

Article

Emotional Support and Opposition for National Environmental Policies in the UK

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Abstract

Understanding affective responses to the climate and ecological emergency is essential for developing and ensuring compliance with mitigation policies. Previous evidence indicates that individuals feeling negative emotions about the state of nature and the climate are more likely to show greater support for environmental policy. This study investigates which of twenty distinct emotions predict attitudes towards nationally relevant UK environmental policies, with specific hypotheses differentiating between unambiguous and ambiguous emotions. We conducted two cross-sectional online surveys with 651 UK residents, who rated their support for three policy sets: the Conservative Government's manifesto, the Climate and Ecology Bill, and the Green New Deal Bill. By integrating theoretical expectations with exploratory analysis, we found that higher levels of worry and horror predicted greater policy support, whereas boredom predicted opposition. Our analytical strategy underscores the importance of integrating both a priori and explorative models to enhance statistical sensitivity, thereby capturing a broader spectrum of affective states that might otherwise be overlooked but may be crucial for designing targeted interventions. These findings suggest that policymakers can leverage specific emotions, such as worry, to foster support, while addressing boredom to mitigate resistance, thereby enhancing the effectiveness of environmental communication and interventions.



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1. Introduction

The number of local and national governments declaring a “climate emergency” has been dramatically increasing since 2016 and now entails over 2366 declarations, including 18 nations (CEDAMIA 2025). Meanwhile, scientists have been delivering a series of warnings using the terms climate emergency, ecological emergency, nature emergency, planetary or biospheric emergency to indicate the high level of threat that climate change and biodiversity loss represent for humanity and life on earth (Cottey 2022; Racimo et al. 2022; Ripple et al. 2017, 2020). Here, we refer to the compound effects of planetary climate and nature crises as the climate & ecological emergency (CEE). There has been significant public concern in recent years, leading to substantial ontological and taxonomic confusion wherein a multiplicity of new psychological and psychiatric constructs addressing the negative emotional experience associated with the CEE have been coined that hardly differentiate from the existing terms (Coffey et al. 2021). Terms such as eco-anxiety and climate

anxiety are suggested to indicate anxiety associated with perceptions about climate change, or more general negative environmental information (Clayton 2020). At the same time, affective responses to the CEE have become progressively more central to the scientific assessment of mitigation and adaptation strategies, as testified by the recent inclusion of mental health within the IPCC AR6 (Harper et al. 2022). Here, we question which emotions about climate change may be informative of people's preferences about environmental policy. We add to this literature by surveying the respondents' emotional reaction to climate change as well as their opposition or support to existing and proposed UK environmental policies. We therefore ask the following: how do emotions relate to people's support or opposition for environmental policy?

Recent contributions have sought to address emotional complexity with updated conceptual frameworks. For example, Pihkala (2022) proposed a comprehensive taxonomy of climate-related emotions, highlighting the breadth of affective experiences beyond traditional categories such as fear or worry, and discussing their implications for both research and policy engagement. Similarly, recent empirical work has underscored the role of discrete emotions in shaping climate-related risk perception, behavioural intentions, and policy support across different national contexts (e.g., Böhm et al. 2023; Kovács et al. 2024; Ogunbode et al. 2022; Stanley et al. 2021). These newer findings reinforce the importance of integrating both established and emerging affective constructs into the study of environmental policy attitudes.

Understanding the influence of emotions about climate change on policy support is crucial for policymakers and environmental activists for two reasons. First, emotions can trigger or alter motivational drives and eventually determine environment-relevant behaviour. Importantly, previous research has investigated these links in two distinct ways. Some studies have examined emotions in relation to actual pro-environmental behaviours (e.g., recycling, energy saving, activism) measured through observation or self-reported past actions (e.g., Bamberg and Möser 2007). Others have explored emotions in the context of behavioural intentions—that is, self-reported likelihood or willingness to engage in future behaviour (e.g., Rees et al. 2015). While both strands of the literature highlight the motivational role of emotions, evidence consistently shows a gap between intentions and actual behaviour (Sheeran and Webb 2016), meaning that findings from one do not always translate directly to the other. Second, emotions can also determine risk perceptions. By understanding and managing risk perceptions, policymakers can design better communication strategies, gain public trust, and implement effective environmental regulations. For instance, if people perceive an environmental risk as severe and immediate (e.g., climate change, air pollution), they are more likely to support and comply with regulations. If the risk is underestimated or seen as distant, policies may face resistance.

Emotions are conducive to motivational components that introduce further complexity in the quest for theoretical expectations. For example, negative emotions such as anger and guilt are thought to generate approach/positive activation that can promote collective action (Stollberg and Jonas 2021). Likewise, a positive emotion can have detrimental effects on policy support (Marlon et al. 2019). In fact, both negative (e.g., fear) and positive (e.g., hope) emotions can contribute to both pro-environmental and anti-environmental behaviour (Brosch 2021). Although previous work has examined the impact of some affective states (e.g., worry, anxiety, hope), less attention has been given to other, more complex emotions (e.g., confusion, disappointment). Here we seek to offer a more inclusive examination of a wide range of emotions apt to affect specific environmental policy.

We define emotion as a psychophysiological state associated with changes in cognition, experience, autonomic arousal, and behaviour originating from the appraisal of a significant event/information (Scherer 2005).

People's decision making on environmental policy is complex, as it can be influenced by emotions about climate change that are shaped by epistemic beliefs (Mansfield and Clinchy 2002; Muis et al. 2015). Due to lack of agreement on what could be an exhaustive list of environmentally relevant emotions (Hahnel and Brosch 2018; Kals and Müller 2012), we opted for a large range of context-relevant emotions (Table S1) to investigate the effect of emotion intensity on support for a range of specific environmental policies aimed at tackling the CEE in the United Kingdom (UK).

Employing public opinion surveys, we investigated respondents' emotional preferences to three sets of proposed policies that were put before the UK Parliament with the aim of tackling the CEE. For detailed descriptions of the three UK policy sets included in the study—the Conservative Government's 10-Point Plan, the Climate and Ecology Bill, and the Green New Deal Bill—see Supplemental Material S3.1.

