.6
	Scientist or researcher at a public research institute	1,172	12.7
	Scientist or researcher at a non-profit organization	249	2.7
	Scientist or researcher in industry	193	2.1
	Other	360	3.9
	NA	22	0.2

Variable	Answer options	Frequency	Percentage
Teaching	Research only	2,454	26.6
	Teaching only	53	0.2
	Both teaching and research	6,588	71.5
	Neither teaching nor research	102	1.1
	NA	23	0.2
Tenure	Yes, tenured	4,713	51.1
	Yes, tenure track	977	10.6
	No	3,493	37.9
	NA	37	0.4
h-index ^c	0-5	876	9.5
	6-10	1,158	12.6
	11-15	1,062	11.5
	16-20	921	10.0
	21-25	701	7.6
	26-30	646	7.0
	31-35	506	5.5
	36-40	444	4.8
	41-45	312	3.4
	46-50	278	3.0
	51-99	892	9.7
	100 or higher	170	1.8
	Do not know	1,216	13.1
	NA	38	0.4

Variable	Answer options	Frequency	Percentage
Political orientation	1 (left)	888	9.6
	2	3,301	35.8
	3	2,584	28.0
	4	1,581	17.1
	5	574	6.2
	6	159	1.7
	7 (right)	43	0.5
	NA	90	1.0
Carbon-intensity of lifestyle	Much lower	1,015	11.0
	Lower	4,520	49.0
	About the same	2,575	27.9
	Higher	965	10.5
	Much higher	132	1.4
	NA	13	0.1
Advocate / activist in inner circle	Yes	3,640	39.5
	No	5,556	60.3
	NA	24	0.3
Survey source	Via personalized e-mail	8,825	95.7
	Via an association or organization	246	2.7
	Via social media	108	1.2
	Other, please specify	24	0.3

Variable	Answer options	Frequency	Percentage
	NA	17	0.2

Note. ^aThe country variable was used to derive the continent on which respondents are currently residing. ^bDenotes variables for which open answers were coded. ^cThe self-reported h-index was removed from the data set for the purpose of anonymization.

Supplementary Table 2. Overview of the survey items used including the rating scale or available answer options.

Block	Variable	Item	Rating scale/Answer options
Assessing climate change beliefs	Cause	Do you agree that climate change is caused by human activities?	Yes (1) - No (0)
	Believed climate impacts on self	How much do you believe climate change will harm you personally?	Not at all (1) - A great deal (5)
	Worry	Overall, how worried are you about climate change?	
	Informed on climate change	How informed do you consider yourself to be about climate change?	
	Personal responsibility	To what extent do you feel a personal responsibility to reduce climate change?	
	Academic responsibility	To what extent do you feel a responsibility as a scientist or academic to reduce climate change?	
	Responsibility of institutions	To what extent do you feel that scientific or academic institutions have a responsibility to reduce climate change?	
Beliefs about how to address climate change	Not much we can do	There is not much we can do to reduce climate change.	Strongly disagree (1) - Strongly agree (5)
	Technology will solve problem	Advances in technology will largely solve the problems caused by climate change.	
	Scientific institutions do enough	Overall, scientific and academic institutions are doing enough to address climate change.	
	System change required	Addressing climate change requires fundamental changes to social, political, and economic systems.	

Block	Variable	Item	Rating scale/Answer options
	Lifestyle change required	Addressing climate change requires significant changes to personal behaviour and lifestyle.	
	Local actions are futile	Local actions are futile, because only a globally coordinated response can have an impact addressing climate change.	
	Local actions are effective	Local actions are effective (e.g., they can create a ripple effect that can spur global action addressing climate change).	
	Governments do enough	Overall, governments are doing enough to address climate change.	
	Activists can drive change	Environmental activist groups can drive positive change in addressing climate change.	
Climate actions, barriers, and role of scientists	Lifestyle behaviours	<p>Reducing car usage.</p> <p>Switching to an electric vehicle.</p> <p>Increasing energy efficiency or shifting to renewable energy at home (e.g., installing solar panels, installing a heat pump, improving insulation, switching to a green energy supplier).</p> <p>Having fewer or no children.</p> <p>Following a mostly vegetarian or vegan diet.</p> <p>Reducing the amount of flying.</p>	Would not be willing to (0) Would be willing to (1) Already do/did (2)

Block	Variable	Item	Rating scale/Answer options
	Civic actions	Talking about climate change with others.	Would not be willing to (0) Would be willing to (1) Already do/did (2)
		Donating money to an organization that works to reduce climate change.	
		Signing petitions for policy changes addressing climate change.	
		Advocating institutional change (e.g., for universities to divest from fossil fuels, for less meat in catering or cafeterias, for a mandatory course on climate change).	
		Engaging directly with politicians or policymakers on topics related to climate change (e.g., attending city council meetings, giving expert advice).	
		Writing letters to or emailing politicians, civil servants, journalists or editors about the topic of climate change.	
		Participating in nonviolent civil disobedience ^a actions related to climate change	
	Work-related	Shifting my research to include topics related to climate change.	Would not be willing to (0) Would be willing to (1) Already do/did (2)
		Including material about climate change in my teaching.	
	Legal protests	Would you be willing to engage in legal climate change-related protests (e.g., marches, demonstrations)?	
	Advocacy	Would you be willing to engage in climate change advocacy ^b ?	
Barriers	Negatively affect reputation	It might negatively affect my reputation.	Strongly disagree (1) - Strongly agree (5)

Block	Variable	Item	Rating scale/Answer options
	Potential repercussions	It might lead to repercussions from my employer, funding agencies, or the government.	
	Do not know enough about climate change to engage	I do not know enough to speak comfortably about climate change. / I do not know enough about climate change to engage in such actions.	
	Do not know any groups	I do not know any groups that already engage in these actions and that I could join. I am not convinced that such actions would have real impact.	
	No time	I simply do not have time to engage in them.	
	Lifestyle too carbon-intense	I would feel uneasy participating due to my carbon-intense lifestyle.	
Role of scientists	Climate scientists should protest more	Scientists and academics <u>working on</u> topics related to climate change should engage more in protests that call for action on climate change.	Strongly disagree (1) - Strongly agree (5)
	Academics should protest more	Scientists and academics, including those <u>not working on</u> topics related to climate change, should engage more in protests that call for action on climate change.	
	Climate scientists should advocate more	Scientists and academics <u>working on</u> topics related to climate change should engage more in advocacy on climate change.	
	Academics should advocate more	Scientists and academics, including those <u>not working on</u> topics related to climate change, should engage more in advocacy on climate change.	
	Protest would diminish	Participating in legal climate change-related protests would diminish scientists'	

Block	Variable	Item	Rating scale/Answer options
	credibility	credibility.	
	Advocacy would diminish credibility	Engaging in climate change advocacy would diminish scientists' credibility.	
Demographic s and background variables	Country	In which country do you currently reside?	
	Gender	How do you describe yourself?	Male, Female, Non-binary, Prefer to self-describe, Prefer not to say
	Age	How old are you?	Under 18, 18-24 years old, 25-34 years old, 35-44 years old, 45-54 years old, 55-64 years old, 65+ years old
	Research related	To what extent is your research related to climate change?	Not at all (1) - A great deal (5)
	Field	In which field of study do you currently work?	Humanities (e.g., History, Languages, Law), Social and behavioural sciences (e.g., Economics, Sociology, Psychology), Natural sciences (e.g., Biology, Chemistry, Earth sciences), Formal sciences (e.g., Computer science, Logic, Mathematics), Professions and applied sciences (e.g., Agriculture, Engineering), Other,

Block	Variable	Item	Rating scale/Answer options
			please specify: [open text field]
	Position	Please indicate your current position	PhD student, Postdoc, Assistant professor (or equivalent), Associate professor (or equivalent), Full professor, Scientist or researcher in industry, Scientist or researcher at a public research institute, Scientist or researcher at a non-profit organization, Other, please specify: [open text field]
	Teaching	Does your position include teaching and research?	Teaching only, Research only, Both teaching and research, Neither teaching not research
	Tenure	Is your position tenured?	Yes, tenured; Yes, tenure-track; No
	h-index	Please report your current h-index below (if known)	0-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-99, 100 or higher, Do not know

Block	Variable	Item	Rating scale/Answer options
	Political orientation	Where would you place yourself on this scale representing political views from left to right ?	Left (1) - Right (7)
	Carbon-intensity of lifestyle	Compared to the average citizen in the country you are currently residing, how carbon intensive do you think your lifestyle is?	Much lower (1) - Much higher (5)
	Advocate / activist in inner circle	Does anyone close to you engage in climate activism or advocacy?	Yes (1), No (0)
	Survey source	How did you come across this survey?	Via personalized e-mail, Via an association or organization, Via social media, Other, please specify: [open text field]

Note: ^aThere are many definitions of **civil disobedience**, but it can broadly be understood as a "constrained, communicative protest, contrary to law, that people engage in to support a change in governmental or nongovernmental practices" (Smith & Brownlee, 2017) or as a "public, nonviolent, conscientious yet political act contrary to law usually done with the aim of bringing about a change in the law or policies of the government" (Rawls, 1971). Civil disobedience actions vary widely, ranging from strikes and boycotts to blocking the construction of oil pipelines. Civil disobedience has been used by numerous past social movements, including the suffragettes, the Indian independence movement, and the civil rights movement. It comes with the risk of arrest. ^bClimate change **advocacy** is the promotion of actions and policies aimed at reducing the impacts of climate change through for example public education, awareness-raising, and political engagement.

