Article

Emotional responses to state repression predict collective climate action intentions

Sunniva Davies-Rommetveit [1] ✉, **Jenny Douch** [2], **Peter Gardner** [3], **Anna Aretha Sach** [4], **Laura Thomas-Walters**[5] **& Nicole Tausch**[1]

As climate activism has expanded, governments have increasingly repressed disruptive but non-violent protests. Yet evidence remains mixed regarding whether repression inhibits or galvanizes activism. In this study, we examine how anticipated and experienced repression predict intentions to engage in normative (rule-conforming) and non-normative (rule-violating) collective climate action, over and above past activism and core psychological antecedents. Survey data from Extinction Rebellion UK mailing list subscribers ($n = 1,375$) showed that experienced repression positively predicted non-normative action intentions and showed a positive indirect predictive effect on non-normative action via reduced fear. Although anticipated repression was not directly associated with either action type, it had positive indirect predictive effects on both action types via anger/outrage and on non-normative action via contempt. Conversely, it also had a negative indirect predictive effect on non-normative action through heightened fear. These findings predominantly reflect a galvanizing effect of repression on disruptive collective climate action among committed activists.

Recent years have seen a global increase in the criminalization of peaceful protest[1], leading the United Nations to call on governments to protect citizens' rights to dissent[2]. Repression, defined as measures that 'prevent, control, or constrain non-institutional collective action'[3], is particularly notable in the case of climate activism[4–6]. Faced with insufficient government action to avert climate breakdown[7–10], climate activists have escalated their use of disruptive protest tactics[11–13] (for example, roadblocks). In response, the authorities have intensified restrictions on protest by selectively enforcing counter-terrorism laws[13] and through new legislation, such as the 2023 Public Order Act in England and Wales[13,14]. Consequently, climate activists in countries with historically open civil societies now face increased personal risks while protesting, including surveillance, arrest, fines and lengthy prison sentences[13]. We investigate the drivers of participation in collective climate action, despite the risk of such punitive consequences, among climate activists involved in the protest group Extinction Rebellion.

Collective action involves individuals acting collectively to achieve common interests[15,16]. Conflicting evidence exists on whether and how repression (dis)inhibits collective action intentions[1]. Some studies find that repression deters engagement[17,18], while others report evidence consistent with a galvanizing effect[19–21]. There has, moreover, been little differentiation between the psychological effects of anticipated repression, that is, the belief that activists may encounter repression, and actual lived experiences of repression in the form of arrests, fines, surveillance or jail time. In situ research on crowd dynamics indicates that harsh treatment of protesters by the police can intensify protest behaviour through the delegitimization of the authorities and collective empowerment of the crowd[22]. Research examining individuals' action motivations has similarly found that direct experiences of police violence increased protest intentions in general[23], willingness to make sacrifices for the movement[23] and intentions to engage in disruptive collective actions specifically[21]. The latter finding was explained by reduced fear about protesting[21]. The potential of

[1]School of Psychology and Neuroscience, University of St Andrews, St Andrews, UK. [2]Independent Researcher, Zaragoza, Spain. [3]Department of Sociology, University of York, York, UK. [4]Department of Social Psychology, Faculty of Social and Behavioural Sciences, University of Amsterdam, University of Amsterdam, Amsterdam, the Netherlands. [5]ProVeg International, London, UK. ✉e-mail: sd458@st-andrews.ac.uk
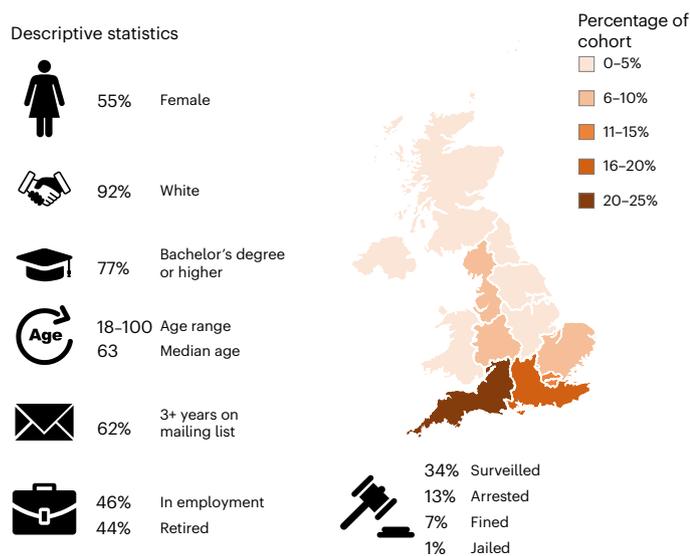
Fig. 1 | **Demographic overview of the sample.** Detailed information on the sample (*n* = 1,375 participants) is presented in Supplementary Information. Map created with Flourish (https://flourish.studio). Credit: icons, UXWing (https://uxwing.com).

experienced repression to legitimize disruptive action is documented anecdotally in the climate activist context[12,13], where the recent wave of protest criminalization has spurred calls to 'double down' on disruptive tactics and to the emergence of groups engaging in covert actions to directly disrupt oil and gas companies[12,24]. Similarly, recent qualitative evidence suggests that perceived police repression is used by activists to justify participation in law-breaking[25,26].

The social identity model of collective action (SIMCA)[27] integrates three key psychological drivers of engagement. These are subjective grievances that give rise to a sense of injustice[27–29], identification with an aggrieved or politicized group (that is, a group that is committed to effect social change)[30–34] and a sense of efficacy[27]. Recent contributions have extended the efficacy concept to encompass a broader range of considerations—distinguishing political efficacy (the belief that one's group can achieve its political aims)[20] from identity consolidation efficacy[35] the belief that protest strengthens the movement) and participative efficacy[36] (the belief that one's own participation makes a meaningful contribution to the group)[35,36].

While SIMCA aims to account for collective action intentions generally, two main forms of collective action have since been distinguished. Normative collective actions[15,37] are conceptualized as actions that lie within the societal framework (for example, ratified protest marches or petition signing). Non-normative actions[21,37–39] deliberately break the rules of the established system and violate societal norms (for example, roadblocks, public building occupations or superglue lock-ons)[33]. The psychological drivers of non-normative forms of collective action are much less researched[27], particularly for climate activism[26,33,40–42] (for exceptions, see refs. [25,43,44]). As a result, our understanding remains limited on whether existing models of collective action apply to more disruptive, non-normative acts and how government repression might escalate different types of protest actions.

Research also highlights the importance of justice-related emotions such as anger or outrage to enhance action intentions[37,39,45] and fear, as an action-inhibiting emotion[40,46], to reduce action intentions[19,21,47,48]. Although both normative and non-normative actions frequently co-occur and overlap in their psychological drivers[49], evidence indicates that non-normative actions are more strongly predicted by feelings of contempt than anger[37,50]. Like anger, contempt is considered an 'other-condemning' emotion, but has distinct

characteristics[37,50] and promotes disengagement from its object[50,51]. When felt towards political elites, contempt can reduce the need to adhere to social norms and enable actions that challenge the established order, including non-lawful and even violent action (note that we do not include violent non-normative action tendencies in our analysis, as these are less relevant in the current climate activist context; see also refs. [37,38,52]).

Non-normative actions are more likely to occur as the perceived efficacy of conventional action drops[37,53,54]. The so-called nothing-to-lose hypothesis states that a sense of low political efficacy and despair about the prospect for change incites riskier, non-normative action (see refs. [37,53] for evidence, but also see ref. [21] for inconsistent findings). Limited research exists, however, on how participative efficacy and identity consolidation efficacy are linked to future non-normative collective action intentions, and whether low levels of these forms of efficacy might also create the conditions that promote non-normative action intentions.