The status quo of empirical evidence seems to support the general expectation that individuals feeling negative emotions about climate change are more likely to show high levels of support for environmental policies (Brosch 2021; van Valkengoed and Steg 2019). We therefore proceed by (i) outlining a theoretical framework that distinguishes between emotion types and the mechanisms by which they may influence policy attitudes, (ii) presenting our hypotheses, and (iii) reporting results from two cross-sectional UK surveys that test these expectations.

2. Theoretical Framework

In this section we distinguish between unambiguous emotions (e.g., worry, anger, hope) that are clearly valenced in relation to climate change and ambiguous emotions (e.g., surprise, disappointment, sadness) that can elicit mixed appraisals. This framework guides the hypotheses tested below.

2.1. Unambiguous Emotions About Climate Change

Unambiguous emotions, such as fear, anger, guilt, or hope, arise from appraisals that are relatively clear in valence and action tendency; they predict distinct motivational responses and are therefore expected to have clearer links to policy preferences. For example, worry and fear both signal threat appraisal and can motivate protective actions, whereas anger often promotes approach-oriented responses aimed at addressing perceived causes of harm (Brosch 2021). Given their clearly defined nature, unambiguous emotions are expected to have a significant impact on support for environmental policy. However, each unambiguous emotion differs in the direction of its impact, shaping public opinion either in favour of or against environmental policy.

Distress is a construct that can contain several negative emotions. In fact, a "climate change distress" scale proved useful in documenting the experience of individuals surveyed both in the UK and Australia (Reser et al. 2012). More recently, Lawrance et al. (2022) used the scale in a study of young people (aged 16–24 years) in the UK and reported greater climate change distress than COVID-19 pandemic-related distress. Possible reasons as to why the CEE may or may not be perceived as a major threat by the UK public include the conception that it is a looming threat as opposed to an immediate danger (Leiserowitz et al. 2013; Rickard et al. 2016; Večkalov et al. 2021). A looming threat can induce anxiety, and the intensity of this anxiety increases as the threat approaches (Riskind and Calvete 2020). Anxiety has been shown to impair decision making (Miu et al. 2008) and trigger public opposition to governmental policies (Brader et al. 2008). Yet, Ogunbode et al. showed that anxiety is associated with pro-environmental behaviour (Ogunbode et al. 2022).

Worry is a central feature of anxiety, and when non-pathological, it may trigger positive behavioural change (Newman et al. 2013). For example, the Opinion and Lifestyle

Survey (Office for National Statistics 2021) revealed that adults worried about the impact of climate change expressed the intention to change their lifestyle more than those who were unworried. Hickman et al. (2021) reported that 84% of their surveyed adolescents were at least moderately worried. In addition, the authors reported how anxiety and distress were correlated with perceived inadequate government response and associated feelings of betrayal.

Fear-eliciting communication is effective in influencing attitudes, intentions, and behaviours (Tannenbaum et al. 2015). In this context, Witte and Allen (2000) also showed that strong appeals to fear are most effective when coupled with high individual efficacy messaging. These findings agree with more recent experimental evidence showing that pessimistic climate change appeals can increase risk perception and perceived efficacy, likely due to increased emotional arousal (Morris et al. 2020).

Although relatively understudied in environmental psychology, *horror* appears to be an intense, visceral reaction to the catastrophic consequences of ecological degradation. We reasoned that based on the Protection Motivation Theory (PMT), this emotion may increase perceived severity and vulnerability, thereby motivating endorsement of protective public policies. PMT explains how people react to potential threats, such as fear messages that motivate protective actions. Accordingly, the PMT would explain why the more vulnerable individuals feel to the threats of climate change, the more likely they are to purchase electric cars (Bockarjova and Steg 2014), take action to mitigate drought (Keshavarz and Karami 2016), and be willing to engage in personal pro-environmental behaviours (Kim et al. 2013).

Guilt promotes pro-environmental behaviour (Rees et al. 2015; Swim and Bloodhart 2015) and support for mitigation policy (Lu and Schuldt 2015). Guilt inherently involves self-attributions of culpability, reflecting an individual's acknowledgment of their role in contributing to environmental degradation. Accordingly, the anticipated guilt of not acting predicts pro-environmental behaviour (Onwezen et al. 2013). Participants who felt guilty in response to climate change were more likely to support climate policies according to Smith and Leiserowitz (2014). By incorporating guilt, we accounted for its potential to bridge personal accountability with demands for institutional climate action.

Anger is also an approach-activating emotion that can promote individual (Stanley et al. 2021) and collective action (Stollberg and Jonas 2021). There seems to be substantial consensus that both anger and guilt are determinants of collective action (e.g., van Zomeren et al. 2008). Hence, we considered both emotions as positive correlates of policy support.

Disgust (i.e., moral disgust) can be a powerful motivator for pro-environmental attitudes. While some research has linked general disgust sensitivity to protectionist or anti-scientific stances (Kam and Estes 2016), moral disgust is often elicited by the perception of environmental contamination and degradation—such as pollution of natural landscapes—as a violation of the moral foundation of purity (Feinberg and Willer 2013). This sense of moral violation may trigger a desire to cleanse, restore, and punish, thereby promoting support for policies aimed at regulating polluters and protecting natural environments (Horberg et al. 2009). Thus, we expected that disgust felt in response to the CEE would positively correlate with policy support.

Positive emotions such as *interest* (or *curiosity*) stimulate broader thinking and are more likely to activate creative and innovative processes (Fredrickson and Branigan 2005). In fact, interest or curiosity about climate change was reported to be a positive correlate of environmental policy support (Wang et al. 2018).

Calm and *confidence* entail a neutral or positive emotion often linked to hopeful beliefs. Individuals who report being calm in the face of the climate crisis may do so because they trust the government or institutions to take care of climate change and hence, remain emotionally unaffected by it (Mevorach et al. 2021). Calm also implies less uncertainty,

potentially driven by the provision of accurate and reliable information on the issue at stake. Equally, the feeling of confidence when thinking about climate change may support positive beliefs that governments will engage in international treaties and action or that scientific, energy, and manufacturing innovations will happen before the most devastating effects of climate change start impacting the surveyed individual (Fløttum 2014).