Supplementary Table 3. Frequencies and percentages (in brackets) each answer option was chosen per item assessing climate change beliefs. Frequencies and percentages are based on the raw (not imputed) data.

Variable	Item	Not at all	Very little	A moderate amount	Quite a bit	A great deal	NA
Believed climate impacts on self	How much do you believe climate change will harm you personally?	52 (0.6%)	824 (8.9%)	2,746 (29.8%)	3,599 (39%)	1,997 (21.7%)	2 (0.0%)
Worry	Overall, how worried are you about climate change?	41 (0.4%)	232 (2.5%)	1,247 (13.5%)	2,970 (32.2%)	4,728 (51.3%)	2 (0.0%)
Informed on climate change	How informed do you consider yourself to be about climate change?	3 (0%)	247 (2.7%)	2,295 (24.9%)	3,890 (42.2%)	2,783 (30.2%)	2 (0.0%)
Personal responsibility	To what extent do you feel a personal responsibility to reduce climate change?	74 (0.8%)	622 (6.7%)	2,588 (28.1%)	3,706 (40.2%)	2,228 (24.2%)	2 (0.0%)
Academic responsibility	To what extent do you feel a responsibility as a scientist or academic to reduce climate change?	176 (1.9%)	724 (7.9%)	2,002 (21.7%)	3,261 (35.4%)	3,055 (33.1%)	2 (0.0%)
Responsibility of institutions	To what extent do you feel that scientific or academic institutions have a responsibility to reduce climate change?	62 (0.7%)	290 (3.1%)	1,174 (12.7%)	2,978 (32.3%)	4,711 (51.1%)	5 (0.1%)

Supplementary Table 4. Frequencies and percentages (in brackets) each answer option was chosen per item assessing beliefs about how to address climate change (top section), barriers to joining legal climate-change-related protests (second section) climate change advocacy (third section) and beliefs around the role of scientists and credibility of scientists engaging in protest or advocacy (bottom section). Frequencies and percentages are based on the raw (not imputed) data.

Variable	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	NA
Not much we can do	There is not much we can do to reduce climate change.	4,571 (49.6%)	3,434 (37.2%)	641 (7.0%)	385 (4.2%)	179 (1.0%)	10 (0.1%)
Technology will solve the problem	Advances in technology will largely solve the problems caused by climate change.	1,164 (12.6%)	2,847 (30.9%)	2,665 (28.9%)	1,971 (21.4%)	565 (6.1%)	8 (0.1%)
Scientific institutions do enough	Overall, scientific and academic institutions are doing enough to address climate change.	1,611 (17.5%)	4,094 (44.4%)	2,292 (24.9%)	1,027 (11.1%)	190 (2.1%)	6 (0.1%)
System change required	Addressing climate change requires fundamental changes to social, political, and economic systems.	177 (1.9%)	235 (2.5%)	398 (4.3%)	2,336 (25.3%)	6,064 (65.8%)	10 (0.1%)
Lifestyle changes required	Addressing climate change requires significant changes to personal behaviour and lifestyle.	133 (1.4%)	455 (4.9%)	933 (10.1%)	4,152 (45.0%)	3,540 (38.4%)	7 (0.1%)
Local actions are futile	Local actions are futile, because only a globally coordinated response can have an impact addressing climate change.	1,734 (18.8%)	4,075 (44.2%)	1,661 (18%)	1,286 (13.9%)	457 (5.0%)	7 (0.1%)
Local actions are effective	Local actions are effective (e.g., they can create a ripple effect that can spur global action addressing climate change).	163 (1.8%)	734 (8.0%)	1,878 (20.4%)	4,901 (53.2%)	1,536 (16.7%)	8 (0.1%)
Governments do enough	Overall, governments are doing enough to address climate change.	5,411 (58.7%)	2,828 (30.7%)	580 (6.3%)	210 (2.3%)	183 (2.0%)	8 (0.1%)
Activists can drive change	Environmental activist groups can drive positive change in	258	598	1,986	4,639	1,733	6

Variable	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	NA
	addressing climate change.	(2.8%)	(6.5%)	(21.5%)	(50.3%)	(18.8%)	(0.1%)
Negatively affect reputation	It might negatively affect my reputation.	3,156 (34.2%)	2,977 (32.3%)	2,177 (23.6%)	728 (7.9%)	139 (1.5%)	43 (0.5%)
Potential repercussions	It might lead to repercussions from my employer, funding agencies, or the government.	3,357 (36.4%)	2,991 (32.4%)	1,689 (18.3%)	870 (9.4%)	265 (2.9%)	48 (0.5%)
Do not know enough about climate change to engage	I do not know enough about climate change to engage in such actions.	3,680 (39.9%)	3,045 (33.0%)	1,384 (15.0%)	915 (9.9%)	144 (1.6%)	52 (0.6%)
Do not know any groups	I do not know any groups that already engage in these actions and that I could join.	1,818 (19.7%)	2,233 (24.2%)	2,055 (22.3%)	2,603 (28.2%)	449 (4.9%)	62 (0.7%)
Not convinced of impact	I am not convinced that such actions would have real impact.	985 (10.7%)	2,054 (22.3%)	2,026 (22.0%)	2,912 (31.6%)	1,190 (12.9%)	53 (0.6%)
No time	I simply do not have time to engage in them.	623 (6.8%)	1,473 (16.0%)	2,307 (25.0%)	3,383 (36.7%)	1,375 (14.9%)	59 (0.6%)
Lifestyle too carbon-intense	I would feel uneasy participating due to my carbon-intense lifestyle.	3,070 (33.3%)	3,528 (38.3%)	1,794 (19.5%)	699 (7.6%)	80 (0.9%)	49 (0.5%)
Negatively affect reputation	It might negatively affect my reputation.	3,784 (41.0%)	3,254 (35.3%)	1,594 (17.3%)	423 (4.6%)	69 (0.7%)	96 (1.0%)
Potential repercussions	It might lead to repercussions from my employer, funding agencies, or the government.	3,887 (42.2%)	3,183 (34.5%)	1,426 (15.5%)	505 (5.5%)	121 (1.3%)	98 (1.1%)

Variable	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	NA
Do not know enough about climate change to engage	I do not know enough to speak comfortably about climate change.	2,195 (23.8%)	2,471 (26.8%)	1,707 (18.5%)	2,302 (25.0%)	430 (4.7%)	115 (1.2%)
Do not know any groups	I do not know any groups that already engage in these actions and that I could join.	1,524 (16.5%)	2,138 (23.2%)	2,107 (22.9%)	2,890 (31.3%)	451 (4.9%)	110 (1.2%)
Not convinced of impact	I am not convinced that such actions would have real impact.	1,768 (19.2%)	3,226 (35%)	2,115 (22.9%)	1,598 (17.3%)	396 (4.3%)	117 (1.3%)
No time	I simply do not have time to engage in them.	926 (10.0%)	1,549 (16.8%)	2,142 (23.2%)	3,230 (35%)	1,266 (13.7%)	107 (1.2%)
Lifestyle too carbon-intense	I would feel uneasy participating due to my carbon-intense lifestyle.	3,219 (34.9%)	3,372 (36.6%)	1,801 (19.5%)	644 (7.0%)	79 (0.9%)	105 (1.1%)
Academics should protest more	Scientists and academics working on topics related to climate change should engage more in protests that call for action on climate change.	587 (6.4%)	1,472 (16.0%)	3,376 (36.6%)	2,699 (29.3%)	1,056 (11.5%)	30 (0.3%)
	Scientists and academics, including those not working on topics related to climate change, should engage more in protests that call for action on climate change.	661 (7.2%)	1,474 (16.0%)	3,675 (39.9%)	2,639 (28.6%)	739 (8.0%)	32 (0.3%)
Academics should advocate more	Scientists and academics working on topics related to climate change should engage more in advocacy on climate change.	257 (2.8%)	450 (4.9%)	1,955 (21.2%)	4,308 (46.7%)	2,215 (24.0%)	35 (0.4%)

Variable	Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	NA
	Scientists and academics, including those not working on topics related to climate change, should engage more in advocacy on climate change.	403 (4.4%)	926 (10.0%)	3,169 (34.4%)	3,589 (38.9%)	1,101 (11.9%)	32 (0.3%)
Protest would diminish credibility	Participating in legal climate change-related protests would diminish scientists' credibility.	2,490 (27.0%)	3,488 (37.8%)	2,038 (22.1%)	919 (10.0%)	258 (2.8%)	27 (0.3%)
Advocacy would diminish credibility	Engaging in climate change advocacy would diminish scientists' credibility.	3,251 (35.3%)	3,877 (42.0%)	1,529 (16.6%)	388 (4.2%)	148 (1.6%)	27 (0.3%)

Supplementary Table 5. Frequencies and percentages (in brackets) each answer option was chosen per item assessing engagement with climate change. Frequencies and percentages are based on the raw (not imputed) data.

