

# Climate emotions: it is ok to feel the way you do



Recently, 120 world leaders met in Glasgow, Scotland, for the 2021 UN Climate Change Conference, discussing how to substantially reduce global emissions and, at the same time, limit the devastating effects of climate change.

These world leaders rely on the research of thousands of climate scientists: modellers, biologists, physicists, chemists, geologists, and myriad more experts that spend their waking hours conducting thorough, comprehensive research into every facet of climate change. They write reports, publish academic research, and contribute to the collective understanding of the state of the planet. For decades now<sup>1,2</sup> these scientists have been compiling more information, and painting a more detailed and progressively more dire picture of what the future holds.

This reality takes a mental toll. It has been known for some time that environmental change can lead to emotional distress.<sup>3</sup> Climate anxiety is beginning to be explored in the literature<sup>4,5</sup> but more work is needed, particularly exploring the effects that might be felt by climate researchers.

As scientists and communicators, we see increasing awareness that, for those working on the front line of climate change, there are real mental health risks. Burnout, climate anxiety, and climate grief are all being felt.<sup>6</sup> The purpose of this Comment is not to explore the psychological effects of climate change, but to acknowledge that climate scientists are experiencing a wide range of emotions and to inspire safe spaces where these feelings can be shared.

Between 2014 and 2020, Joe Duggan approached climate scientists from across the world, asking them to handwrite a letter on how climate change makes them feel. 5 years after the initial project launched, he returned to some original contributors and asked them the same question. These letters were shown in galleries and housed online under the banner, *is this how you feel?* They have been the focus of preliminary research<sup>7,8</sup> and have planted the seed for discussions around climate grief and anxiety.<sup>9</sup>

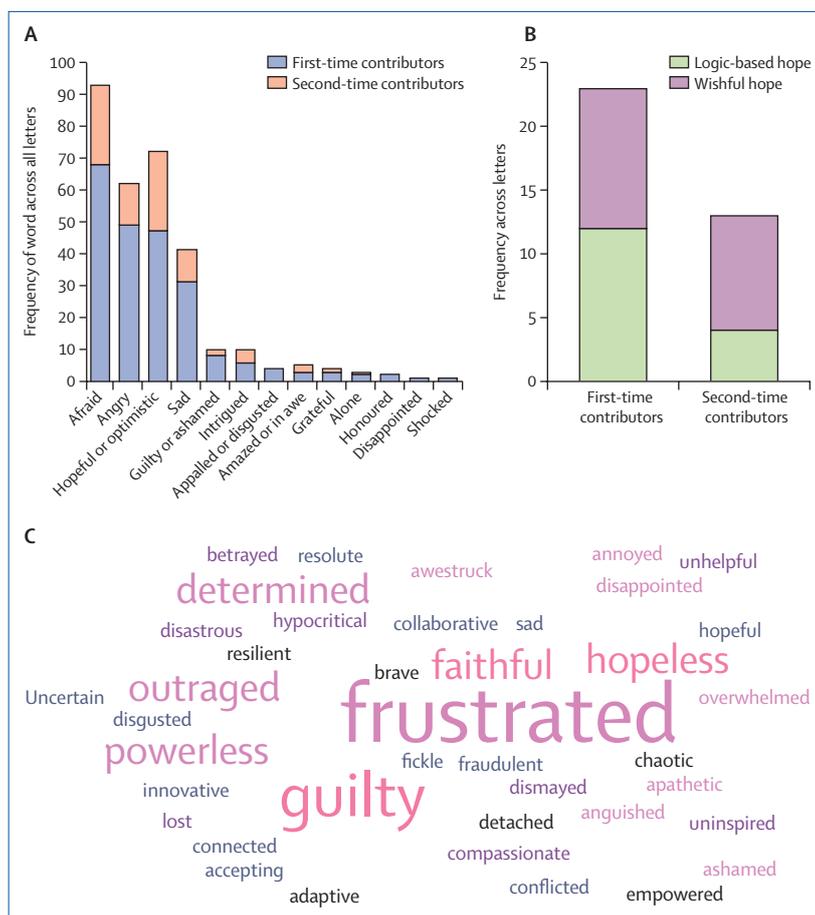
We have coded the 73 letters written by climate researchers as part of this project and present the findings here. 50 were from first-time contributors to the project and 23 were from those that wrote

follow-up letters approximately 5 years after their first. The frequency of emotions referenced are shown in the figure.

Generally speaking, negative emotions featured much more frequently than seemingly positive ones across both sets of letters. Throughout the coding process, it became clear that negative sentiment was being conveyed with a greater diversity of words, with terms such as anger, exasperated, anxious, distressed, upset, and infuriated being used, whereas positive terms were much fewer, with the word hope being the most common.

In viewing the figure, It initially appears as though hope and optimism were key features of both sets

For the *is this how you feel* project see <https://www.isthisshowyoufeel.com/>



**Figure:** Frequency of positive and negative emotions referenced across all letters, breakdown of references to hope, and word cloud (A) Frequency of words referring to positive and negative emotions across all letters. For both groups, neutral terms were coded, but are not included here. (B) Breakdown of the two types of hope conveyed in letters that referred to hope. (C) Word cloud of words selected by participants in the hope? and how to grieve for the planet project.

For the Human Systems Emotion Wheel System see <https://humansystems.co/emotionwheels/>

of letters. But this is an oversimplification. Hope—or feeling hopeful—could be characterised as positive in this analysis according to one predefined emotional classification hierarchy. However, upon further investigation, we identified that when climate scientists spoke of having hope, it usually took one of two forms: either (1) logic-based hope, which was accompanied by reasoning such as references to current positive political and attitudinal changes occurring now (eg, we can be hopeful, because we are seeing [specific] changes), or (2) wishful hope, which was accompanied by more negative statements about the global situation, with hope added as a way of expressing a (sometimes flippant) desire for future change.

These results suggest that hope, in the context of climate change, is a complex emotion for climate scientists.<sup>8</sup> It is not strictly positive or negative<sup>10,11</sup> and would benefit from further exploration to gain a richer insight into how climate scientists conceptualise hope.

Something that is clear from viewing the coding results is that scientists are feeling a diverse and varied range of emotions. This finding is supported by other projects that are uncovering a similar range of emotions. In one project titled hope? and how to grieve for the planet, Neal Haddaway interviewed environmental researchers and communicators about their feelings around the state of the planet, asking if they feel hope. Participants commonly referred to feeling frustrated, guilty, determined, faithful, hopeless, outraged, and powerless (figure C).

These projects go some way to normalise the expression of feelings about climate change, which is an important step in the right direction, but it is time to do more. Regardless of what world leaders discuss in Glasgow, the reality is that there will inevitably be need for a resilient, supported, driven research community, allowing for the continuation

of data collection, planning, and fighting. We are not calling for everyone to feel the same and act in one specific way; instead we call for openness to diversity in feelings and approaches while still acting collectively as a community. It is important that climate researchers know that they are not alone in having these emotions, and that sharing them can be cathartic and inspire a sense of community. Something that is needed now more than ever.

JD developed the is this how you feel project. NRH developed hope? and how to grieve for the planet. NB declares no competing interests.

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For the hope? and how to grieve for the planet project see <http://www.nealhaddaway.com/hope/>