In addition to emotions that motivate engagement, such as worry or guilt, boredom represents a distinctive unambiguous emotion with a disengaging function in the CEE context. Conceptually, boredom is defined as an aversive state signaling insufficient stimulation or meaning, which prompts withdrawal from the current activity (Bench and Lench 2013; Eastwood et al. 2012). Unlike sadness or disappointment, which may carry more ambivalent action tendencies, boredom provides a clear motivational signal: to disengage from a situation perceived as tedious, overly abstract, or repetitive (van Tilburg and Igou 2012). Applied to climate change, this means that when individuals feel bored by scientific discourse, they may divert attention, avoid further information, and disengage from collective solutions. Recent empirical evidence seems to support this hypothesis: Geiger et al. found that *boredom* predicts lower intentions for personal and collective climate action, in some cases more strongly than other negative emotions such as anxiety or helplessness (Geiger et al. 2021). Taken together, boredom can be conceptualised as a negative predictor of policy support, as it reliably motivates avoidance and opposition rather than engagement.

Hope, on the other hand, has been linked with lower policy support (Marlon et al. 2019). However, Smith and Leiserowitz (2014) found that participants who were hopeful in response to climate change were more likely to support climate policies. Importantly, both Hornsey and Fielding (2016) and Feldman and Hart (2016) discussed how perceived self-efficacy can be an important covariate of individual pro-environmental behaviour and political participation.

2.2. Ambiguous Emotions About Climate Change

Ambiguous emotions (e.g., confusion, surprise, disappointment) often arise from mixed appraisals or low arousal states; their action tendencies are less consistent and may cancel each other out. Ambiguous emotions often contain competing feelings (e.g., concern and indifference at the same time), which may lead to indecision rather than clear support or opposition. For example, feeling *disappointment* about climate change may not point to a specific source of blame or a clear solution. As a result, people may not know how to respond to their disappointment. Accordingly, we expected effects to be smaller and more context-dependent than for unambiguous emotions.

Disappointment is linked to a withdrawal motive that may generate disinterest or indifference for the source of disappointment, providing a coping mechanism for frustration, and thus justifying the expectation of a non-significant impact of this emotion on environmental policy support. On the other hand, disappointment may capture the psychological toll of witnessing ecological degradation despite heightened global awareness and advocacy. It may arise from counterfactual comparisons between the current trajectory of environmental collapse and idealized outcomes of sustained planetary health (Van Dijk et al. 1999). For instance, individuals may feel disappointed by the persistent failure of humanity to curb emissions or protect biodiversity, even as scientific consensus on solutions strengthens. This aligns with broader conceptualizations of disappointment as a reaction to unmet expectations in domains of personal or collective significance (Zee-lenberg et al. 2000). By incorporating disappointment, we acknowledge its potential role in shaping climate attitudes as a reflection of grief over ecological loss rather than solely political dissatisfaction.

Feelings of *sadness* and *hopelessness* are powered by greater negative valence that often predicts social withdrawal and loneliness (Wolters et al. 2023). As such these emotions may predict lack of interest or motivation to an even greater extent than disappointment alone. Nonetheless, Smith and Leiserowitz (2014) found that individuals who felt sad and helpless when thinking about climate change were no more or less likely to support climate policies. These findings may highlight the “freezing” effect of low arousal emotions such as sadness and hopelessness. In other words, these negative emotional states generate frustration while dampening motivation and reducing initiative (Treadway and Zald 2011).

Respondents feeling *excitement/thrill* or *amusement* about climate change may have been affected by scientific ignorance or by subscription to false beliefs and conspiracy theories. For example, these affective states could be manifestations of a proximal cognitive defence against the awareness of the environmental threat (i.e., denial—e.g., laughing emoticons on Facebook), and thus predict opposition to environmental policy (Dodds 2021; Eslen-Ziya 2022). However, to date there is no clear indication of whether these emotions could reflect genuine emotions or instrumental sabotaging behaviour in survey respondents. We therefore considered these emotions as potential controls for response pattern screening and exclusion.

The emotion of *surprise* can be triggered in response to one’s schemas or belief systems about the future being violated. Individuals can respond to surprise by revising their schemas or taking action (Reisenzein 2000). For example, Individuals may wish to take action to avoid a climate catastrophe so that their schema of a healthy planet and future can be restored. However, it is unclear whether individuals could be expected to overcome the shock of their surprise in time to decide how they should support climate policies during our survey. The feeling of surprise can be superseded by *confusion* and the feeling of being conflicted about the topic and engagement with it. Confusion is usually driven by cognitive incongruity (Muis et al. 2015). Hence, we reasoned that both surprise and confusion might promote actions aimed at reducing the gap between new information and previous knowledge/beliefs. Nonetheless, a dissonance reduction motive might equally justify support or opposition to environmental policies.

We summarised our theoretical expectations regarding emotions and environmental policy support in Supplemental Material Table S1.

3. Materials and Methods

3.1. Sample

We conducted two internet-based cross-sectional surveys (developed and distributed using Qualtrics XM, Provo, UT, USA) that are analysed jointly but also separately in the Supplemental Material. The surveys took place between January 2021 and July 2022 (Survey 1 data collection: start 20 January 2021–end 27 June 2021; Survey 2 data collection: start 8 July 2022–end 25 July 2022).

The first survey recruited three hundred and seventy-six respondents in four successive rounds of data collection. One hundred and six of these were excluded either because they did not complete the survey or failed to satisfy study entry criteria or attentional checks. The data was collected online using SONA, social media platforms and Prolific (www.prolific.com). The second survey was also delivered online (July 2022) using only the Prolific platform and allowed us to collect a second, larger balanced sample. In this run we improved recruiting requirements by opting for a sex-balanced UK residents’ sample and only individuals with a respondents’ performance approval rate of 99–100. To increase the number of responses and reduce the chance of disengagement with the survey, we reduced the length of the survey by eliminating some of the previously used items that were not needed for the pre-registered study (Refer to the Supplemental Material S2 Table

S2 for a comparison of our sample with the most recent census in the United Kingdom). Acknowledging that correlation coefficients derived from samples smaller than 250 may exhibit less stability (Schönbrodt and Perugini 2013), we also used G*power (Faul et al. 2009) for a sensitivity analysis for both the combined and separate samples analyses to determine the effect sizes of our samples. We set the power at 0.95 and used 24 predictors. The sensitivity analysis showed that the combined sample allowed us to have at least one predictor with an effect size of $f^2 \geq 0.05$ ($\lambda = 33.70$; $F_c = 1.53$; $df = 635$) for us to detect a significant deviation from zero. The first survey was associated with an effect size of $f^2 \geq 0.14$ ($\lambda = 35.31$; $F_c = 1.56$; $df = 235$). The second survey was associated with an effect size of $f^2 \geq 0.09$ ($\lambda = 34.36$; $F_c = 1.55$; $df = 375$).