Variable	Item	Would not be willing to	Would be willing to	Already do / did	NA
Lifestyle behaviours	Reducing car usage.	515 (5.6%)	2,338 (25.4%)	6,347 (68.8%)	20 (0.2%)
	Switching to an electric vehicle.	667 (7.2%)	6,654 (72.2%)	1,827 (19.8%)	72 (0.8%)
	Increasing energy efficiency or shifting to renewable energy at home (e.g., installing solar panels, installing a heat pump, improving insulation, switching to a green energy supplier).	121 (1.3%)	4,827 (52.4%)	4,259 (46.2%)	13 (0.1%)
	Having fewer or no children.	4,302 (46.7%)	1,500 (16.3%)	3,290 (35.7%)	128 (1.4%)
	Following a mostly vegetarian or vegan diet.	2,673 (29%)	2,920 (31.7%)	3,613 (39.2%)	14 (0.2%)
	Reducing the amount of flying.	1,363 (14.8%)	3,107 (33.7%)	4,733 (51.3%)	17 (0.2%)
Civic actions	Talking about climate change with others.	247 (2.7%)	1,921 (19.8%)	7,143 (77.5%)	9 (0.1%)
	Donating money to an organization that works to reduce climate change.	1,982 (21.5%)	4,330 (47.0%)	2,879 (31.2%)	29 (0.3%)
	Signing petitions for policy changes addressing climate change.	935 (10.1%)	3,908 (42.4%)	4,360 (47.3%)	17 (0.2%)
	Advocating institutional change (e.g., for universities to divest from fossil fuels, for less meat in catering or cafeterias, for a mandatory course on climate change).	906 (9.8%)	5,547 (60.2%)	2,750 (29.8%)	17 (0.2%)
	Engaging directly with politicians or policymakers on topics related to climate change (e.g., attending city council	1,851 (20.1%)	5,528 (60.0%)	1,822 (19.8%)	19 (0.2%)

Variable	Item	Would not be willing to	Would be willing to	Already do / did	NA
	meetings, giving expert advice).				
	Writing letters to or emailing politicians, civil servants, journalists or editors about the topic of climate change.	2,599 (28.2%)	5,125 (55.6%)	1,477 (16.0%)	19 (0.2%)
	Participating in nonviolent civil disobedience actions related to climate change	4,178 (45.3%)	4,116 (44.6%)	897 (9.7%)	29 (0.3%)
Work-related	Shifting my research to include topics related to climate change.	2,046 (22.2%)	2,555 (27.7%)	4,591 (49.8%)	28 (0.3%)
	Including material about climate change in my teaching.	874 (9.5%)	3,670 (39.8%)	4,603 (49.9%)	73 (0.8%)
Legal protests	Would you be willing to engage in legal climate change-related protests (e.g., marches, demonstrations)?	2,680 (28.1%)	4,363 (47.3%)	2,160 (23.4%)	17 (0.2%)
Advocacy	Would you be willing to engage in climate change advocacy ?	1,181 (12.8%)	5,315 (57.6%)	2,706 (29.3%)	18 (0.2%)

Supplementary Table 6. Final coding scheme used to analyze the open-text responses to additional barriers to engaging in climate change advocacy and joining legal protests. The number of occurrences of each code and proportion per type of engagement is displayed, as are examples per code and the code description.

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
No barriers/not applicable	No barriers/not applicable	"I am already an advocate in my own circle of influence. I perform research that helps address climate issues. I respect the right of others to join an organized movement if they like and I expect others to respect my right to decline joining an organized movement." "I have strongly engaged 12 months ago but should have done earlier." "I consider this also as part of my role as a scientist involved in studying climate change."	"I always made sure that the protest I go to is legal and that I am not going against the law." "I have participated -so these questions are irrelevant" "Not really. This was something that I started doing early in college. It wasn't a difficult decision."	Respondents indicated having no additional barriers, they described being active (without discussing barriers) or described potential barriers which may not concern themselves. This code was also used when respondents did not answer the question or if their answers were unintelligible.
Practical factors inhibiting action	Lack of time, energy, work/family commitment	"Too much else on my plate" "And the number one reason, this is not the number one topic on my long list of things that need doing. Like picking up the kids from school, cooking dinner, and actually doing my professional work that pays the bills. Same thing that applies to most other people above the age of 30." "Too busy with pursuing my PhD. I've lost my work-life balance a long time ago, so finding additional time for this advocacy is very low on my priorities list (e.g. maintaining my	"I have a kid and a full-time job, and the cost-benefit calculation does not seem worth it given the limited potential impact I would expect my participating would have." "Just too busy. Also, this is fixed at a level above people. Governments need to drive this." "Time to participate is my main concern."	Respondents cited various constraints, including time, energy, and work and family commitments as reasons for not being able to prioritize climate change advocacy and/or protest. Many mentioned not taking the time for such activities given the cost-benefit analysis due to the perceived limited impact of engaging in such activities. Additionally, some cited the time commitments associated with caring for young children or other care responsibilities as a barrier to their involvement in advocacy/protests. Work commitments cited included having a full time job, having to focus on tasks incentivised by work given precarious working conditions (e.g., not having a tenured position).

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		relationship is more important when I have half a day off each week)."		
Practical factors inhibiting action	Lack of opportunity	"I live in a rural area where there is simply not much opportunity, and also my research field is far removed from climatology." "see my response to a previous answer. The issue has to do with where I am located, in a remote area of farmers, in a town of 580 people, and where the advocacy actions are to take place. Is my participation worth the carbon it takes to get me there?" "Lack of opportunity and time"	"Protests do not commonly occur, if ever, in Japan (particularly rural Japan, where I work)" "We haven't had them in my town, I don't have time to organize them, and I don't have time to travel to distant towns to protest or even to figure out how to find out when one is occurring. But maybe that is because it has not become enough of a priority yet." "For instance, my town does not organize legal climate change-related protests often, and to reach the closest ones, I need to travel for 400/500 km (at least). And if I need to travel to reach a protest, I will contribute to climate change. One opportunity is to engage local communities."	Respondents highlighted that they lack opportunities to engage in advocacy or to join protests. One factor discussed for both advocacy and protests was how travel and location can be barriers, including living far from major events, facing high costs of (public) transport, or feeling that traveling would defeat the purpose given the environmental costs. For advocacy, lack of opportunities was often mentioned without further explanation, some did mention that they had not yet been asked to engage in advocacy and others noted that while they are not willing to organize events themselves they would be willing to participate if given the opportunity. Some respondents noted that the lack of opportunity (i.e., them not being invited to events) may stem from their research area not being on the topic of climate change, or not relevant in the local context, that they may hold a position which is too junior to be invited to events, or that their current job position does not offer such opportunities. For legal protests, not having (local) opportunities were reported as a barrier, including no protests taking place or protests being illegal in the country/region they currently reside.
Practical factors inhibiting action	Lack of skill: Expertise in activism/organizing, climate,	"I know a lot about climate change but did not feel that I was enough of an expert until now" "I don't have the	"When I think about the problems in my community, in the USA and in the world, climate change is certainly important. But it is not the most important,	Respondents highlighted that they lack skills that they perceive are needed for engaging in advocacy or joining protests. This barrier was discussed much more for

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
	or communication	status, credentials to advocate strongly for climate change action. Senior academics would have a stronger impact." "I feel I lack the skills or training to discuss and advocate in a non preaching way."	nor is it something that I am particularly qualified to advocate for. Improved public education for kids is an enormous issue in my community and the whole USA; that is probably where I should be putting my time. Poverty and discrimination also rank highly, in my estimation. With infinite time, I'd participate in climate-change protests, but I should attend to these other issues first." "One concern is to communicate climate change e.g to the press / TV ... Knowing and 'knowing to communicate' are not the same thing." "Probably most important reason is that I always want to feel fully informed about the topic before I engage. This is of course almost impossible for climate change."	advocacy, including (perceived) lack of expertise/in-depth knowledge on climate change, communication skills and a lack of status or credentials in the field. Many mentioned a hesitancy to speak out about climate change given it is not their (main) field of study. Some respondents mentioned that they would be interested in receiving training in advocacy skills, such as learning about communicating to broad audiences or pathways to influence. Those who mentioned a lack of skill as a barrier for joining protests discussed wanting to be fully informed before joining protests, and the difficulties with communicating climate change well.
Consequences of action (perceived and experienced) that inhibit action	Risk of arrest and/ or other legal consequences/ protesting illegal	have internalized the fear associated with that to a large extent." "It might be illegal to me to participate since I am an expat in [Asian country]."	"I have been to a number of demonstrations over the years. If you are unlucky you can be targeted erroneously by the police as a trouble maker despite being a bystander/legal protestor. If you are really unlucky then you can arrested and it stays on your record and you are then on list of known agitators. This has happened to a close friend of mine. Given my standing in the scientific community and the meaningful change I can make through my research/teaching/innovation activities, I am very conscious I should not take the risk that might lead to any difficulties in executing these." "if the situation escalates and I end up being arrested, the	Respondents noted that risk of arrest and legal consequences, including protesting being illegal where they live, may deter them from engaging in advocacy or joining protests. In different countries, including France, and the UK, political responses (e.g., recent protest laws) to activism may discourage participants from joining legal climate protests. Respondents not living in their home country highlighted the potential of legal repercussions for them. Some respondents described such risks as barriers to advocacy, including fear of legal consequences and deportation, for instance.