We investigate psychological predictors of intentions to engage in normative and non-normative collective climate action using data from a recent survey of Extinction Rebellion activists—a rarely accessed sample from a prominent climate protest movement in the UK. We invited 160,103 Extinction Rebellion UK mailing list subscribers to participate in a 10-minute survey on climate activism (Methods). In total, 1,662 subscribers entered the survey between 19 December 2024 and 25 January 2025. The final sample size (after exclusion checks) was 1,375 (Fig. 1).

Predictors of normative and non-normative climate action intentions

We used hierarchical multiple regression to examine the incremental predictive value of theoretically distinct groups of variables on collective climate action intentions. Each block was entered on the basis of its conceptual precedence, beginning with past event participation as a predictor of future intentions, and concluding with emotions as the most proximal drivers of action intentions. Model 1 regressed action intentions on past participation. In model 2, we entered the extended SIMCA[27] variables (environmental concern, environmental movement identification, political efficacy, identity consolidation efficacy and participative efficacy). Model 3 added anticipated and experienced repression. Finally, in model 4, we added emotions in response to repression, specifically anger/outrage, contempt and fear (see Table 1 for hierarchical regression results; for an overview of all standardized coefficients in the final model, see Fig. 2).

Although there were no significant direct predictive effects for anticipated repression over and above past participation and SIMCA variables in model 3, experienced repression positively predicted non-normative action intentions (B = 0.33, s.e. = 0.03, P < 0.001, 95% confidence interval (CI) [0.28, 0.39]), consistent with a galvanizing effect. Experienced repression also significantly negatively predicted normative collective climate action intentions (B = −0.05, s.e. = 0.03, P = 0.045, 95% CI [−0.1, −0.001]), however this effect was weak and inconsistent across robustness checks and activist age (Supplementary Information).

Distinct emotions predicted each kind of action tendency in model 4. Anger/outrage was the only significant predictor for normative action intentions (B = 0.13, s.e. = 0.03, P < 0.001, 95% CI [0.07, 0.18]), whereas both anger/outrage (B = 0.08, s.e. = 0.03, P = 0.01, 95% CI [0.02, 0.14]) and contempt (B = 0.08, 0.02, P < 0.001, 95% CI [0.04, 0.12]) positively predicted non-normative action intentions. Fear (B = −0.08, s.e. = 0.02, P < 0.001, 95% *CI* [−0.12, −0.04]) negatively predicted non-normative action intentions.

Emotions as mediators of repression effects

Finally, we tested for indirect effects of anticipated and experienced repression on normative and non-normative climate action intentions

Table 1 | Hierarchical multiple regression predicting normative and non-normative action intentions

Normative actions	Model 1			Model 2			Model 3			Model 4		
Variable	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β
(Constant)	**3.49*****	0.06		**2.04*****	0.23		**1.92*****	0.25		**2.1*****	0.24	
Past event participation	**0.35*****	0.03	0.33	**0.26*****	0.03	0.24	**0.28*****	0.03	0.26	**0.26*****	0.03	0.24
Environmental concern				**0.13****	0.05	0.07	**0.12***	0.05	0.07	0.04	0.05	0.03
Environmental movement ID				**0.08****	0.03	0.08	**0.08****	0.03	0.08	**0.06***	0.03	0.06
Political efficacy				0.05	0.04	0.05	0.05	0.04	0.05	0.06	0.04	0.05
Identity consolidation efficacy				**0.13*****	0.03	0.13	**0.13*****	0.03	0.13	**0.11****	0.03	0.11
Participative efficacy				**0.06***	0.02	0.07	**0.06***	0.02	0.07	**0.06***	0.02	0.07
Anticipated repression							0.04	0.03	0.03	−0.01	0.03	−0.01
Experienced repression							**−0.05***	0.03	−0.06	−0.05	0.03	−0.05
Anger/outrage										**0.13*****	0.03	0.17
Contempt										0.01	0.02	0.01
Fear										0.01	0.02	0.01
R²	0.11			0.16			0.16			0.18		
F	**153.87*****			**41.43*****			**31.83*****			**27.32*****		
Δ*R²*	0.11			0.06			0.004			0.02		
Δ*F*	**153.87*****			**17.04*****			2.72			**12.92*****		
Non-normative actions	Model 1			Model 2			Model 3			Model 4		
Variable	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β	*B*	s.e. (*B*)	β
(Constant)	**1.47*****	0.07		0.48	0.27		**0.54***	0.27		**0.63***	0.27	
Past event participation	**0.46*****	0.03	0.36	**0.37*****	0.04	0.29	**0.23*****	0.04	0.19	**0.23*****	0.04	0.18
Environmental concern				0.04	0.05	0.02	0.03	0.05	0.02	−0.01	0.05	-0.002
Environmental movement ID				**0.1****	0.03	0.09	0.05	0.03	0.04	0.03	0.03	0.03
Political efficacy				0.03	0.04	0.02	0.03	0.04	0.02	0.04	0.04	0.03
Identity consolidation efficacy				0.06	0.04	0.05	**0.1****	0.04	0.09	**0.08***	0.04	0.07
Participative efficacy				**0.12*****	0.03	0.13	**0.1*****	0.03	0.10	**0.1*****	0.03	0.10
Anticipated repression							0.04	0.03	0.03	0.01	0.03	0.01
Experienced repression							**0.33*****	0.03	0.31	**0.33*****	0.03	0.30
Anger/outrage										**0.08***	0.03	0.09
Contempt										**0.08*****	0.02	0.12
Fear										**−0.08*****	0.02	-0.10
R²	0.13			0.16			0.25			0.27		
F	**198.68*****			**43.49*****			**53.7*****			**44.38*****		
Δ*R²*	0.13			0.04			0.08			0.03		
Δ*F*	**198.68*****			**10.93*****			**70.36*****			**14.88*****		

Unstandardized regression coefficients (*B*) with standard errors (s.e.) and standardized coefficients (β) from hierarchical regressions predicting normative collective action tendencies (upper panel) and non-normative collective action tendencies (lower panel). Model 1 includes past event participation. Model 2 adds environmental concern, environmental movement identification, political efficacy, identity consolidation efficacy and participative efficacy. Model 3 further adds anticipated repression and experienced repression. Model 4 additionally includes anger/outrage, contempt and fear. Asterisks denote statistical significance (*$P<0.05$, **$P<0.01$, ***$P<0.001$; two-tailed tests). Bold denotes significance. *R²* indicates explained variance for each model; Δ*R²* indicates additional variance explained at each step. *F* statistics indicate overall model significance and Δ*F* indicates change in model fit across steps. Sample sizes were N=1,301 for normative action tendencies and N=1,300 for non-normative action tendencies. Degrees of freedom for *F*-tests for normative action tendencies are (1, 1,299) for Model 1; (6, 1,294) for Model 2; (8, 1,292) for Model 3; and (11, 1,289) for Model 4. Degrees of freedom for *F*-tests for non-normative action are (1, 1,298) for Model 1; (6, 1,293) for Model 2; (8, 1,291) for Model 3; and (11, 1,288) for Model 4.

through emotions. We ran separate mediation models, first assessing the indirect effects of anticipated repression on normative and non-normative action intentions (Fig. 3), respectively, and then repeating these analyses for experienced repression (Fig. 4). The analyses were conducted controlling for all other predictors.

There was only one significant indirect effect of anticipated repression on normative collective climate action intentions via anger/ outrage [0.02, 0.06] (Fig. 3 and Supplementary Table 7). Positive indirect effects also existed for anticipated repression on non-normative collective climate action intentions (Supplementary Table 8) via anger/ outrage [0.004, 0.04] and contempt [0.01, 0.04], as well as a significant negative indirect effect via fear [−0.04, −0.01].