Respondents gave their informed consent before beginning the study, which was approved by the University of Essex ethics committee (project codes ETH2021-0434 and ETH2122- 2163). The survey materials, structure, and data analysis files are available on the Open Science Framework, where the hypotheses were pre-registered (<https://osf.io/p9vcm/registrations>, accessed on 22 October 2025).

3.2. Procedure

We first asked respondents to provide us with sociodemographic information (e.g., gender, ethnicity). Respondents were then provided with information on the CEE via a brief extract from the UK Government and the Climate and Ecology Bill (refer to the Supplemental Material S3 for wording of the survey instruments). Respondents were then presented with 5 more blocks (in evenly randomised order) of questions regarding their emotions about climate change, environmental policy support, behavioural engagement, beliefs and values. Only the blocks concerning policy support and emotions were used for the current study. The survey did not provide definitions of emotions. At the end of the survey, respondents were presented with links containing further information on topics mentioned throughout the study. Respondents were required to answer all questions.

3.3. Variables and Measures

3.3.1. Environmental Policy Support

The main variable of interest is environmental policy support. This is calculated as the mean of the 12-item ratings for each respondent. We aggregated these items to capture an overall disposition toward national-level climate and ecological policy, reducing item-specific idiosyncrasy and increasing measurement stability. Policy support is an indicator of public willingness to endorse climate action because it reflects collective attitudes and societal commitment to addressing climate change through systemic, large-scale solutions (Bouman et al. 2020; Victor et al. 2022). This is measured on a scale ranging from completely oppose (0) to completely support (100). Respondents were tasked with expressing their support for or opposition to a variety of policies aimed at tackling the environmental crisis. These were the same in both surveys. The scale is generated using actual policy proposals that were presented to UK Parliament. A total of thirteen items were used, but one item about investing in nuclear energy was omitted from our final measure because it had very low correlation ($-0.06 \leq r \leq 0.06$) with the other policy items (see list of policy items in Supplemental Material Table S3). Of the final 12 items, four were from the Conservative government's 'ten-point plan for a green industrial revolution' (Department for Business, Energy & Industrial Strategy et al. 2020), including 'End the sale of new petrol and diesel vehicles by 2030 and end the sale of hybrid cars by 2035'. Four items were from the Green New Deal's 'Decarbonisation and Economic Strategy Bill' (Lucas 2021b), including 'An immediate end to any expansion of fossil fuel exploration, extraction and production'. The remaining items were from the C&E Bill (Lucas 2021a), including 'UK government

to account for its entire carbon footprint (both in the UK and the products it imports from overseas)'.

3.3.2. Emotions

For our main explanatory variables, respondents were asked to rate how intensely they felt each of twenty different emotions when they thought about climate change on a seven-point Likert scale, from not at all (1) to very strongly (7). The emotions used were derived from the studies conducted by [Nabi \(2003\)](#) and [Smith and Leiserowitz \(2014\)](#) (see also Supplemental Material S1). We selected some mainstream emotions previously examined by the literature, whilst we added a set of unconventional emotions about climate change too. We postulated that even the most complex emotions are critical for understanding individuals' perceptions about environmental policy because they influence how people engage with, understand, and respond to climate and ecological issues. This approach allowed us to explore the importance of unconventional emotions and compare them with emotions that have expected predictive power. The complexity can also manifest as interaction between different emotions due to their semantic contiguity and/or situational coexistence. To assess this possibility from a psychometric point of view, we tested for multicollinearity between all the predictors in the regression models. This was not substantial, as the variance inflation factors (VIFs) were <5 ([Kim 2019](#)).

3.3.3. Sociodemographic and Control Variables

Besides age, gender (0 = male; 1 = female), and ethnicity (0 = non-White; 1 = White), we asked respondents to indicate their political ideology (using a seven-point Likert scale from extremely liberal to extremely conservative) as this has been considered important in shaping climate policy attitudes ([Kahan et al. 2012](#)). For the exact wording of these items, see Table S4. We also asked participants for their subjective social status using a ten-point scale from worst off to best off ([Adler et al. 2000](#)). A variable was also created to indicate which survey a respondent answered (survey 1 = 0; survey 2 = 1). Descriptive statistics for all variables (*N*, Mean, *SD*, Min, Max, VIF) are provided in Supplemental Material S4 for the full sample (Table S5) and separately for each survey (Table S6). Bivariate correlations were also calculated for the full sample and are presented in Supplemental Material S4 Table S7.

3.4. Data Analysis Strategy

We performed the analyses in R language ([R Core Team 2021](#)). We report central tendency and variability as Mean and Standard Deviation ($M \pm SD$). We assessed normality using Q-Q plots. We analysed the surveys as a merged sample but also separately (for separate analyses by Survey see Supplemental Material Tables S9–S11).

Table S5 shows descriptive statistics for all variables presented in our analysis. On average, respondents declared strong support for environmental policies ($M = 76.15$ on the 1–100 scale). They reported worry more than any other emotion, with fear and sadness being next most intensely felt. As expected, participants felt amused and excited least strongly. The mean ideology of the sample was centre left. It consisted of 346 liberals (ideology = 1–3), 192 centrist (=4), and 113 conservative participants (=5–7). Figure 1 shows all policies in the measure of policy support received over 60% support from most participants. The most supported policy was for the UK to plant 30,000 hectares of new trees every year. The least supported policy was for the UK government to form a citizens' assembly to advise on environmental policies. When looking at the intensity of each emotion, we found that most emotions listed in our study were relevant, as at least some of the respondents felt each emotion to some degree when thinking about climate change. However, the least experienced emotions were boredom, excitement/thrill, and amusement.