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
			repercussions for me as a foreigner will be more strongly felt than someone who is from this country." "This behaviour is not allowed in my country."	
Consequences of action (perceived and experienced) that inhibit action	Risk to employment/ reputation	"I do a lot of work with the private sector and I am concerned that I may lose credibility where perceived as "too radical" by participating in such activities." "I work for a state university and our state government already regards their fellow public servants (we the university faculty) as a political enemy. I don't want to hurt my institution or its students." "I already do this extensively. As I am a government scientist, I have to do this carefully to avoid losing my job."	"It definitely comes with a certain risk of your engagement affecting your reputation. Not everyone within the scientific community agrees with you being politically active." "That there may be kickback from the university (e.g. being told not to engage in protests) because they are not carbon neutral/have conflicting interests. This has a much bigger consideration as an early career researcher (non tenured) than if you are a tenured professor." "I work for the government, and I could be fired."	Respondents noted concerns about how their involvement in climate change advocacy/protests might affect their employability, reputation, or career prospects as barriers to engagement. Employability-related worries included fear of being seen as too radical, or losing connections and collaborations with government or other stakeholders; and even risks of being fired. Others discussed that they fear repercussions from their employer, including losing their job, and possible repercussions for their students and institute.
Consequences of action (perceived and experienced) that inhibit action	Risk to personal safety and aversion to (online) confrontation	"Conservative people in the United States are insane... I don't want to be shot for discussing climate change." "See above. It's dangerous. People get shot for doing that in my state" "Fossil fuel companies attack climate advocates; I was concerned about the impact this could have on my family."	"In France, "legal marches" are facing more and more police violence, and are less legally authorised than before. So, the point is not anymore "do I want to go to this march". it is more "what equipment should I take : safet glasses to protect myself from the LBD bullets? Gloves to throw away the lacrymogenes grenades ? Helmet? Other?". See the documentation about Sainte-Soline or "réforme des retraites" marches for examples." "I am hesitant to participate in events with crowds of people due to my	Respondents discussed concerns about personal safety and physical harm as a barrier to joining legal protests and advocacy. This included fear of uncontrollable situations during protests, concerns about the effects of aggressive police action on physical and mental health, and fear for personal safety as a target of police or non-police individuals during protests. Risk to personal safety was linked to political tensions in certain countries (e.g., United States of America) and escalation tactics of local police (e.g., in France). Respondents also pointed out that

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
			fear of mass shootings and violence. This is my primary reason." "Arrest, incarceration, death by cop."	they/their family members may be targeted by the fossil fuel industry for engaging in advocacy or protest..
Consequences of action (perceived and experienced) that inhibit action	Residency & visa concerns	"See previous answer. The idea of getting deported isn't fun." "I'm an expat in a repressive country." "I'll reply similar concerns as the last long answer about my citizenship status"	"I am an immigrant worker on a visa in my current country and I am therefore more cautious about engaging in protests than I was in my home country, in case it negatively impacts my immigration status." "Not having an EU citizenship yet and feeling (politically, socially) unsafe to engage in such protests in the EU with a non-EU passport" "I am a colombian studying in the netherlands. I do not want to have issues with policy that could affect my migration status. Consequently, I support protest and marches but I am not directly involve it."	Respondents expressed concerns about visa and residency status as a barrier to climate advocacy/protesting. They expressed visa concerns related to arrest and deportation risk, fear of arrest and impact on future visa applications, and citizenship concerns related to joining (legal) protests. Some mentioned that it may be illegal for them as foreigners to join local actions; with some mentioning that if they were in their country of origin, they would engage in such activities.
Consequences of action (perceived and experienced) that inhibit action	Unintended adverse effects (including distracting, effects on nature and people, polarization)	"I might be focused on the extremes, but many organizations try to profile by being more extreme than ever. If you are not with them, you are against climate change. I do believe a lot of people recognize that climate change is a real problem, but the extremities in some of these organizations undermine public support." "In my country climate change advocacy are weak and very focus on local issues (which can even negatively affect climate change	"I feel like the attention to these protests (which I considered important) is very often re-directed (e.g., by the press and social media) to flamboyant misinterpretations of the essential facts to discuss. Although I considered the simple fact that the problems are discussed (or in this case protested) to be fundamental to calling the attention of policymakers, the aforementioned counter-productive behaviours make me reticent about participating." "I fear it will cause negative and counteractive ripple effects leading to hate, arrogance, hopelessness, and polarization" "Protests make people angry, both	Respondents expressed concerns about unintended consequences of advocacy/protests, which may deter them from engaging in such activities. Potential adverse consequences discussed include consequences on the (local) environment, and the local population, including workers and people with low socioeconomic status. Risks of messages being politicized/redirected by the press, social media or protest being instrumentalized by politicians were mentioned as additional potential unintended adverse effects. Respondents also discussed that they believe or fear that such actions may lead to (more) political polarization, which may undermine public support and