There were no significant indirect effects from experienced repression on normative collective climate action intentions. However, a
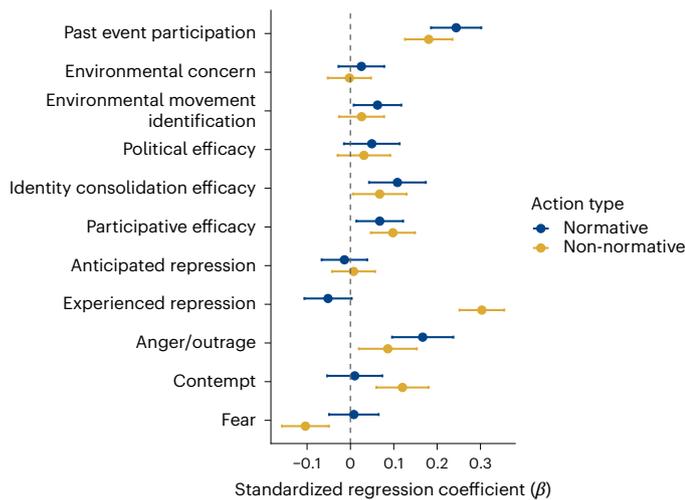
Fig. 2 | Predictors of normative and non-normative collective climate action intentions. Forest plot showing standardized regression coefficients (circles) and 95% CIs (error bars) from model 4 of a hierarchical multiple regression predicting normative (blue) and non-normative (yellow) collective climate action intentions. Model 4 includes all predictors entered simultaneously. Coefficients represent standardized effects. Sample sizes were $n = 1,301$ for normative action tendencies and $n = 1,300$ for non-normative action tendencies.

significant positive indirect effect was found for non-normative action intentions via fear [0.001, 0.02], (Fig. 4 and Supplementary Tables 9 and 10).

Discussion

In a sample of 1,375 climate activists subscribed to the Extinction Rebellion UK email list, this research examined how both anticipating and directly experiencing protest repression predicts future normative and non-normative collective action intentions. Results indicated different emotional effects and distinct efficacy beliefs for normative and non-normative collective action intentions, highlighting the importance of differentiating between action types, as well as between anticipated and experienced repression, in the climate activist context. We found that while anticipated repression had no direct effect on either kind of collective action, lived experiences of repression positively predicted non-normative action intentions. Our analysis of emotional responses to repression demonstrated positive indirect effects of anticipated repression through anger/outrage for both types of collective action and through contempt for non-normative action, as well as a negative indirect effect on non-normative action intentions via fear. Results for experienced repression demonstrated both a direct and indirect (via fear) positive predictive effect on non-normative action intentions.

These findings have three core theoretical and practical implications. First, our findings support the influential role of emotions both in predicting different action intentions and as mediators of repression effects on future climate action intentions. Our findings, consistent with the concurrent presence of a chilling (through increased fear) and galvanizing (through increased anger/outrage and contempt) effect from anticipated repression to non-normative climate activism, are in line with recent—seemingly juxtapositional—developments in the UK climate movement. On the one hand, 2022 saw Extinction Rebellion UK pausing actions disruptive to the public[55] and the disbanding of disruptive climate movement Just Stop Oil[56]. On the other, activists are indicating defiance[12], with some turning to secretive, covert forms of disruptive activism to avoid punitive consequences[11,24]. As our findings suggest, a turn towards non-normative climate actions may be particularly likely for those with direct experiences of repression and may in part be explained by reduced fear about negative repercussions.

Together, the different emotional and psychological mechanisms found from anticipated and experienced repression to normative and non-normative climate action intentions disentangle the conflicting evidence of repression on collective action intentions[1,17,19,20,57], adding important nuance to existing research.

Second, our findings underline the importance of distinguishing between anticipated and direct experiences of repression. There are several sources for anticipating repression: sociostructural factors (for example, draconian legislation and media coverage) to group- and individual-level experiences (for example, speaking with fellow activists and seeing activist arrests)[1]. Separate to this, direct experiences with repression reflect a specific, individual-level experience, with increased lived experiences of repression—as has been seen among UK climate activists in recent years[13,58]—directly and positively predicting non-normative collective climate action intentions. This was not the case for anticipated repression, which did not directly predict either type of action intention. Our findings add to research that violent police encounters can empower crowds to further action[22], along with recent evidence consistent with the interpretation that experienced repression can galvanize protesters to engage in non-normative action[21,59].

Third, as well as highlighting the importance of politicized identification as a positive predictor for both kinds of action intentions, our findings highlight the need to differentiate between various forms of efficacy (namely, political, identity consolidation and participative[17,21,22]) and collective action types. For example, participants higher in identity consolidation efficacy appeared to be drawn to low-risk, normative climate actions with a low barrier to entry, whereas those higher in participative efficacy might be more likely to engage in non-normative collective forms of action. The fact that no evidence was found for political efficacy predicting action intentions is inconsistent with models of collective action (for example, SIMCA[27,28]), but replicates recent findings from collective action research in non-democratic, highly repressive contexts[19,20]. This finding suggests that, for activists faced with increasingly severe protest restrictions[13,14] and for whom palpable political victories have been scarce[13,58,60], political efficacy may not play a role in motivating collective action[1]. Instead, and under these circumstances, individuals' beliefs around the capacity of a movement to attract other people to its cause, or around the importance
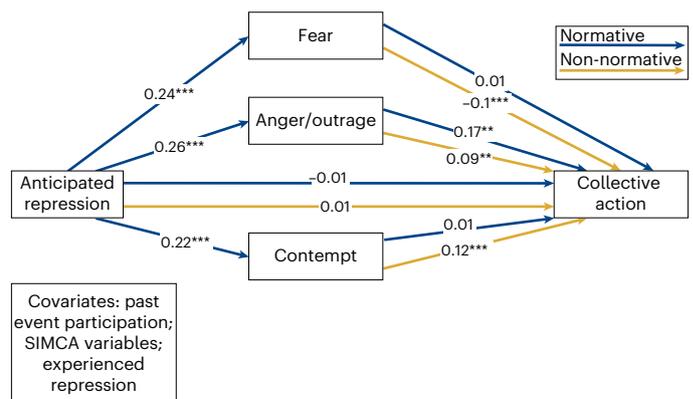

Fig. 3 | Emotional mediators of anticipated repression–action intention relationships. Path diagram showing standardized regression coefficients from a mediation model examining anticipated repression as a predictor of normative (blue paths) and non-normative (yellow paths) collective climate action tendencies via fear, anger/outrage and contempt. Analyses were conducted using PROCESS with 5,000 bootstrap resamples. Asterisks denote statistical significance (*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$; two-tailed tests). Covariates were past event participation, environmental concern, environmental movement identification, political efficacy, identity consolidation efficacy, participative efficacy and experienced repression. Sample sizes were $n = 1,301$ for normative action tendencies and $n = 1,300$ for non-normative action.
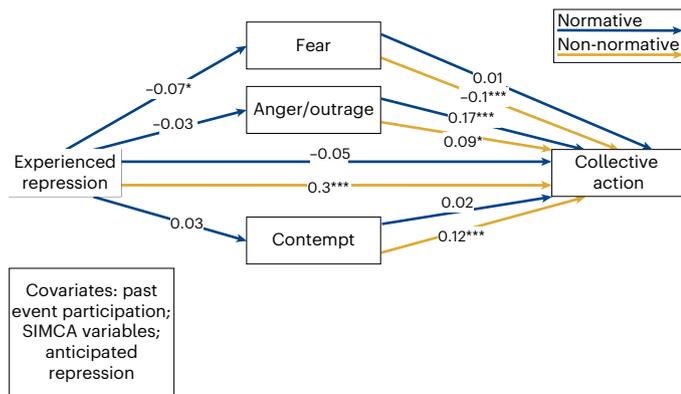
Fig. 4 | Emotional mediators of experienced repression–action intention relationships. Path diagram showing standardized regression coefficients from a mediation model examining experienced repression as a predictor of normative (blue paths) and non-normative (yellow paths) collective climate action tendencies via fear, anger/outrage and contempt. Analyses were conducted using PROCESS with 5,000 bootstrap resamples. Asterisks denote statistical significance (*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$; two-tailed tests). Covariates were past event participation, environmental concern, environmental movement identification, political efficacy, identity consolidation efficacy, participative efficacy and anticipated repression. Sample sizes were $n = 1,301$ for normative action tendencies and $n = 1,300$ for non-normative action.

of their own contribution to a movement, might be more relevant in motivating participation.