As per our registration, we performed multiple linear regressions. Model 1 in Table 1 examines unambiguous emotions and the control variables. Model 2 in Table 1 is a full model of all emotions and control variables. Each model was also analysed without co-variables (Supplemental Material S5 Table S8), and the results remain qualitatively the same. Survey 1 and Survey 2 were also analysed separately and reported in the Supplemental Material S5 (Tables S9 and S10). As an exploratory comparison, the interaction between surveys and each variable was also analysed, but no interactions were significant (Table S12).

Table 1. Regression for policy support.

	Model 1					Model 2				
Variable	<i>b</i>	<i>SE</i>	CI	<i>p</i>	<i>q</i>	<i>b</i>	<i>SE</i>	CI	<i>p</i>	<i>q</i>
Intercept	64.2	5.26	[53.87, 74.53]	***	***	66.52	5.35	[56.02, 77.03]	***	***
Boredom	−2.56	0.51	[−3.56, −1.56]	***	***	−1.9	0.53	[−2.93, −0.86]	***	***
Horror	1.38	0.55	[0.31, 2.45]	*	*	1.5	0.55	[0.42, 2.59]	**	**
Worry	1.79	0.62	[0.57, 3.02]	**	**	1.56	0.63	[0.33, 2.79]	*	*
Disgust	−0.21	0.49	[−1.18, 0.75]			−0.52	0.5	[−1.51, 0.47]		
Anxiety	1.04	0.57	[−0.07, 2.15]			1.3	0.57	[0.18, 2.42]	*	*
Interest	0.39	0.33	[−0.26, 1.04]			0.46	0.34	[−0.21, 1.13]		
Calm	−0.51	0.57	[−1.62, 0.60]			−0.44	0.56	[−1.54, 0.66]		
Guilt	0.13	0.37	[−0.60, 0.86]			0.57	0.38	[−0.17, 1.31]		
Fear	0.77	0.64	[−0.48, 2.03]			0.79	0.63	[−0.46, 2.03]		
Hope	0.63	0.42	[−0.20, 1.45]			0.39	0.43	[−0.45, 1.24]		
Anger	0.2	0.46	[−0.69, 1.10]			0.19	0.45	[−0.70, 1.08]		
Confidence	0.1	0.53	[−0.95, 1.14]			0.35	0.58	[−0.80, 1.49]		
Distress	−0.26	0.45	[−1.15, 0.62]			−0.02	0.45	[−0.90, 0.86]		
Disappointment						1.14	0.46	[0.24, 2.04]	*	
Confusion						−0.91	0.35	[−1.60, −0.22]	**	
Hopelessness						−0.96	0.39	[−1.73, −0.19]	*	
Sadness						−0.47	0.49	[−1.43, 0.49]		
Amusement						−2.04	0.78	[−3.57, −0.51]	**	
Excitement						0.35	0.77	[−1.15, 1.86]		
Surprise						−0.13	0.46	[−1.03, 0.78]		
Political Ideology	−2.48	0.49	[−3.44, −1.52]	***	***	−2.48	0.48	[−3.43, −1.53]	***	***
Gender (1:M, 2:F)	−0.98	1.15	[−3.24, 1.28]			−0.81	1.18	[−3.13, 1.51]		
SSS	0.23	0.34	[−0.44, 0.90]			0.28	0.34	[−0.39, 0.95]		
Ethnicity	−0.92	1.8	[−4.46, 2.62]			−1.29	1.78	[−4.79, 2.21]		
Survey	−0.41	1.16	[−2.68, 1.87]			−0.42	1.14	[−2.66, 1.82]		
<i>N</i>	651					651				
<i>R</i> ²	0.42			***		0.45			***	
Adjusted <i>R</i> ²	0.41			***		0.43			***	
ΔR^2						0.03			***	

Note. CI = 95% confidence intervals, *q* = FDR adjusted *p*-values for variables not in Model 1, SSS = Subjective Social Status. The “survey” variable was also included as a predictor. * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.

Two emotions, excitement/thrill and amusement, were conceived as potential indicators that respondents were actively engaging deliberate response distortion (Arthur et al. 2021) or displaying a careless attitude towards the survey. So, as per our registration, the analyses were repeated after removing respondents who experienced excitement/thrill or amusement more than “not at all” (Supplemental Material S6 Tables S13–S16). We also ran an exploratory analysis to assess the impact of removing outliers from our sample (Supplemental Material S7 Figures S5 and S6 and Tables S17–S20).

As we tested multiple models, the two-stage sharpened method for false detection rate (FDR) adjustment (Benjamini et al. 2006; Wong-Parodi and Rubin 2022) was used to adjust

the significance threshold for all variables without a pre-registered directional hypothesis (i.e., emotions not included in Model 1 of Table 1 and all covariates).

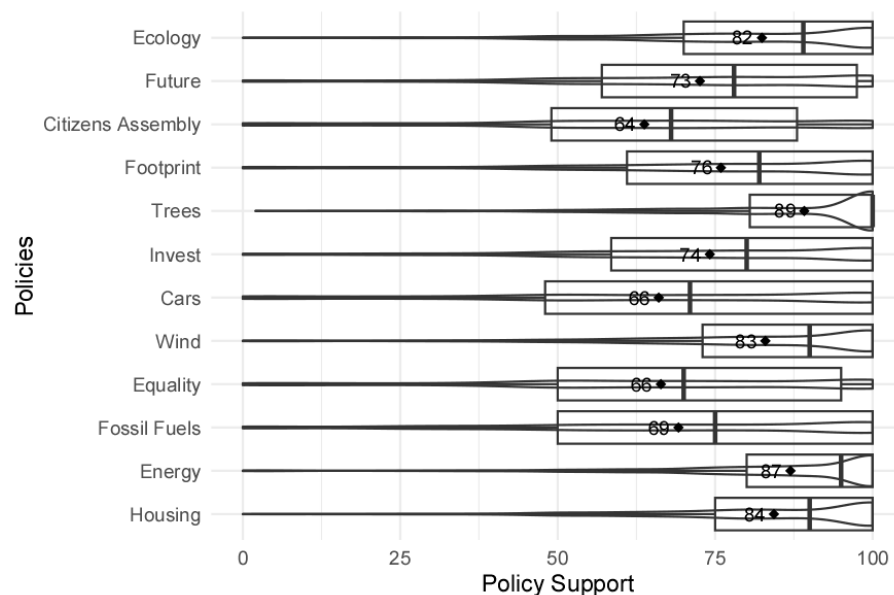


Figure 1. Level of Support for each Environmental Policy. The central line in the boxplot for each policy shows the median and the extents are the 25th and 75th percentiles. ♦ = Mean support. Policy descriptions are presented in the Supplemental Material Table S3. See Supplemental Material S4 Figures S1 and S2 for results separated by survey.