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>policies such as opposition to new train/metro lines, solar/wind farms and lithium mines to name a few of the main points that important environmental groups protests in my country)." "Worry of adverse effects (e.g. people feeling threatened and thus even less willing to consider more sustainable lifestyles)"</p>	<p>those who are protesting and those who are targeted. We do not need more anger in this world. Use your time constructively. Advocate for greener energy. Educate that climate change is a normal process over the history of life. Add to research on that is not alarmist, but identifies the most important impacts on the life of people, suggest ways of mitigating the impact and increase resilience. Not wave hands and say "climate change bad, life will end" but "people in the Ganges delta will suffer due to sea level rise, let us try to improve their homes and way of life so that they will be less affected." Stop the vague alarmism, focus on specific do-able actions with defined payoffs."</p>	<p>thereby hinder policy implementations.</p>
<p>Doubts about the efficacy of action - Collective or personal</p>	<p>Doubts about efficacy of (participating in) such action (e.g., protests/ advocacy are not effective)</p>	<p>"It could be a waste of time, because policymakers and the media tend to listen more to louder voices than mine." "Not really convinced --would need to see evidence that the campaign of advocacy is impactful." "Again, I am not fully convinced that it would have any serious. Many (more or less famous) already did, and see where we are..."</p>	<p>"My primary concern, as someone who studies social change and has a firm grasp of historical social movements, I know that legal protests of the sort you seem to be suggesting almost never work to effect change, and they rarely work to even change people's minds. (And exceptions tend to be things like the American Civil Rights Movement or the global Gay Pride Movement — in the former, most of the things we remember as legal protests were either *illegal,* or their purpose was not so much to protest as to get people to a place where they could accomplish a non-symbolic action, such as registering to vote. For the former, because</p>	<p>Respondents expressed doubts around the effectiveness and impact of advocacy/protests as a barrier to engage in such behaviour. Concerning advocacy, respondents stated that they doubt that they could have an impact, for instance on policy makers, mentioning that many have tried to advocate to no avail. Concerning protests, doubts were raised on whether they can bring about significant policy or societal change. Some respondents detailed their personal experiences with protests, mentioning historical examples in which protests did not bring about change; or their knowledge of social change as reasons for their doubts of efficacy of legal protests. Others expressed uncertainty about the effectiveness of certain forms of activism, such as</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
			<p>increasing visibility and using visible spaces to project pride rather than shame and hiding is a key strategy of the movement. And legal protests are not a terrible tool for that — though often illegal protests, such as “die ins” in private spaces or on public roadways, work better.” “The main reason is that I am not convinced they have real impact. Protests have been ongoing for decades, but unfortunately with not much impact despite some being really joined up and highly influential events (e.g. Greta Thunberg). I felt the general public engaged more with Don’t Look Up (the movie) than with Greta.” “I’m not convinced that these protests are a good use of everybody’s time. It may make the marchers in Western democracies feel happy about meeting like-minded people, but does it actually affect policy? How does it affect policy making in countries where much of the carbon is actually extracted? Is there research about this? Similar anti-war protests have been absolutely useless at achieving their goals, however much I wish it wasn’t so.”</p>	<p>blocking roads, or detailed conditions needed for legal protests to be effective.</p>
Doubts about the efficacy of action - Collective or personal	Believing they can be more effective in other role/they see themselves having a different role	<p>“It’s a matter of prioritization: I think doing science is a priority for me and the society, while my skills for advocacy are quite limited (though, admittedly, I should make a better effort).” “Climate change advocacy is politics. I think I</p>	<p>“As a scientist, I feel that I can be more effective in disseminating my understanding through communication such as oral and written presentations. I already give many, many talks to community organizations, non-governmental organizations, and governmental agencies engaged</p>	<p>Respondents expressed a belief that they can be more effective in other roles than by participating in advocacy/activism or they see themselves having a different role (e.g., teaching, outreach). Many described that they believe that in their role as scientists, they can, for instance through research or teaching, more effectively contribute to</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>can make a bigger impact as a scientist than as a politician. I choose to do science, not politics -- that's who I am. I would not make a good politician." "My job is as climate change reseacher. I ak not an "influencer". Engaging in advocacy means taking time from other things. I think everyone needs to do their job.i do promote climate awareness in my everyday life but I do not want to change my job description."</p>	<p>in resource management and I have written materials (books, blog posts, websites) aimed at non-scientists, as well as giving many interview for television, online platforms, radio, and print journalists." "There is value in protests but there is also a preference on what front you choose to raise awareness against climate change, and protests are not the venue for me. Another option to your list is communicating science to underserved communities, excluded groups, minorities that will also be impacted by climate change. I have done that and know the positive impact of it." "I think that I can, in my special position, have a greater impact on people's attitudes if I concentrate on research and teaching, than if I attend protests. I research and teach on a responsible conduct of different professions and aim at addressing climate questions this way more strongly in the future, especially through educational approaches that can be mainstreamed."</p>	<p>the cause. Others described that they prefer a different role, such as acting as a role model in changing their lifestyle behaviour, by communicating climate change to different audiences, or writing materials aimed at non-academic audiences. Concerning advocacy, some scientists discussed that they do not see advocacy as part of their job and prefer spending their time on research and/or teaching.</p>
<p>Doubts about the efficacy of action - Collective or personal</p>	<p>Describes other route to change (e.g., worker unions, governments, (tech) solutions, countries)</p>	<p>"Climate change advocates in [country in Asia] are anti science and anti technology people. Some are nativists, some against big business. I don't that is a correct approach. A poor man in India requires better earning, farmers require higher yields. It is by S&T and knowledge sharing that we can move</p>	<p>"Governments ignore protests. They are pointless. We need new decision making processes to kick out corporate interests out of government. We need to replace elections with lotteries at least in part. Elections require funding and that creates a bottle neck for corporate interests to attack. Gov becomes beholden to corporations. We literally need a new form of government that makes decisions well</p>	<p>Respondents expressed a belief that other actions or solutions are needed to address climate change, rather than engaging in advocacy or protesting. Different routes to change were described, including a need for lifestyle changes, investments in science and technology (i.e., tech solutions including carbon capture and nuclear energy), educating/communicating about climate change, engaging with populations skeptical of climate change, using the legal</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>forward." "Again, working on solutions and advocating those is more productive in my view than simply preaching that climate change is a reality. Deniers will not be turned around, but can be convinced if the climate positive action is cheaper, easier for them. We need to make climate positive actions attractive by making them the better solution." "We are past advocacy, it is high time to act and reduce oil and gas extraction. This is known!"</p>	<p>outside of economic parameters. Universities should supply this kind of thinking but they too are beholden to government funding in turn beholden to corporate interests. Academics focused on create businesses and getting their science into markets are missing the point here. We should be inspiring system level change from local municipalities to the top of the UN!" "I live in a very liberal city where a large number of people are already conscious about climate change. To have a real impact, one must engage with those communities that are skeptical about climate change, e.g. the 'red states'. This would require me to travel/fly to those places, which has strong carbon footprint. Protests don't change people's mind, they only polarize, antagonize and divide people. One must have friendly, non-condescending conversations with those who are climate change deniers. Show them that they will actually benefit by going green." "I'm appalled by the idea that positive societal changes would only happen if people marched and yelled on the streets. If the political system cannot make decisions based on the common opinion (polled, surveyed, expressed through statements) and expert advice, then the system is not functioning as it should, and the representatives are not performing their duty."</p>	<p>system to implement changes, and changing the system from within. Some respondents described believing that democratic processes are the route for change, including policy changes, whereas others described that more radical action is needed for change (i.e., revolution/end of capitalism), or that governments need to be re-organised in order to decrease the influence of corporations on political decision making. Others stated that other parties have to drive the change, including worker unions, (international) governments, financial and economic institutions, or other countries (e.g., China, USA).</p>
Doubts about the	Assuming others	"I think that only people that are	"This should be done by social scientists and	Respondents felt that addressing climate change is best left

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
efficacy of action - Collective or personal	(e.g., experts, activists) will or should act instead	professionally competent should talk about anything. We have had enough of bad communication to the public by so-called experts during covid-19 to have learned that." "THIS SHOULD BE DONE BY PEOPLE WHO KNOW WHAT THEY ARE TALKING ABOUT! And not by (social) scientists or (young) people without expertise." "this should be reserved for climate experts, which is not my field of expertise"	activists. As a researchers, I may not be able to devote time for these." "I've beeng activist for many years, but it is not enough or useful once there is not an agenda from the public administrations and governments. Activists are mostly useless without the concern of an educated society supporting the manifestations. Also it is not a single solution, there are different roles to be played from different groups in the society and subgroups of it, for instance, it is conter-productive to take a scientist (usually age over 45) out from his lab and productive routine to show up in public strike. Students are the most powerful entity in human society, every student is part of a (proud) family, is a socially important citizen in formation, and are the young and strong arm, with the needed energy to move forward. As an example, here in Brazil, students have made history more than once." "I think there is some division of labor. When I was younger I went to more protests, but now I feel there are more efficient ways I can allocate my time."	to experts or others already engaged. Respondents described believing that different actors play different roles within society and argued that scientists play a different role than advocates/activists. Some respondents argued that it is up to younger generations or students to drive change concerning climate change (e.g., by joining legal protests). Others argued that there are enough people joining legal protests, so that they do not feel required to join as well. Concerning climate change advocacy, respondents described that experts (in climate change, communication) should engage in advocacy.
Perceptions of activist strategy and ideology that prevent or reduce activism engagement	Concerns around strategy and/or ideology within/across groups (e.g., disagreement about demands (e.g., proposed solutions)/	"I would advocate most but not all of the currently proposed solutions (e.g., I favour technology over compulsory behavioural change)." "Because my definition of climate change advocacy is very different from the one that XR has and that is probably meant here. I	"The interests of those who participate in protests are so varied--I find it difficult, for example, to align with those who believe a vegan lifestyle helps address climate change. Also, the protest targets are often cliché (i.e. protest a coal mining plant, a nuclear site) and do not seek compromise solutions. Hence, while I believe collective action is good to draw attention to	Respondents discussed their concerns regarding the action strategies, ideology, demands/messages, and proposed solutions used by groups as barriers to advocacy/joining protests. While some expressed the need for more specific demands and focus of climate activist groups, others found the agenda too narrow, for instance arguing that socio-economic factors are not being taken into account. Voiced

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
	messages used, distrust of groups and actions)	believe in enhancing the science-technology spiral. And for that we need science, industry and state." "I do not like when advocacy becomes 'religion' or dogmatic. Many climate change advocates (e.g. on Twitter) tackle the issue with an adversarial tone ('us versus them', 'we are smart, they are stupid') and that is a terrible posture to take. It's ineffective and it only favours the gridlock of the societal dialogue, which in turns favours right-wing populist parties."	an issue, and therefore I might join a protest to highlight an ignored issue, I do not think that they have real impact relative to other interventions." "I don't support the organizations and movements associated with climate protest (e.g., Extinction Rebellion) as they are too politically extreme, use methods that I don't like, and tend to link the climate issue with other leftist political agendas (e.g., equality, queer ideology, etc.)." "These are almost never non-violent (at least in France) and they are often tone-deaf (e.g. Greta Thunberg protesting already built wind turbines that are designed to mitigate climate change for some tone-deaf "deer pasture" publicity-seeking endeavor). Protests are often organized with a single agenda without considering a compromise with specific socio-economic factors that might actually recruit more proponents."	concerns included disagreement with activist tactics, such as blocking roads, disagreement with the overarching political thrust of some environmental movements, disagreement with proposed solutions (e.g., proposed policies), association of environmental activism with pseudoscientific beliefs and unrealistic expectations, lack of belief in certain groups' theories of change, lack of articulation of the problem, and goals by some activist groups.
Incompatibility of science and activism	Reflections on the role of a scientist (e.g., concerns about credibility, objectivity, impartiality)	"I believe there is a fundamental conflict of interest in my role as a climate researcher if I engage to strongly in advocacy." "I am a researcher not an activist. Researchers should stay in their lane, or they may compromise the objectivity of their research. Scientists getting involved in political advocacy is a slippery slope and I will not be part of	"While scientists should voice clear opinions based on their knowledge, they should not interfere too strongly in the political process, because this could hamper their perceived impartiality." "It is important as an academic leader to consider carefully what are the most impactful activities at particular career and lifestages. A misjudged interaction can undermine potentially more powerful influences available through different routes by changing perception of	Respondents expressed how their role as a scientist may deter them from engaging in advocacy/joining protests. They discussed the importance of being seen as unbiased and credible in order to effectively influence policy and maintain collaborations with different stakeholders. They are concerned about being perceived as biased or losing credibility if they become more vocal about climate change. These responses highlight the tension between activism and the "ideal" of scientific objectivity and neutrality, with