The UK has increasingly penalized climate activism, with 17% of all protests between 2019 and 2024 resulting in arrests compared with the international average of 6.3% (ref. 13). This culminated in the 2023 introduction of legislation specifically aimed at quashing disruptive climate tactics[14], with similar anti-protest laws introduced, or existing legislation interpreted selectively, in numerous other Western democracies[4,13]. Our results suggest that, contrary to policy-makers' aims of maintaining public order with new legislation limiting the right to protest[14,61], such increased criminalization may create circumstances leading to more extreme actions, with the galvanizing emotional responses to such action potentially outweighing any deterrent effects among committed activists. Given that disruptive activism has been found to polarize those uninvolved in the protest movement in both climate[62] and other[63] activist contexts, this assumption by policy-makers might inadvertently contribute towards the use of more disruptive tactics by activists, and thus to increasingly polarized views on the contested[64] issue[62,63,65]. In the case of the climate crisis, this is especially problematic, given that urgent and united efforts are needed to reverse the currently worsening[7,66,67] impacts of the climate crisis. Our findings are similarly relevant to the efforts of climate protest groups to increase activist recruitment and engagement. For example, such groups could highlight the ability and potential of the movement to mobilize and consolidate, as well as the importance of individual participation in climate activist events, instead of solely focussing on the capacity and ability of a group to effect political change. Climate protest movements could also explicitly consider how to allay fear among members, given its substantial potential to demobilize activists.

Several limitations should, nonetheless, be addressed in future research. First, the cross-sectional nature of our study design precludes any causal interpretations. For example, non-normative action intentions may lead people to expressing heightened threat from repression and describing the authorities as contempt-worthy, to justify engagement in such actions[26]. Future research should, therefore, expand the current work through longitudinal designs. Second, although intentions are robust predictors of behaviour[68] and assessing them remains a valid and widely used approach, we acknowledge that protest intentions is not a substitute for behavioural observation, which could

be addressed in future studies. Third, we did not examine violent collective climate action intentions in this study, as violence has not been prevalent in contemporary climate movements in the UK. Nonetheless, future research might consider violent climate action, given historical precedents within parts of the climate protest movement. For example, the Earth Liberation Front's activities in the mid-1990s through early 2000[69] demonstrate that more confrontational or violent tactics can surface, especially if interactions between protesters and authorities become increasingly polarized in response to repression. This refinement would also clarify whether increases in both anticipated and direct experiences with repression might lead to more covert disruptive actions over time (for example, cutting wires to fossil fuel companies).

Finally, our results might also underestimate the psychological repercussions (both chilling and galvanizing) of anticipated and experienced repression, as our sample consisted of older, higher-paid, white activists, many of whom were already retired. People of colour are more likely to experience unfair encounters with law enforcement[70], while financial stability might be protective of, for example, logistical considerations such as making bail. Our sample also did not include activists who unsubscribed from the mailing list, perhaps out of fear about increasingly draconian UK protest laws. Furthermore, although respondents to our survey reflected previously reported demographics of Extinction Rebellion UK activists with respect to gender, education levels, area of residence and ethnicity[71,72] (Supplementary Information), our sample was notably older than in situ samples collected during Extinction Rebellion UK protests. To assess whether this age difference mattered to results, we explored whether the associations between repression and action intentions held among younger and older activists. This analysis revealed a meaningful divergence: although the positive association between experienced repression and non-normative climate action intentions—consistent with a galvanizing effect—remained stable across our sample, lived experiences of repression were significantly negatively associated with normative collective climate action intentions among younger activists only. There are several reasons for this unexpected, initial finding. First, younger activists may perceive greater reputational and professional risks associated with engagement in visible and sustained normative actions, whereas older activists may feel they have comparatively 'less to lose' in terms of employment security, social status or financial stability. Alternatively, a difference may exist on how experiences of repression shape societal beliefs: younger activists may interpret experiences of repression as being symbolic of a punitive state, reducing trust in formal channels for protest. Older activists, potentially having engaged in normative action in the past, may interpret experiences of repression as part of a pattern of political struggle, thereby making these actions less threatening.

This distinction adds an important layer of nuance to our findings by suggesting that the motivational consequences of repression may be shaped not only by its form and intensity but also by activists' life stage and vulnerability to its potential costs. These unexpected initial findings need to be replicated in future work, which may also more directly explore when and why different segments of protest movements are galvanized or deterred by protest repression. We also recommend that future research replicates our findings with activist samples from different demographics and countries. Insights into these questions can inform public discourses, policy-makers and social movements, highlighting the potential for protest repression to deter, transform or stimulate civic engagement and contributing to debates around the vital right to protest in democratic societies.

Online content

Any methods, additional references, Nature Portfolio reporting summaries, source data, extended data, supplementary information, acknowledgements, peer review information; details of author contributions and competing interests; and statements of data and code availability are available at https://doi.org/10.1038/s41558-026-02570-8.

References

1. Ayanian, A. H. et al. Collective action under repressive conditions: integration of individual, group, and structural level research, recommendations, and reflections. *Soc. Issues Policy Rev.* **19**, e70000 (2025).

2. *Rise in Impunity Worldwide 'Politically Indefensible and Morally Intolerable', Secretary-General Says as General Assembly Begins Annual High-Level Debate* (United Nations, 2024); https://press.un.org/en/2024/ga12633.doc.htm

3. Earl, J. Political repression: iron fists, velvet gloves, and diffuse control. *Annu. Rev. Sociol.* **37**, 261–284 (2011).

4. Laville, S. European nations must end repression of peaceful climate protest, says UN expert. *Guardian* https://www.theguardian.com/environment/2024/feb/28/european-nations-must-end-repression-of-peaceful-climate-protest-says-un-expert (2024).

5. Cooban, A. UK police 'got it wrong' by arresting journalists covering climate protests. *CNN* https://edition.cnn.com/2022/11/10/media/uk-journalist-arrests-climate-protest/index.html (2022).

6. Gulliver, R. E., Banks, R., Fielding, K. S. & Louis, W. R. The criminalization of climate change protest. *Contention* **11**, 24–54 (2023).

7. Armstrong McKay, D. I. et al. Exceeding 1.5 °C global warming could trigger multiple climate tipping points. *Science* **377**, 944–945 (2022).

8. *Global Temperatures: 2023 Warmest Year on Record, Close to 1.5 °C Above Pre-industrial Level* (Copernicus, 2024); https://climate.copernicus.eu/global-climate-highlights-2023

9. Tranter, B. Political divisions over climate change and environmental issues in Australia. *Environ. Politics* **20**, 78–96 (2011).