4. Results

4.1. Inferential Statistics

Figure 2 shows the distribution of emotion intensity in respondents across the two surveys. Likewise, using the combined sample of both surveys, Table 1 shows results for the regression of policy support on each emotion presented in our survey instrument and all covariates. The results show a great variation in the strength of the association between the different emotions about climate change and environmental policy support. Participants who worried more about climate change were found to be more likely to support environmental policies. Feelings of horror also positively predicted policy support. However, boredom was negatively associated with policy support, as in respondents who reportedly felt bored when thinking about climate change were less supportive or even opposed to environmental policy. No other emotions were as consistent predictors of policy support as worry, horror, or boredom. For instance, anxiety only significantly positively predicted policy support when all the predictors were included in the model. Regarding the control covariates, only ideology was a significant predictor of policy support, with respondents who were more conservative being less likely to support environmental policies.

Figure 3 shows regression coefficients for each emotion based on Model 2 (Table 1). The results indicate that worry, horror, anxiety, and disappointment are significantly positive predictors of environmental policy support. At the same time, the unconventional emotions about climate change, of confusion, hopelessness, boredom, and amusement, are significant negative predictors of environmental policy support. However, Following FDR correction, only worry, horror, and boredom remained significant.

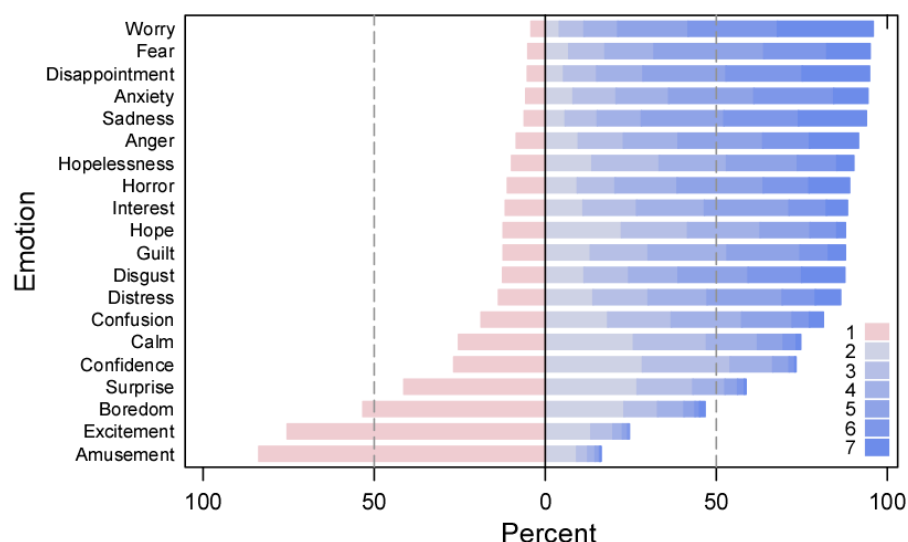


Figure 2. Frequency distribution of emotion intensity when thinking about climate change. The left side of the graph shows the percentage of participants who selected 1 (“Not at all”) for how much they felt each emotion. The right side of the graph shows the stacked percentages of participants who identified that they felt an emotion to some degree by selecting 2–7, where 7 was labelled “Very strongly”. See Supplemental Material S4 Figures S3 and S4 for results separated by survey.

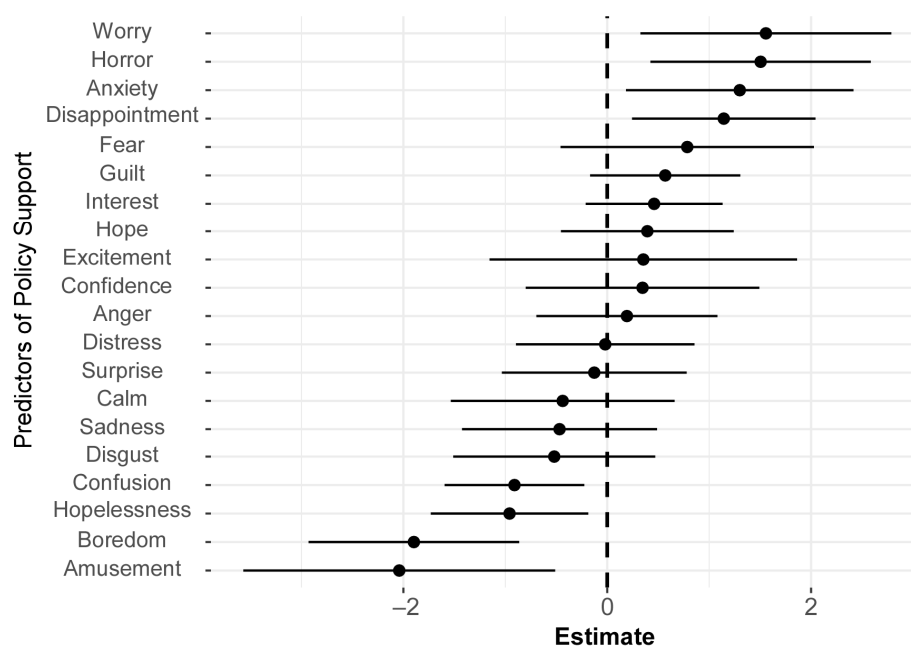


Figure 3. Regression Coefficients for Policy Support. Horizontal bars indicated 95% confidence intervals, and the dashed vertical line marks a null effect. SSS = Subjective Social Status. Following FDR correction, hopeless, confused, disappointed and amused were no longer significant at $q < 0.05$.