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>it." "Scientists who do a lot of advocacy lose their ability to be "honest brokers." I worked at NASA/GISS for a very out-in-front advocate, and it caused blowback. I do climate change education in a variety of settings, but I present facts and draw lines in terms of what I am and am not an expert in."</p>	<p>evidence based vs. advocacy. It's a fine line." "Activism is perceived as a political statement." Scientists must remain credible and should not be seen as manipulated to political agendas."</p>	<p>concerns about perception of reduced objectivity and scientific integrity. Some voiced believing that scientists should remain impartial, while others argued that scientists have a responsibility to advocate for their research and address societal issues.</p>
			<p>"I don't seem to be on the right "channels" to hear about them in time to participate (that is, my schedule is already booked with commitments that relate to climate change but are not marches or demonstrations) and so I can't re-arrange to participate." "It is so difficult to find advertisement for such events." "It relates to my answer that I do not know any activist groups on the topic: I do not know when and where such protests take place. My social bubble (social media) consists of people who are not climate activists/ engaged, therefore I don't see any news or updates on planned protests. And such actions are not really advertised in the news, so IMO social media is the easiest and most common way of information about such actions."</p>	<p>Respondents expressed not knowing what actions to take or where to start in terms of engaging in advocacy/joining protests. Some described feeling overwhelmed with the amount of information available and are unsure of which cause to focus on, while others feel that there is not enough information available to help them determine the best way to get engaged. Many also discussed being unsure of how to apply their expertise or skills to climate advocacy. Some noted that it is difficult to know which groups to join given that vetting the groups can be time consuming. Concerning advocacy, respondents also mentioned that getting access to different stakeholders (e.g., policy makers, the general public) can be an important barrier.</p>
Knowledge deficit preventing action	Not knowing where to start or which actions to take, with which groups or the quality of the groups, access to audiences	<p>opportunity/invitation to engage." "I do not know what kind of engagement I could do. Without being offered a particular engagement, it requires a lot of initiative from me which makes it hard to start."</p>		
Barriers related to (mental) health and intersectionality	(Mental) health and intersectionality (e.g., equality, diversity,	<p>"See preceding comment -- when I would be much younger I would be willing to put all my energy in the</p>	<p>"I have health problems (limited mobility) that do not permit me to march or protest" "I'm semi-retired, not as mobile as I used to be, and avoid big crowds in</p>	<p>Respondents highlighted various barriers related to (mental) health and intersectionality (e.g., equality, diversity, inclusion) that prevent them from engaging in climate</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
	and inclusion)	<p>engineering pursuit, by educating people, by doing research and so forth." "Not got any opportunity and due some health problems." "I used to be more outspoken previously. Hate speech, harrassment and hate crimes against scientists and physicians during the Covid pandemic reached their goal. As a mobbing victim suffering depression I am not not strong enough anymore to tolerate murder threats."</p>	<p>the age of covid. Aside from that, I'm very skeptical that politicians care much what masses of people want. Personally, I think making sure my students are well aware of the issues is more useful than participating in a demonstration." "recently i have been in a country without permanent residency, i did not participate in any protests during that time due to the potential for seriously negative consequences. Subsequently, the pandemic and my proximity to vulnerable people has meant that i tend to avoid crowds of people "</p>	<p>advocacy/protests, including depression and anxiety, disability, old age and chronic illness. Some respondents mentioned not joining legal protests due to the risk of contracting COVID-19 and others discussed not joining legal protests due to belonging to a minority group, which may expose them to more police violence.</p>
Not identifying with activists	<p>Activist stereotype doesn't include people like them/ has a negative view of activists</p>	<p>"I have not enough respect for most of climate changes' apostles." "This advocacy is largely based on a theoretical orthodoxy from which people cannot deviate lest they be called pseudoscientists. I am also not one to join groups whose plans do not involve consideration of nuclear energy after Germany voted itself into more carbon consumption. Climate activists are not serious people." "The people who engage in climate activism inhabit a different metaphysical universe to me. I have nothing in common with them."</p>	<p>"I believe that most participants in such climate change related protests are extremists in the way they think, which impedes their judgement of possible solutions/reducers to climate change. Being against nuclear energy and ignoring the impact of electric cars being good examples hereof. " "In my opinion, in marches or demonstrations there are always fundamental/extremist person who do not hesitate to use violonce against governments / other human beings, and their views do not represent my personal views. I do not want to be associated or support these extremist persons / positions" "Because of the ideological baggage that comes with environmental protests much of which I don't share. Plus the protestors all look like bearded and unwashed throwbacks to the 1970s, white boys with dreadlocks</p>	<p>Respondents noted that they do not identify with advocates/activists due to not sharing beliefs, or values with them or not identifying with the stereotypical perception/depiction of activists. They described activists as (being perceived as) extreme, unserious, and unscientific. Some mentioned how the stereotype of activists does not include people like them.</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
			and anaemic looking women with nose studs and purple hair (or at least the ones they show on the media) and I don't want to associate with a bunch of middle class crusties/hippies. I'll make my protest through the ballot box."	
		"I am too reserved and don't think I have to intellectual or emotional tools to be an advocate" "I think effective advocacy doesn't result from a "just the facts and details" kind of approach that I would be most comfortable with -- it involves an element of salesmanship that I don't have the disposition for."	"Activism kind of things are just not really my cup of tea. I try to contribute in the way I can and are happy to discuss what I do with the people that are close to me. But I don't see myself doing activism" "Being part of big group actions make me uncomfortable as it feels like a mob. I'm an individualist and don't generally engage in group activities." "Personal characteristics/preference is the main reason. I do not feel comfortable participating any form of protests."	Respondents discussed that engaging in advocacy or protests is not for them. Being introverted, not being persuasive, and not wanting to impose their views on others were mentioned as reasons for not being the type of person to engage in climate change advocacy. Respondents mentioned an aversion to being in crowds, not liking to be in big groups, and not feeling comfortable doing such actions as reasons for not joining legal protests.
Personal preferences deterring activism	Not being the type of person	eat more vegetables and less meat overall)."		
Miscellaneous	Priorities: (Would) focus on other issues (social justice,	"Limited time and resources; I already have several other causes that are priorities for me" "if i can make time	"Working for reproductive rights and women's bodily autonomy is more important to me and more urgent right now in my opinion." "My activism always	Respondents described that they are already engaging or would rather engage with other issues of importance, including social justice, racism, women's rights, and

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
	hunger, racism, biodiversity)	engage in any advocacy, the priority would be advocacy against discrimination" "My main difficulty has been feeling overwhelmed by the number of causes I would like to be involved in, and a feeling of not understanding enough about large scale, complicated issues to choose wisely. Over years of learning I've decided to focus on a 'concentric circle' model, i.e. prioritizing municipal issues in the city where I live by engaging with local representatives, then provincial, then national, then global. I do believe that local changes ripple outward, and I can feel confident in advocating for changes in the place that I know and understand well."	focused on other topics (antiracism, feminism, etc.). However, I recently feel more and more the need to participate in climate activism. I just haven't "jumped" yet." "I have been engaged with other political issues, and on top of working full time, I have not prioritized this as much in the past as I plan to in future. My sense of urgency is much stronger than it was a few years ago."	biodiversity loss, for instance. They discussed that already being an advocate/joining protests on a different issue means that they do not have time to also be engaged with climate change.
Miscellaneous	Context: Lack of language skills, local/ political contextual knowledge; other issues more pressing (e.g., starvation, democracy)	"Yes, for instance, in countries ruled by authoritarian governments, there may not be any or limited socio-political environment/space or civil society for democratic participation, civic engagement and advocacy. Or, there can be more alarming social, political and economic issues in the short-medium term so that the development of a political field of climate change is very limited." "I'm a scientist in a foreign country. I don't speak	"The main reason that is not listed above is that I am currently living in post-doc positions which imply traveling in other countries. It takes a great deal of time to adapt to a new country, get to know their protest mechanisms and calendars, get to know the associations that organized such event to participate in it. To sum it up, I would say that my engagement are limited due to my current way of life." "There seem to always be more pressing	Respondents mentioned the importance of the context, that is, the area they are currently residing in, such as knowing the local language and system, but also other issues being more pressing in their area (e.g., threats to democracy, socio-economic hardships, starvation). Not knowing the local language is noted as a barrier to advocacy, given that communication with local communities is difficult/impossible. Moreover, respondents