10. Marshall, G. *Don't Even Think About it: Why Our Brains are Wired to Ignore Climate Change* (Bloomsbury, 2015).

11. Berglund, O. & Schmidt, D. *Extinction Rebellion and Climate Change Activism: Breaking the Law to Change the World* (Springer, 2020).

12. Rumbelow, I. New measures to silence climate activists? They'll only spur us on. *Guardian* https://www.theguardian.com/commentisfree/2023/jan/16/measures-climate-activists-police-protests-just-stop-oil (2023).

13. Berglund, O., Brotto, T. F., Pantazis, C., Rossdale, C. & Cavalcanti, R. P. *Criminalisation and Repression of Climate and Environmental Protests* (Univ. Bristol, 2024).

14. *Public Order Act* (UK Parliament, 2022); https://bills.parliament.uk/bills/3153

15. Wright, S. C., Taylor, D. M. & Moghaddam, F. M. Responding to membership in a disadvantaged group: from acceptance to collective protest. *J. Pers. Soc. Psychol.* **58**, 994–1003 (1990).

16. Louis, W. et al. The volatility of collective action: theoretical analysis and empirical data. *Polit. Psychol.* **41**, 35–74 (2020).

17. Honari, A. From 'the effect of repression' toward 'the response to repression'. *Curr. Sociol.* **66**, 950–973 (2018).

18. Uysal, M. S., Vestergren, S., Varela, M. & Lindner, C. "System change, not climate change": effective environmental policies and state repression moderate the relationship between psychological predictors and environmental collective action. *Global Environ. Psychol.* **2**, https://doi.org/10.5964/gep.11259 (2024).

19. Ayanian, A. H. & Tausch, N. How risk perception shapes collective action intentions in repressive contexts: a study of Egyptian activists during the 2013 post-coup uprising. *British J. Soc. Psychol.* **55**, 700–721 (2016).

20. Ayanian, A. H. et al. Resistance in repressive contexts: a comprehensive test of psychological predictors. *J. Pers. Soc. Psychol.* **120**, 912–939 (2021).

21. Li, M. et al. Understanding non-normative civil resistance under repression: evidence from Hong Kong and Chile. *Polit. Psychol.* **45**, 493–515 (2024).

22. Drury, J. & Reicher, S. Collective psychological empowerment as a model of social change: researching crowds and power. *J. Soc. Issues* **65**, 707–725 (2009).

23. Adam-Troian, J., Çelebi, E. & Mahfud, Y. Return of the repressed: exposure to police violence increases protest and self-sacrifice intentions for the Yellow Vests. *Group Process. Intergr. Relat.* **23**, 1171–1186 (2020).

24. Gayle, D. 'A new phase': why climate activists are turning to sabotage rather than protest. *Guardian* https://www.theguardian.com/environment/2025/mar/08/a-new-phase-why-climate-activists-are-turning-to-sabotage-instead-of-protest (2025).

25. Jansma, A., Van den Bos, K. & de Graaf, B. A. How climate protesters perceive injustice and justify breaking the law: qualitative interviews with Extinction Rebellion. *Glob. Environ. Psychol.* **2**, e11089 (2024).

26. Ogunbode, C. A. et al. Climate anxiety, wellbeing and pro-environmental action: correlates of negative emotional responses to climate change in 32 countries. *J. Environ. Psychol.* **84**, 101887 (2022).

27. Van Zomeren, M., Postmes, T. & Spears, R. Toward an integrative social identity model of collective action: a quantitative research synthesis of three socio-psychological perspectives. *Psychol. Bull.* **134**, 504–535 (2008).

28. Agostini, M. & van Zomeren, M. Toward a comprehensive and potentially cross-cultural model of why people engage in collective action: a quantitative research synthesis of four motivations and structural constraints. *Psychol. Bull.* **147**, 667–700 (2021).

29. Ogunbode, C. A. et al. Climate justice beliefs related to climate action and policy support around the world. *Nat. Clim. Change* **14**, 1144–1150 (2024).

30. Hogg, M. A., Abrams, D. & Brewer, M. B. Social identity: the role of self in group processes and intergroup relations. *Group Process. Intergr. Relat.* **20**, 570–581 (2017).

31. Reicher, S., Spears, R. & Haslam, S. A. in *The Sage Handbook of Identities* (eds Wetherell, M. & Mohanty, C. T.) 45–62 (Sage, 2010).

32. Simon, B. & Klandermans, B. Politicized collective identity: a social psychological analysis. *Am. Psychol.* **56**, 319–331 (2001).

33. Furlong, C. & Vignoles, V. L. Social identification in collective climate activism: predicting participation in the environmental movement, Extinction Rebellion. *Identity* **21**, 20–35 (2021).

34. Hornsey, M. J., Harris, E. A., Bain, P. G. & Fielding, K. S. Meta-analyses of the determinants and outcomes of belief in climate change. *Nat. Clim. Change* **6**, 622–626 (2016).

35. Saab, R., Tausch, N., Spears, R. & Cheung, W. Y. Acting in solidarity: testing an extended dual pathway model of collective action by bystander group members. *Br. J. Soc. Psychol.* **54**, 539–560 (2015).

36. Van Zomeren, M., Saguy, T. & Schellhaas, F. M. Believing in 'making a difference' to collective efforts: participative efficacy beliefs as a unique predictor of collective action. *Group Process. Intergr. Relat.* **16**, 618–634 (2013).

37. Tausch, N. et al. Explaining radical group behavior: developing emotion and efficacy routes to normative and nonnormative collective action. *J. Pers. Soc. Psychol.* **101**, 129–148 (2011).

38. Becker, J. C. & Tausch, N. in *European Review of Social Psychology* Vol. 26 (eds Hewstone, M. & Manstead, A.) 43–92 (Routledge, 2016).

39. Hatibovic, F. et al. The effects of emotions on the disposition to normative and non-normative political action in the context of the Chilean post-social outburst. *Front. Psychol.* **14**, 1154501 (2023).

40. Kleres, J. & Wettergren, Å. Fear, hope, anger, and guilt in climate activism. *Soc. Move. Stud.* **16**, 507–519 (2017).

41. Fritsche, I. & Masson, T. Collective climate action: when do people turn into collective environmental agents?. *Curr. Opin. Psychol.* **42**, 114–119 (2021).

42. Andre, P., Boneva, T., Chopra, F. & Falk, A. Globally representative evidence on the actual and perceived support for climate action. *Nat. Clim. Change* **14**, 253–259 (2024).

43. Hess, F. M., Masson, T. & Fritsche, I. When will we join the road blockade? (Non) conformity to radical climate protest norms under salient threat to personal control. *Motiv. Sci.* https://doi.org/10.1037/mot0000368 (2024).

44. Jansma, A., Kruglanski, A. W., van den Bos, K., de Graaf, B. A. & Riordan, O. Protecting the Earth radically: perceiving police injustice activates climate protesters' need for significance. *J. Environ. Psychol.* **103**, 102578 (2025).

45. Shuman, E., Cohen-Chen, S., Hirsch-Hoefler, S. & Halperin, E. Explaining normative versus nonnormative action: the role of implicit theories. *Polit. Psychol.* **37**, 835–852 (2016).

46. Miller, D. A., Cronin, T., Garcia, A. L. & Branscombe, N. R. The relative impact of anger and efficacy on collective action is affected by feelings of fear. *Group Process. Intergr. Relat.* **12**, 445–462 (2009).

47. Siegel, D. A. When does repression work? Collective action in social networks. *J. Polit.* **73**, 993–1010 (2011).

48. Adra, A., Harb, C., Li, M. & Baumert, A. Predicting collective action tendencies among Filipina domestic workers in Lebanon: integrating the social identity model of collective action and the role of fear. *Group Process. Intergr. Relat.* **23**, 967–978 (2020).