4.2. Control Analysis

In the Supplemental Material (S6 and S7), we provide sensitivity analyses that allowed us to estimate the impact of excited and amused participants as well as of outliers on the main results. One hundred and ninety-two participants reported feeling to some extent excited ($N = 86$), amused ($N = 32$), or both ($N = 74$) when they thought about climate change. We reasoned that the emotions of excitement/thrill and amusement could cause potential interpretation bias. Those emotions may reflect genuine emotions resulting from defensive reactions and/or a negative attitude towards environmental policies. Equally, they may reflect instrumental sabotaging behaviour. As a precaution against the later

possibility affecting our results, we excluded these participants from the analysis in survey 1, survey 2 and the full dataset (merged surveys). In these analyses, 61 participants were omitted from survey 1 and 131 participants were omitted from survey 2 (Supplemental Material S6 Tables S13–S16). Moreover, we produced another control regression which combined the exclusion of excited or amused participants with the removal of those who were classed as outliers (defined as respondents with Cook's Distance above threshold $(4/(N-k-1))$ where k = number of predictors; see Supplemental Materials S7 Figures S5 and S6 and Tables S17–S20). Results on this subsample remained virtually identical for the emotions of worry, horror, and boredom. In addition, we found that among all the other emotions with an unambiguous or ambiguous link to the CEE, only guilt and disgust predicted policy in the full adjusted model of the merged surveys, especially after FDR correction was applied (see Model 4 of Merged Surveys in Table S17).

5. Discussion

5.1. Summary of Findings

Our study explored the relationship between emotion and policy support within the specific context of the UK's current political scenario (Supplemental Material S3). Results revealed strong support for the policies mix from most participants (Figure 1). This can be partly explained by the fact that each proposed policy has a CEE-mitigating element, albeit in different sectors and with different implications. A host of negative emotions were felt to at least some degree when thinking about climate change in the merged sample. Amongst those felt most intensely by our respondents, we could identify worry, disappointment, and sadness; in contrast, amusement, excitement, and boredom were the least reported emotions (Figure 2). When using only those emotions with unambiguous links to the CEE as predictors of policy support/opposition (Model 1, Table 1), we found that worry, horror, and boredom were consistently explaining changes in policy ratings (particularly in the most representative sample, Survey 2). Together with anxiety, these were significant predictors when all the emotions were included (Model 2, Table 1). Our results also revealed that ambiguous emotions about climate change, namely disappointment, confusion, hopelessness, and amusement, were also significantly associated with change in policy ratings (Figure 3). Importantly though, following FDR correction ($q < 0.05$), these ambiguous emotions were no longer significant. In line with our hypothesis, ambiguous emotions have a smaller or no significant impact on environmental policy. By combining an evidence-based and data-driven strategy, we teased out the emotional milieu predictive of environmental policy support/opposition. Our control and sensitivity analyses were instrumental in further evaluating the robustness of our findings. In particular, the stringent approach of combining the exclusion of respondents who felt excitement or amusement and were labelled as outliers (Table S17), as well as applying the FDR correction of the alpha value, allowed us to determine which of the effects reported by the main analysis would remain significant. The analysis with the merged (and larger) sample ($N = 432$) revealed that feeling worried and horrified significantly predicted policy support, whilst feeling bored predicted opposition, both when only unambiguous emotions (Model 2) and when all the emotions were included in the model (Model 4). Similarly, political ideology was confirmed as a strong predictor in this analysis, too.

5.2. Interpreting Key Findings

Our analyses identified three emotions that were most robustly predictive of policy support in the merged sample: worry, horror, and boredom. As expected, we find unambiguous emotions (worry, horror and boredom) to be strongly associated with envi-

ronmental policy support. Below, we interpret these findings with reference to theory and prior empirical work.

We have already highlighted the extent to which worry has been positively associated with pro-environmental attitudes and behaviors. However, less is known about other negative emotions like horror. Unlike more frequently studied emotions such as fear and anxiety, horror appears to tap into a uniquely intense and visceral reaction to the CEE. Yet, according to the PMT, worry, fear, horror and anxiety may rely on a similar biological response to the existential threat that triggers compensatory behavioral responses (Shin and Liberzon 2010). Nevertheless, horror tends to represent an extreme reaction that combines elements of both fear and anxiety but also incorporates a distinctive sense of revulsion or moral shock (Cottey 2022). This emotion likely stems from appraisals of climate change as an overwhelming, catastrophic threat to life and ecosystems, evoking a sense of existential dread. Thus, while all three emotions share an underlying link to threat appraisal, horror may amplify threat severity appraisals, particularly when individuals perceive climate impacts as irreversible or morally unconscionable (e.g., mass extinction, ecosystem collapse). Importantly, horror's predictive power remained robust, even when controlling for fear and anxiety, suggesting it captures a distinct affective pathway. Hence, we speculate that horror may act as an emotional catalyst, mobilizing a sense of urgency that encourages proactive political and personal actions. Future research should disentangle whether horror arises from specific narratives (e.g., imagery of climate catastrophes) or moral appraisals of human culpability (Scherer 2005), as these nuances could inform communication strategies.

The psychological mechanism mediating the relationship between boredom and the CEE may be explained by construal-level theory. The theory posits that as events are perceived as psychologically farther away (more distal), they give rise to mental representations that are more abstract (Trope and Liberman 2010). In this vein, climate change may often be considered distant in time or place rather than personally relevant in the here and now. Consequently, an individual bored by climate change discourse may experience a mix of factors, including psychological distance and a pre-existing lack of interest or motivation to engage with the complexity of the problems at hand. For example, attempting to understand the implications of climate models may require individuals to deploy a considerable number of cognitive resources. These models also present extreme changes in the distant future that most affect other regions of the world. A situation that triggers an aversive response to divert attention to more rewarding thoughts and activities (Bench and Lench 2013; van Tilburg and Igou 2011), which are less abstract and more concretely relevant to one's life. Empirically, Geiger et al. (2021) similarly found that boredom is negatively associated with engagement in climate action. Although our design did not require our respondents to contemplate actions (e.g., to mitigate their personal carbon footprint before rating the selected policies), we conceptually replicate this strong negative association between boredom and pro-environmental attitude. Together, these findings suggest that communications seeking to counteract boredom should reduce psychological distance and foreground immediate, concrete co-benefits of climate policies (e.g., local health improvements, jobs).