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		the local language yet. It is complicated to reach the right persons as a forgeriner" "Unfortunately, I live in a country of which I do not speak the language. So it is impossible for me to engage in public advocacy during every day life. I do speak with everyone I can privately, but not publicly."	issues to protest against where I live (Israel)." "People care about housing and job here more than climate change in my place so the protests on this topic are not active."	mentioned that a lack of knowledge of the local language and (legal/political) system creates uncertainty of the legality of protests as well as when specific actions take place. Other issues being more pressing is mentioned as a reason for climate protests not taking place in the area, for instance with protests focusing on more pressing issues (e.g., democracy, women's rights).
Miscellaneous	Not being motivated/ topic not being a priority	"I am not interested in engaging in climate change advocacy." "lack of motivation to get in touch with groups that already engage in these actions" "I'm lazy and also feel it would do little good. Only when the shit hits the fan will the "human race" even begin to change its filthy nature."	"I don't feel motivated to participate in protests of any kind." "I am not invested enough in the topic to actually participate in a demonstration" "A tendency towards inaction (call it laziness if you will), combined with real time-constraints, but I COULD take the time to engage if I prioritize differently. Also, there is the sense that my presence or absence is not going to make any difference - of course if everybody thinks like that nothing will be done."	Respondents discussed a lack of motivation to become engaged in climate advocacy/joining protests. Some stated that climate change is not enough of a priority for them to become active, whereas others noted that they are simply too lazy to get involved.
Miscellaneous	Other	(1) Doubts about climate change: "It is bullshit. Climate hysteria is both a pseudo-religion and a pretence for power hungry entities to limit civil liberties and to get rich on expense of others." (2) Hypocrisy of advocates/activists: "One sided views and lacking education of activists. One activist that glued herself to a highway	(1) Doubts about climate change: "Sure. It's a hoax with zero un-altered data supporting it. Mann's hockey stick was bogus based on tree rings. NASA changes the data. The troposphere is cooling. Deep ocean temperature are cooling. We're entering the weakest solar minimum on record. The 97% consensus is really 1.6%. It's all a scam for control and has zero to do with climate." (2) Hypocrisy of advocates/activists: "Always amusing watching	Respondents discussed additional barriers for engaging in advocacy and/or joining legal protests. One such barrier are doubts about climate change, including the scientific basis of climate change as well as beliefs that climate change may not be detrimental/adaptation may not be needed. The second additional barrier is the perceived hypocrisy of advocates/activists, that is, that their lifestyle choices are not aligned with the cause (e.g., they are still flying). Third, respondents noted that they fear being instrumentalized by

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>did not appear in court, because she had flown to Bali on vacation. Why not practice what you preach." (3) Not being instrumentalized: "I am involved in civil society, but as a scientist I represent my own opinion and am not a proper gender instrument of whoever." (4) Judgment (experienced and perceived) by activists: "The topic is so heavily politicized and moralized that differentiated positions have a hard time being heard. Activists shout down, attack and ostracize those who deviate from orthodoxy. We've seen for example economists being harassed for advocating market-based policies (by climate advocates, not deniers)." (5) Feelings of hypocrisy: "I take flights way too much for "family" reasons, and so I feel at odd with what I'd advocate for." (6) Not incentivised or de-incentivised by work and lack of money (e.g., funding): "How about level of positive incentives and real rewards for engaging in climate change advocacy?" (7) Social norms</p>	<p>people drive a gas-guzzler to a protest, drive around search for parking, protest, feel good, then drive home. Is it action? Not really." (3) Not being instrumentalized: "I do not like to be used by any opposition political wings for their purpose." (4) Judgment (experienced and perceived) by activists: "I was fearful that as being recognized as a newcomer – that I would be looked down upon for not having attended more protests." (5) Feelings of hypocrisy: "Feels hypocritical when I fly for work." (6) Not incentivised or de-incentivised by work and lack of money (e.g., funding): "need financial support for such activities." (7) Social norms unfavorable: "Within my peer group (PI level) climate change related protest is highly disapproved." (8) Concern and/or disapproval of how activist groups use science: "I don't always feel that the arguments used by the groups organizing them are sound and as such would be more inclined to join if the arguments were well founded and the requests realistic" (9) Despair, hopelessness, and inertia regarding (solving) climate change: "Lazy and I'm tired of the human race. I feel it won't change until the shit hits fan x1000."</p>	<p>certain groups. Fourth, respondents discussed being judged by activists due to them not having been active previously or due to their carbon intense lifestyle. Fifth, respondents described their feelings of hypocrisy as reasons to not engage in advocacy and/or protests. Sixth, respondents mentioned that engaging in such activities is not incentivized by their employer and/or that they lack the financial resources to engage in them. Seventh, social norms being unfavorable was mentioned as a barrier, including not knowing anyone to join them in such activities, but also the disapproval of engaging in such activities by their social group. Eighth, respondents mentioned that they have concerns or disapprove of how activist groups use science; such concerns include that the solutions or arguments used by such groups may not be scientifically sound. Ninth, some respondents discussed that their feelings of despair, hopelessness, or inertia regarding (solving) climate change may stop them from being (more) engaged.</p>

Theme	Code	Examples advocacy (3 per code)	Examples legal protests (3 per code)	Description
		<p>unfavorable: "As a woman in stem, my voice is not always recognized by men in authority positions, and engaging in advocacy can be seen as reducing my legitimacy as a scientist among my colleagues and peers." (8) Concern and/or disapproval of how activist groups use science: "never seen advocacy understanding scientific arguments. they will emprison science with law, which is something fixed and unsuited for the fluid technological and scientific solutions" (9) Despair, hopelessness, and inertia regarding (solving) climate change:</p> <p>"Volunteering is time consuming and it is very depressing to keep struggling and make no progress. It is hard enough to make ends meet without taking on additional free labor responsibilities."</p>		

Supplementary Table 7. Interrater reliability Kappa per code and type of climate action (advocacy left; legal protest right) for the final coding scheme used.

Theme	Code	Number of participants (proportion, of <i>n</i> = 1,590); Kappa (CI) based on <i>n</i> = 180 (11.3%)	Number of participants (proportion, of <i>n</i> = 2,848); Kappa (CI) based on <i>n</i> = 310 (10.9%)
No barriers/not applicable	No barriers/not applicable	402 (25.3%); K = 0.95 (CI: 0.90 - 1.00)	290 (10.2%); K = 0.85 (CI: 0.75 - 0.95)
Practical factors inhibiting action	Lack of time, energy, work/family commitment	186 (11.7%); K = 0.94 (CI: 0.85 - 1.00)	270 (9.5%); K = 0.80 (CI: 0.69 - 0.92)
Practical factors inhibiting action	Lack of opportunity	98 (6.2%); K = 0.88 (CI: 0.75 - 1.00)	413 (14.5%); K = 0.93 (CI: 0.87 - 0.99)
Practical factors inhibiting action	Lack of skill: Expertise in activism/ organizing, climate, or communication	179 (11.3%); K = 0.85 (CI: 0.72 - 0.98)	9 (0.3%); K = 1.00 (CI: 1.00 - 1.00)
Consequences of action (perceived and experienced) that inhibit action	Risk of arrest and/ or other legal consequences/ protesting illegal	8 (0.5%); K = 1.00 (CI: 1.00 - 1.00)	104 (3.7%); K = 0.73 (CI: 0.50 - 0.96)
Consequences of action (perceived and experienced) that inhibit action	Risk to employment/ reputation	47 (3.0%); K = 0.79 (CI: 0.52 - 1.00)	70 (2.5%); K = 0.73 (CI: 0.50 - 0.96)
Consequences of action (perceived and experienced) that inhibit action	Risk to personal safety and aversion to (online) confrontation	43 (2.7%); K = 0.85 (CI: 0.65 - 1.00)	205 (7.2%); K = 0.80 (CI: 0.69 - 0.92)
Consequences of action (perceived and experienced) that inhibit action	Residency & visa concerns	7 (0.4%); K = NA	46 (1.6%); K = 1.00 (CI: 1.00 - 1.00)
Consequences of action (perceived and experienced) that inhibit action	Unintended adverse effects (including distracting, effects on nature and people, polarization)	24 (1.5%); K = 1.00 (CI: 1.00 - 1.00)	146 (5.1%); K = 0.82 (CI: 0.66 - 0.97)
Doubts about the efficacy of action - Collective or personal	Doubts about efficacy of (participating in) such action (e.g., protests/ advocacy are not effective)	111 (7.0%); K = 0.79 (CI: 0.59 - 0.99)	309 (10.8%); K = 0.83 (CI: 0.74 - 0.93)
Doubts about the efficacy of action - Collective or	Believing they can be more effective in other	64 (4.0%);	263 (9.2%);