49. Uysal, M. S., Saavedra, P. & Drury, J. Beyond normative and non-normative: A systematic review on predictors of confrontational collective action. *Br. J. Soc. Psychol.* **63**, 1385–1409 (2024).

50. Fischer, A. H. & Roseman, I. J. Beat them or ban them: the characteristics and social functions of anger and contempt. *J. Pers. Soc. Psychol.* **93**, 103–115 (2007).

51. Haidt, J. in *Handbook of Affective Sciences* (eds Davidson, J. et al.) 852–870 (Oxford Univ. Press, 2003).

52. Travaglino, G. A. & Moon, C. Power distance orientation as an antecedent of individuals' intentions to engage in radical political action. *Group Process. Intergr. Relat.* **23**, 1283–1308 (2020).

53. Saab, R., Spears, R., Tausch, N. & Sasse, J. Predicting aggressive collective action based on the efficacy of peaceful and aggressive actions. *Eur. J. Soc. Psychol.* **46**, 529–543 (2016).

54. Thomas, E. F. & Louis, W. R. When will collective action be effective? Violent and non-violent protests differentially influence perceptions of legitimacy and efficacy among sympathizers. *Pers. Soc. Psychol. Bull.* **40**, 263–276 (2014).

55. *WE QUIT* (Extinction Rebellion, 2022); https://extinctionrebellion.uk/2022/12/31/we-quit/

56. Rowlatt, J. How Just Stop Oil was policed to extinction. *BBC* https://www.bbc.co.uk/news/articles/cz6denxzweeo (2025).

57. Earl, J. & Soule, S. A. in *Research in Social Movements, Conflicts and Change* (ed. Leitz, L.) 75–113 (Emerald Group, 2010).

58. Gayle, D. Britain leads the world in cracking down on climate activism. *Guardian* https://www.theguardian.com/environment/2024/dec/11/britain-leads-the-world-in-cracking-down-on-climate-activism-study-finds (2024).

59. Zúñiga, C., Asún, R. & Louis, W. Normative and non-normative collective action facing repression in a democratic context: a mixed study in a Chilean Social Movement. *J. Soc. Polit. Psychol.* **11**, 362–382 (2023).

60. Dablander, F. et al. Understanding and accelerating collective climate action. *Zenodo* https://doi.org/10.5281/zenodo.17583132 (2025).

61. Gayle, D. Peers called on to kill public order bill targeting climate activists. *Guardian* https://www.theguardian.com/politics/2022/nov/01/peers-called-on-to-kill-public-order-bill-targeting-climate-activists (2022).

62. Nylund, J. L., Thai, M. & Hornsey, M. J. The climate activist's dilemma: extreme protests reduce movement support but raise climate concern and intentions. *J. Environ. Psychol.* **106**, 102682 (2025).

63. Feinberg, M., Willer, R. & Kovacheff, C. The activist's dilemma: extreme protest actions reduce popular support for social movements. *J. Pers. Soc. Psychol.* **119**, 1086–1111 (2020).

64. Hornsey, M. J., Harris, E. A. & Fielding, K. S. Relationships among conspiratorial beliefs, conservatism and climate scepticism across nations. *Nat. Clim. Change* **8**, 614–620 (2018).

65. Ehret, P. J., Van Boven, L. & Sherman, D. K. Partisan barriers to bipartisanship: understanding climate policy polarization. *Soc. Psychol. Pers. Sci.* **9**, 308–318 (2018).

66. Kirk, A. Visualised: how all of G20 is missing climate goals—but some nations are closer than others. *Guardian* https://www.theguardian.com/environment/2023/dec/07/visualised-how-all-of-g20-is-missing-climate-goals-but-some-nations-are-closer-than-others (2023).

67. O'Neill, B. C. Envisioning a future with climate change. *Nat. Clim. Change* **13**, 874–876 (2023).

68. Sheeran, P. & Webb, T. L. The intention–behavior gap. *Soc. Pers. Psychol. Compass* **10**, 503–518 (2016).

69. Scarce, R. *Eco-warriors: Understanding the Radical Environmental Movement* (Routledge, 2016).

70. Banaji, M. R., Fiske, S. T. & Massey, D. S. Systemic racism: individuals and interactions, institutions and society. *Cogn. Res.* **6**, 82 (2021).

71. Hayes, G., Doherty, B. & Saunders, C. *A New Climate Movement? Extinction Rebellion's Activists in Profile* (Centre for the Understanding of Sustainable Prosperity, 2020).

72. Saunders, C., Doherty, B., Hayes, G., Cammiss, S. & Walker, N. *Who Participated in The Big One? A Profile of Participants in Extinction Rebellion's 2023 Actions* (HASS Cornwall, 2024).

Methods

Sample and procedure

We received ethical approval from the University Teaching and Ethics Committee at the University of St Andrews. Participants were emailed by Extinction Rebellion UK asking them to take part in a 2-min survey. At the end of this, they were invited to complete a separate, anonymous survey, which includes the measures reported here. Before completing the survey, participants were informed about the voluntary nature of their participation and gave their informed consent. We removed the data from 287 participants who completed less than 85% of the survey, did not consent to take part or who failed the attention check, leaving a total sample size of 1,375 participants. Participants took an average of 17 min to complete the survey.

Measures

Only measures that are relevant to the present research are presented here. A complete list of measures for the survey and decisions on scale formation are available in Supplementary Information. All scales, if not indicated otherwise, were measured on a five-point Likert scale.

Demographics and past event participation. Participants were asked their age, gender, education level (no formal education, some primary education, some secondary education, completed secondary education vocational qualification, now in college or university, some college or university education, but no degree, Bachelor's degree, Master's degree, Doctorate or other advanced degree), race (Asian/Asian British, Black/African/Caribbean/Black British, White, Mixed/Multiple ethnic groups, Other ethnic group or background), the nation and/or country in the UK where participants lived (South West, South East, Greater London, East of England, West Midlands, East Midlands, Yorkshire and Humber, North West, North East, Scotland, Wales, Northern Ireland, outside the UK), income (£20,000 or less, £20,001–£40,000, £40,001–£60,000, £60,001–£80,000, £80,001–£100,000, more than £100,000) and class (text entry). They were also asked to state how long they had been a subscriber to the Extinction Rebellion UK emailing list (for <1 month, 1–6 months, 6 months to 1 year, 1–2 years, for >3 years). For an overview of the sample demographics, see Fig. 1. Finally, participants were asked to list the extent to which, on a five-point Likert scale, they had been involved in activities with Extinction Rebellion UK (attended events, for example a protest, organized events, for example helped to organize a protest or local group meetings, engaged in outreach, for example gave a talk, manned a stall or distributed pamphlets, back-office volunteering, for example rebel ringing, administration or using skill sets, or online activism, for example sharing petitions or social media posts and raising or donating money).

Environmental concern. We adapted the degree to which participants felt concern about climate change from former research[26], on a five-point Likert scale based on 'How worried are you about the following issue?' (the climate crisis and biodiversity loss) $r = 0.56$, $P < 0.001$.

Environmental movement identification. Participants were asked the extent to which they socially identified with the climate protest movement, on a five-point Likert scale based on 'To what extent do you agree or disagree with the following statements?' (I see myself as a member of the climate protest movement; I identify with members of the climate protest movement), $r = 0.57$, $P < 0.001$, adapted from previous research[30].