Contrary to prior research that identified fear and anger as strong predictors of policy support (e.g., Leiserowitz 2006), we found no significant effects for these emotions in our primary models. This divergence may reflect several factors: the UK policy context and the specific policy items used; the inclusion of a broader set of emotions in the same models (which may absorb variance otherwise attributed to fear/anger); and the use of an aggregated policy support measure that captures a general orientation rather than instrument-specific preferences.

Understanding the emotional drivers behind public opinion allows policymakers to move beyond traditional socio-demographic categories and identify cross-cutting sentiments that unite otherwise diverse groups. This emotional lens reveals hidden constituencies and patterns of support or opposition that may be overlooked by standard demographic analysis. Moreover, tailoring policy communication to these emotional dynamics—rather than relying solely on rational or informational appeals—can foster greater public engagement, reduce resistance, and build trust across a wider and more inclusive segment of the population (see also [Bretter and Schulz 2025](#)). For example, to harness worry and horror constructively (i.e., to motivate protective action rather than paralysis), messaging should emphasise tangible risks to familiar people and places (local impacts, threats to family well-being) and pair threat information with high-efficacy solutions. To mitigate boredom and disengagement, communications should foreground immediate co-benefits (cleaner air, job creation) and concrete, local examples of successful interventions.

5.3. Limitations and Future Directions

Our sample skewed toward liberal political ideologies (64% liberal vs. 18% conservative), limiting generalisability to more politically diverse contexts. While sensitivity analyses indicated robust effect sizes ([Faul et al. 2009](#)), future work should prioritise stratified sampling to ensure demographic and ideological representativeness. In addition, the cross-sectional design precludes causal inferences. While we theorised emotions as drivers of policy attitudes, bidirectional or third-variable relationships (e.g., pre-existing values influencing both emotions and policy views) cannot be ruled out. Longitudinal or experimental designs, such as emotion-induction studies, will be needed to disentangle causality. The exploratory inclusion of 20 emotions, while a strength for hypothesis generation, increases the risk of Type I errors despite FDR corrections. Replication in independent samples is critical to confirm the stability of associations, particularly for ambivalent emotions like disappointment. These may in fact shed light on FDR-corrected non-significant results, which might reflect smaller effect sizes rather than absence of effect.

By means of a cross-sectional survey, [Myers et al. \(2024\)](#) questioned whether guilt, anger, hope, sadness, and fear were associated with support for distinct types of policies. They concluded that guilt was most strongly related to support for personally costly policies, hope to support for proactive policies, and fear to support for regulatory policies. Myers et al.'s diversification of policy items may explain why we found, for example, a significant effect of guilt only in our sensitivity analyses (Table S17). Prior comparative research shows attitudes toward climate policy instruments vary by type ([Brannlund and Persson 2012](#); [Coleman et al. 2023](#); [Kyselá et al. 2019](#)). For example, anger might be more predictive of support for punitive regulatory measures, while hope may more strongly predict support for positive-investment approaches. Future work should explore how different emotions interact with distinct types of environmental policies and autonomous policy instruments to clarify their conditional influence and pursue emotion–instrument mappings.

Like Myers et al., we cannot rule out that relevant emotions might have been missed. [Cowen and Keltner \(2017\)](#) highlight how self-reports of emotional states may defy rigid categorical separation and better be described according to fuzzy and dimensional representation with smooth transitions between states that are contiguous in the complex categorical space. Future research may give more consideration to what the best methodological approach to identifying emotional states may be. For example, a promising research path may consist of combining the approach used in our work in association with the mapping of specific types of policies, as in Myers et al. In addition, policy support interacts with a wide range of sociodemographic indicators that may also influence emotions. We opted for a simple design to increase interpretability and reduce collinearity bias. We cannot

exclude, however, that an inclusive study with indicators such as income or education and other socio-political characteristics may offer a better interpretation of the subject matter, especially when looking at various sub-samples. Such a study may provide especially important insights into the dynamics of this interaction and thus offer crucial findings for designing communication campaigns.

Furthermore, our findings must be interpreted within the context of political polarisation (Cole et al. 2025). Political ideology was a significant predictor of policy support in our models, and emotional appeals are rarely politically neutral. The same message intended to evoke worry in one group may provoke reactance or dismissal in another. Future research may test interaction effects between ideology and discrete emotions to identify cross-ideological communication strategies.

6. Conclusions

Predicting support for environmental policies has been a prominent focus in existing literature, with recent studies examining a wide array of factors at both individual and country levels. These factors encompass financial circumstances, such as the general economic situation of a country's sociodemographic features (Bakaki and Bernauer 2017; Kachi et al. 2015) and risk perception (Reser et al. 2012; Taylor et al. 2014). Since environmental policy, like any other ambitious policy, requires strong positive public support democratic governments are interested in satisfying public concerns (Anderson et al. 2017; Bakaki et al. 2020). Our study offers significant theoretical and methodological insight into public opinion as it does not capture policy support (or lack thereof) based only on socio-demographic or exogenous indicators, but rather focuses on emotions that set a policy as an urgent matter.

This study investigated how twenty discrete emotions relate to support for nationally relevant UK environmental policies. We argue that the combination of (1) evidence-based and data-driven CEE-relevant emotions, (2) nation-relevant contemporary policies, (3) a fine-grained and hierarchical analytical approach grounded on theoretical expectations and statistical robustness increased the sensitivity and precision of our estimates. Across two cross-sectional surveys, we find that UK residents who feel negative emotions such as worry and horror when thinking of climate change are more likely to show high levels of support for environmental policies, whereas those who feel boredom are more likely to oppose them. These findings extend prior work by highlighting horror as a novel predictor in this domain and by emphasising the disengaging role of boredom. The diametrical roles of boredom and horror underscore the functional diversity of negative emotions: while horror may heighten perceived threat and motivate support, boredom may signal emotional fatigue, prompting withdrawal. Practically, the results suggest communicators should combine concrete information about climate change with high-efficacy solutions and solution-focused narratives to reduce boredom and mobilise constructive engagement. Future research should disaggregate policy items and examine ideology–emotion interactions to refine these recommendations.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/socsci14110649/s1>.

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