Theme	Code	Number of participants (proportion, of <i>n</i> = 1,590); Kappa (CI) based on <i>n</i> = 180 (11.3%)	Number of participants (proportion, of <i>n</i> = 2,848); Kappa (CI) based on <i>n</i> = 310 (10.9%)
personal	role/they see themselves having a different role	K = 0.83 (CI: 0.65 - 1.00)	K = 0.81 (CI: 0.70 - 0.92)
Doubts about the efficacy of action - Collective or personal	Describes other route to change (e.g., worker unions, governments, (tech) solutions, countries)	60 (3.8%); K = 0.79 (CI: 0.52 - 1.00)	211 (7.4%); K = 0.73 (CI : 0.56 - 0.90)
Doubts about the efficacy of action - Collective or personal	Assuming others (e.g., experts, activists) will or should act instead	63 (4.0%); K = 0.79 (CI: 0.59 - 0.99)	27 (0.9%); K = 1.00 (CI: 1.00 - 1.00)
Perceptions of activist strategy and ideology that prevent or reduce activism engagement	Concerns around strategy and/or ideology within/across groups (e.g., disagreement about demands (e.g., proposed solutions)/messages used, distrust of groups and actions)	91 (5.7%); K = 0.83 (CI: 0.59 - 1.00)	277 (9.7%); K = 0.83 (CI: 0.73 - 0.93)
Incompatibility of science and activism	Reflections on the role of a scientist (e.g., concerns about credibility, objectivity, impartiality)	44 (2.8%); K = 0.89 (CI: 0.66 - 1.00)	69 (2.4%); K = 0.77 (CI: 0.55 - 0.99)
Knowledge deficit preventing action	Not knowing where to start or which actions to take, with which groups or the quality of the groups, access to audiences	97 (6.1%); K = 0.89 (CI: 0.76 - 1.00)	109 (3.8%); K = 0.75 (CI: 0.55 - 0.96)
Barriers related to (mental) health and intersectionality	(Mental) health and intersectionality (e.g., equality, diversity, and inclusion)	28 (1.8%); K = 1.00 (CI: 1.00 - 1.00)	120 (4.2%); K = 0.86 (CI: 0.73 - 0.98)
Not identifying with activists	Activist stereotype doesn't include people like them/has a negative view of activists	9 (0.6%); K = 0.80 (CI: 0.41 - 1.00)	97 (3.4%); K = 0.75 (CI: 0.55 - 0.96)
Personal preferences deterring activism	Not being the type of person	80 (5.0%); K = 0.91 (CI: 0.80 - 1.00)	233 (8.2%); K = 0.88 (CI: 0.77 - 0.98)
Miscellaneous	Priorities: (Would) focus on other issues (social justice, hunger, racism, biodiversity)	71 (4.5%); K = 0.79 (CI: 0.56 - 1.00)	58 (2.0%); K = 0.73 (CI: 0.50 - 0.96)

Theme	Code	Number of participants (proportion, of <i>n</i> = 1,590); Kappa (CI) based on <i>n</i> = 180 (11.3%)	Number of participants (proportion, of <i>n</i> = 2,848); Kappa (CI) based on <i>n</i> = 310 (10.9%)
Miscellaneous	Context: Lack of language skills, local/ political contextual knowledge; other issues more pressing (e.g., starvation, democracy)	34 (2.1%); K = 0.85 (CI: 0.57 - 1.00)	45 (1.6%); K = 1.00 (CI: 1.00 - 1.00)
Miscellaneous	Not being motivated/ topic not being a priority	32 (2.0%); K = 0.85 (CI: 0.57 - 1.00)	51 (1.8%); K = 0.79 (CI: 0.61 - 0.97)
Miscellaneous	Other	122 (7.7%); K = 0.75 (CI: 0.59 - .92)	208 (7.3%); K = 0.63 (CI: 0.48 - 0.78)

Supplementary Table 8. Barriers reported by 5% or more of respondents for either advocacy or legal protests coded from open-ended responses of those respondents who had indicated that they are (not) willing to engage or already do or did engage in those actions.

Theme	Code	Frequency, <i>n</i> (%) advocacy			Frequency, <i>n</i> (%) legal protests		
		Not willing to (<i>n</i> = 293)	Willing to (<i>n</i> = 815)	Already do/did (<i>n</i> = 482)	Not willing to (<i>n</i> = 933)	Willing to (<i>n</i> = 1333)	Already do/did (<i>n</i> = 552)
No barriers/ not applicable		26 (8.9%)	179 (22.0%)	197 (40.9%)	57 (5.7%)	95 (7.1%)	138 (26.4%)
Practical factors inhibiting action	Lack of time, energy, work/family commitment	10 (3.4%)	131 (16.1%)	45 (9.3%)	32 (3.2%)	192 (14.4%)	46 (8.8%)
	Lack of opportunity	5 (1.7%)	78 (9.6%)	15 (3.1%)	16 (1.6%)	381 (28.6%)	16 (3.1%)
	Lack of skill	32 (10.9%)	107 (13.1%)	40 (8.3%)	3 (0.3%)	3 (0.2%)	3 (0.6%)
Consequences of action	Risk of arrest and/ or other legal consequences/ protesting illegal	0 (0.0%)	6 (0.7%)	2 (0.4%)	26 (2.6%)	37 (2.8%)	41 (7.9%)
	Risk to employment/ reputation	13 (4.4%)	19 (2.3%)	15 (3.1%)	25 (2.5%)	21 (1.6%)	24 (4.6%)
	Risk to personal safety and aversion to (online) confrontation	4 (1.4%)	17 (2.1%)	22 (4.6%)	63 (6.3%)	42 (3.2%)	100 (19.2%)
	Unintended adverse effects	9 (3.1%)	6 (0.7%)	9 (1.9%)	102 (10.3%)	29 (2.2%)	15 (2.9%)

Theme	Code	Frequency, <i>n</i> (%) advocacy			Frequency, <i>n</i> (%) legal protests		
		Not willing to (<i>n</i> = 293)	Willing to (<i>n</i> = 815)	Already do/did (<i>n</i> = 482)	Not willing to (<i>n</i> = 933)	Willing to (<i>n</i> = 1333)	Already do/did (<i>n</i> = 552)
Doubts about the efficacy of action	Doubts about efficacy of (participating in) such action	24 (8.2%)	54 (6.6%)	33 (6.8%)	148 (14.9%)	106 (8.0%)	55 (10.5%)
	Believing they can be more effective in other role	25 (8.5%)	34 (4.2%)	5 (1.0%)	109 (11.0%)	129 (9.7%)	25 (4.8%)
	Other route to change	25 (8.5%)	28 (3.4%)	7 (1.5%)	150 (15.1%)	49 (3.7%)	12 (2.3%)
	Assuming others will/ should act	23 (7.8%)	38 (4.7%)	2 (0.4%)	14 (1.4%)	11 (0.8%)	2 (0.4%)
Concerns about activist strategy and/ or ideology		26 (8.9%)	35 (4.3%)	30 (6.2%)	148 (14.9%)	84 (6.3%)	45 (8.6%)
Incompatibility science & activism	Reflections on the role of scientists	26 (8.9%)	9 (1.1%)	9 (1.9%)	43 (4.3%)	16 (1.2%)	10 (1.9%)
Knowledge deficit preventing action		2 (0.7%)	67 (8.2%)	28 (5.8%)	3 (0.3%)	93 (7.0%)	13 (2.5%)
(Mental) health and intersectionality		12 (4.1%)	12 (1.5%)	4 (0.8%)	54 (5.4%)	50 (3.8%)	16 (3.1%)
Not identifying with activists		2 (0.7%)	6 (0.7%)	1 (0.2%)	58 (5.8%)	26 (2.0%)	13 (2.5%)

Theme	Code	Frequency, <i>n</i> (%) advocacy			Frequency, <i>n</i> (%) legal protests		
		Not willing to (<i>n</i> = 293)	Willing to (<i>n</i> = 815)	Already do/did (<i>n</i> = 482)	Not willing to (<i>n</i> = 933)	Willing to (<i>n</i> = 1333)	Already do/did (<i>n</i> = 552)
Personal preferences deterring activism	Not being the type of person	33 (11.6%)	43 (5.3%)	3 (0.6%)	134 (13.5%)	91 (6.8%)	8 (1.5%)
Miscellaneous	Priorities - other issues	24 (8.2%)	38 (4.7%)	9 (1.9%)	12 (1.2%)	44 (3.3%)	2 (0.4%)
	Other	22 (7.5%)	49 (6.0%)	51 (10.6%)	95 (9.6%)	76 (5.7%)	37 (7.1%)

Supplementary Table 9. Shows out-of-sample classification performance metrics across models and outcomes.

Type	Outcome	n_{train}	n_{test}	Precision	Recall	Specificity	F1	Accuracy	Base rate
Advocacy	Willing vs. not willing	6,429	1,607	.76	.63	.90	.69	.81	.82
	Already do vs. willing	5,210	1,303	.87	.95	.35	.91	.84	.66
Protest	Willing vs. not willing	5,227	1,307	.82	.88	.69	.85	.81	.62
	Already do vs. willing	5,646	1,411	.74	.69	.88	.71	.82	.67
Civil disobedience	Willing vs. not willing	4,025	1,006	.71	.71	.71	.71	.71	.50
	Already do vs. willing	6,656	1,664	.68	.07	.99	.13	.83	.82

Note. The base rate refers to the outcome that has the higher relative frequency. n_{train} and n_{test} indicate the sample sizes of the training and test set, respectively.