Political, identity consolidation and participative efficacy. Participants were asked to rate their belief that Extinction Rebellion UK could achieve its political goals (political efficacy[35]) on a five-point Likert scale based on 'To what extent do you think that climate activism in the United Kingdom is effective in achieving the following goals' (increasing government protection for populations vulnerable to the climate crisis, ensuring government action to rapidly reduce CO_2 emissions, increasing regulations of companies that pollute the environment, changing the behaviour of individuals to be more environmentally friendly, improving media coverage of climate activism), $\alpha = 0.79$. We also measured identity consolidation efficacy[35], also on a five-point Likert scale based on 'To what extent do you think that climate activism in the United Kingdom is effective in achieving the following goals' (strengthening solidarity within the climate activist movement, increasing public support for the climate movement), $r = 0.47$, $P < 0.001$. Finally, we measured participative efficacy on a single five-point Likert scale based on 'How much, if at all, do you believe that you, as an individual, can contribute to the climate movement's success?'[27].

Anticipated and experienced repression. We measured anticipated repression[20] for climate protesters with four items on a five-point Likert scale and based on 'How likely do you think it is that climate protesters in the UK will experience the following' (surveillance, arrest, fines, jail time) $\alpha = 0.84$. We also asked participants whether they had ever experienced the following as a climate protester: surveillance, arrest, fines and jail time (yes is 1, no is 0). The responses were summed to create an index of experienced repression.

Anger, fear, outrage and contempt. Participants stated whether they felt angry, outrage, contempt and fear about how the criminal justice system was treating climate protesters in the UK on a five-point Likert scale, adapted from previous research[37,38]. Note that, as a result of high correlations, the items anger and outrage were combined into a single construct ($r = 0.74$, $P < 0.001$).

Normative and non-normative future collective action intentions. Participants indicated their willingness to engage in a range of normative and non-normative collective actions, adapted from previous research[15,37]. Participants indicated how willing they would be to participate in six normative climate actions in the future (a public demonstration, a workplace strike, a protest outside parliament, a company boycott, sign a petition or open letter, a digital action), each measured on a five-point Likert scale. Note that the inter-item correlation revealed that 'a workplace strike' was below the recommended threshold of 0.3 (ref. 73), given this, and the rarity of this action in climate activism[41], we removed this item from the measure, leaving five items ($\alpha = 0.68$). Re-running the analyses with the workplace strike item included in our normative collective action scale yielded no major differences in results. This was with the exception of the small, negative association between experienced repression and normative action tendencies in model 3, which became non-significant; we therefore caution that this small effect is not stable when removing a workplace strike (see Supplementary Information for more information on the removal of the workplace strike item, and for model results when the item is included; Supplementary Tables 11, 12 and 13). All other effects did not change in directionality or significance. There were also no substantive changes to either mediation model.

To assess non-normative collective action intentions, we asked participants seven items on their willingness to take non-normative action in the future[15,37] (a sit-in or lock-on, block streets or public buildings, take action to disrupt major polluters, occupy a threatened natural space, an action involving property damage, an action that is likely to result in arrest, an action that is likely to result in arrest with serious jail time), each measured on a five-point Likert scale ($\alpha = 0.87$).

Analyses

All analyses were performed on SPSS v.29 and using the PROCESS macro v.4.3, models 1 and 4. R v.4.4.1 was used for data visualization. Except for experienced repression (7.3%), all other variables had low proportions of missing data (<3%). Analysis of the items constituting experienced repression revealed that only the surveillance item

had >5% missing data. Little's test[74] revealed that the data were not missing-completely-at-random. Independent samples *t*-tests indicated that missingness was not significantly related to observed variables, implying that the missingness was missing-not-at-random. To assess the impact of the item on results, we ran both hierarchical regression and mediation analyses with and without the item, which resulted in negligible changes to coefficients and standard errors. We thus decided to keep the original four-item measure.

To assess how anticipated repression and the emotions of anger/outrage, contempt and fear build on SIMCA[27] variables for normative and non-normative collective action intentions, we ran a hierarchical multiple regression using the software SPSS v.29 including past event participation as the control, adding environmental concern, environmental movement identification, political, identity consolidation and participative efficacies in model 2, anticipated repression and experienced repression in model 3 and anger/outrage, contempt and fear in model 4. Two variables (environmental concern and environmental movement identification) indicated excess skewness (>2), however residuals did not show violations of assumptions (non-normality, multicollinearity, cases with undue leverage or nonlinearity). We ran hierarchical multiple regression models using bootstrapping (5,000 samples) to compare coefficients and bootstrapped coefficients and standard errors. There were negligible changes to all standard errors and coefficients (<0.03), therefore, we interpreted the non-bootstrapped, standardized coefficients and standard errors throughout. Following this, and based on correlational findings[20] and recent experimental evidence[21,75], we explored indirect emotional effects on normative and non-normative collective actions from anticipated and experienced repression using the PROCESS software macro v.4.3, model 4.

Preregistration and deviations

Overview of hypotheses. We preregistered hypotheses before data collection in December 2024 (https://osf.io/n38r7). Drawing on SIMCA[27] and its recent extensions, we first assessed the extent to which grievances (operationalized as environmental concern), identification with the environmental movement and efficacy beliefs predicted collective action intentions, over and above past involvement in activism. We hypothesized that environmental concern and environmental movement identification positively predict intentions to engage in normative (H1 and H2) and non-normative (H3 and H4) collective action in the future. In line with previous research that has documented opposing effects of efficacy on normative and non-normative collective action[37,53], we expected positive effects of political efficacy, identity consolidation efficacy and participative efficacy on normative action intentions (H5–H7) and negative effects of these variables on non-normative action intentions (H8–H10). Thus, we considered the possibility that a lower perceived effectiveness of climate protest in achieving policy change and group mobilization goals, as well as frustrations involved with a perceived lack of participative efficacy, motivates people to participate in more radical, non-normative collective action.

There are competing, plausible hypotheses for the effects of repression on future action intentions. On the one hand, anticipating punitive consequences for activists, or having experienced such consequences in the past (that is, having experienced surveillance, arrest, fines or jail time because of protest participation), can have a negative, deterrent effect on future normative (H11a and H12a) and non-normative (H13a and H14a) action intentions[19–21,57,75]. On the other, anticipated and experienced repression can also act as grievances[19,20] that increase action commitment and galvanize normative (H11b and H12b) and non-normative (H13b and H14b) action intentions. We further investigated the role of specific emotions in response to government repression. In line with work demonstrating the differential effects of anger and contempt on distinct forms of collective action[37,52],

we expected that anger/outrage about government repression would positively predict normative collective action intentions (H15) and anticipated that contempt would positively predict non-normative collective action intentions (H16)[37,39,52]. We also hypothesized that fear, as an action-inhibiting emotion[46,48], would negatively predict both normative (H17) and non-normative collective action intentions (H18)[20,21,40].

Finally, we explored indirect effects of anticipated and experienced repression via these emotions to disentangle potentially opposing effects of repression. We expected positive indirect effects of anticipated and experienced repression on normative action intentions via anger/outrage (H19 and H20) and on non-normative collective action intentions via contempt (H21 and H22). We further expected negative indirect effects of anticipated and experienced repression on the two types of collective action via fear (H23–H26).

Note that H5–H7 were unintentionally omitted from the preregistration due to an error, but are strongly supported by prior research[20,27,28]. Moreover, since we articulated competing hypotheses in the preregistration for the effects of anticipated repression (H11a/b and H13a/b), we treat these hypotheses as exploratory. The alternative hypotheses for the impact of experienced repression on action tendencies (H12a/b and H14a/b), as well as the indirect effects of repression on action tendencies via emotion (H19–H26) were not preregistered. The test of an additional preregistered hypothesis that experienced repression will increase action intentions particularly for those who are highly identified with the climate protest movement (that is, an interaction between experienced repression and identification in predicting future action intentions) is presented in Supplementary Information. Also note that hypotheses stated in the preregistration were not numbered and that there are slight deviations in the labelling of constructs (see, however, the detailed reporting of measures in the preregistration). Furthermore, for reasons of brevity, for hypotheses that did not differ for normative and non-normative collective action intentions, we simply referred to collective action intentions in the preregistration.

Note that, although we preregistered a two-stage hierarchical regression approach distinguishing core collective action predictors in step 1 and repression-related variables in step 2 while controlling for past participation in each step, we decided to extend the model to four blocks to allow for a more fine-grained and theoretically informative analysis. This decision was driven by the desire to better isolate the unique contribution of each conceptually distinct set of variables and to more clearly interpret their incremental predictive value. Importantly, this extension remains consistent with the rationale underlying the preregistration, while improving the interpretability of the findings. Please see Supplementary Table 1 for a full overview of hypotheses and preregistration status.

Ethics statement

We received ethical approval from the University Teaching and Ethics Committee at the University of St Andrews (first and last authors' institution ethics board). Participants provided informed consent before taking part in the survey.

Reporting summary

Further information on research design is available in the Nature Portfolio Reporting Summary linked to this article.

Data availability

The survey data have been deposited in the Open Science Framework at https://doi.org/10.5281/zenodo.18230025 (ref. 76).

Code availability

The analysis code necessary for the survey data has been deposited in the Open Science Framework at https://doi.org/10.5281/zenodo.18230025 (ref. 76).

References

73. Piedmont, R. L. & Hyland, M. E. Inter-item correlation frequency distribution analysis: a method for evaluating scale dimensionality. *Educ. Psychol. Meas.* **53**, 369–378 (1993).
74. Little, R. J. A test of missing completely at random for multivariate data with missing values. *J. Am. Stat. Assoc.* **83**, 1198–1202 (1988).
75. Dono, M., Ayanian, A. & Tausch, N. A fight against all odds? The causal effects of perceived political efficacy and protest repression on motivation to engage in normative and non-normative climate protest. Preprint at *Research Square* https://doi.org/10.21203/rs.3.rs-4294040/v1 (2024).
76. Davies-Rommetveit, S. et al. Emotional responses to state repression predict collective climate action intentions. *Zenodo* https://doi.org/10.5281/zenodo.18230025 (2026).

Acknowledgements

Author contributions

S.D.-R. contributed to the conceptualization of the study, developed the methodology, collected and conducted the formal analysis of the data, administered the project, drafted the original paper and participated in the writing, reviewing and editing of the paper. N.T. contributed to the conceptualization of the study, developed the methodology, supervised the project, drafted the original paper and participated in the writing, reviewing and editing of the paper. J.D. and A.A.S. contributed to the conceptualization of the study, developed the methodology, collected the data, created the visualizations and participated in writing, reviewing and editing the paper. P.G. and L.T.-W. contributed to the conceptualization of the study, developed the methodology, collected the data and participated in writing, reviewing and editing the paper.

Competing interests

The authors declare no competing interests.

Additional information

Supplementary information The online version contains supplementary material available at https://doi.org/10.1038/s41558-026-02570-8.

Correspondence and requests for materials should be addressed to Sunniva Davies-Rommetveit.

Peer review information *Nature Climate Change* thanks Winnifred Louis and Sara Vestergren for their contribution to the peer review of this work.

Reprints and permissions information is available at www.nature.com/reprints.

nature portfolio

Corresponding author(s): Sunniva Davies-Rommetveit and Nicole Tausch

Last updated by author(s): Jan 4, 2026

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our Editorial Policies and the Editorial Policy Checklist.

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed	
☐	☒	The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement
☐	☒	A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒	The statistical test(s) used AND whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☐	☒	A description of all covariates tested
☐	☒	A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐	☒	A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐	☒	For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted *Give P values as exact values whenever suitable.*
☒	☐	For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☒	☐	For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☐	☒	Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated

Our web collection on statistics for biologists contains articles on many of the points above.

Software and code

Policy information about availability of computer code

Data collection	Qualtrics
Data analysis	SPSS v29, PROCESS macro v4.3, R v4.4.1

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio guidelines for submitting code & software for further information.

Data

Policy information about availability of data

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our policy

All materials, data and pre-registration details necessary to reproduce this survey are available on our Open Science Framework (OSF) project page: https://osf.io/pzjxg/files/osfstorage?view_only=a35cb6df5cc849c5bdf57081c7cd2d20

Research involving human participants, their data, or biological material

Policy information about studies with [human participants or human data](). See also policy information about [sex, gender (identity/presentation), and sexual orientation]() and [race, ethnicity and racism]().

Reporting on sex and gender	Measure: What best describes your gender? Female, Male, Non-binary, Prefer to self-describe, Prefer not to say. Analyses: Gender was not used in the main analyses but in the descriptives overview of demographics.
Reporting on race, ethnicity, or other socially relevant groupings	Measure: Which of these best describes your ethnicity? Asian/Asian British, Black/African/Caribbean/Black British, White, Mixed/Multiple ethnic groups, Other ethnic group or background, Prefer not to say. Measuring ethnic demographics is important in the climate activist context, with movements aiming to broaden their appeal beyond traditionally white ethnic backgrounds; this study wanted to explore the amount of ethnic diversity in climate activist respondents as a result. Analyses: Ethnicity was not included in analyses, it is listed in the descriptives table in the Supplementary Materials and the demographics overview Figure in the manuscript.
Population characteristics	Extinction Rebellion UK climate activists.
Recruitment	Participants were recruited on the Extinction Rebellion UK email list.
Ethics oversight	The study was approved by the institutional ethics committee of the first author (the University of St Andrews).

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences   ☒ Behavioural & social sciences   ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf]()

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	Survey study of Extinction Rebellion UK email list subscribers, quantitative data. Assessing the impact of repression and emotions on collective action intentions.
Research sample	Extinction Rebellion UK email list subscribers (563 male, 751 female, 28 non-binary, 16 prefer not to say, 17 missing) with an age range of 18-100.
Sampling strategy	Convenience sampling: launching the survey to subscribers to the Extinction Rebellion UK email list.
Data collection	Participants completed one 10-minute survey on Qualtrics.
Timing	19 December 2024-25 January 2025.
Data exclusions	None.
Non-participation	Of 1662, 287 participants were removed from the survey for either indicating they did not consent to their data being collected, completing less than 85% of the survey, or failing an attention check.
Randomization	N/A.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒ ☐	Antibodies
☒ ☐	Eukaryotic cell lines
☒ ☐	Palaeontology and archaeology
☒ ☐	Animals and other organisms
☒ ☐	Clinical data
☒ ☐	Dual use research of concern
☒ ☐	Plants

Methods

n/a	Involved in the study
☒ ☐	ChIP-seq
☒ ☐	Flow cytometry
☒ ☐	MRI-based neuroimaging

Plants

Seed stocks	*Report on the source of all seed stocks or other plant material used. If applicable, state the seed stock centre and catalogue number. If plant specimens were collected from the field, describe the collection location, date and sampling procedures.*
Novel plant genotypes	*Describe the methods by which all novel plant genotypes were produced. This includes those generated by transgenic approaches, gene editing, chemical/radiation-based mutagenesis and hybridization. For transgenic lines, describe the transformation method, the number of independent lines analyzed and the generation upon which experiments were performed. For gene-edited lines, describe the editor used, the endogenous sequence targeted for editing, the targeting guide RNA sequence (if applicable) and how the editor was applied.*
Authentication	*Describe any authentication procedures for each seed stock used or novel genotype generated. Describe any experiments used to assess the effect of a mutation and, where applicable, how potential secondary effects (e.g. second site T-DNA insertions, mosiacism, off-target gene editing) were examined.*