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Complex dynamics of climate emotions among environmentally active Finnish and American young people

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Climate emotions have become an increasingly salient issue since the beginning of the 2000s. This paper draws on data from in-depth interviews from the United States (USA) and Finland to provide insight into the complex dynamics of climate emotions in 23 environmentally active young people in these two countries. The analysis centers on two main themes: (a) complex dynamics of climate emotions and (b) identities and felt social expectations. The results support recent research about the importance of anger, grief, and guilt as very common climate emotions among active people, although a broad range of emotions was recognized by the participants. Some observations were made about the role of cultural factors in these two countries. Through this analysis, this article contributes to the understanding about the ways in which identities and felt social expectations shape climate emotions, including feelings of inadequacy and obligation. Analysis of the experiences of this limited number of young people shows the prevalence of feelings of inadequacy and thus supports the recent arguments about the need to provide young people tools to set their responsibility in context, in order to avoid negative consequences of the felt pressures.

KEYWORDS

climate emotions, young people, eco-anxiety, eco-guilt, significant life experiences, Finland, United States, inadequacy

1. Introduction

Public attention toward the affective dimensions of climate change has increased rapidly since 2018. The Intergovernmental Panel on Climate Change's (IPCC) released a special report detailing the possible impacts of a global warming of 1.5°C, which activated many people. The formation of Fridays for Future is an important example of how this increase in awareness and concern had a significant impact (for scholarship on Fridays for Future, see, e.g., [Bowman and Pickard, 2021](#); [Eide and Kunelius, 2021](#); [Prendergast et al., 2021](#)). Various emotions and feelings about the climate crisis and related environmental crises have been explored with more frequency in recent years

through the framework of “climate emotions” (Neckel and Hasenfratz, 2021; Pihkala, 2022c; Swim et al., 2022). The common use of climate emotions captures both conscious feelings and less conscious bodily emotions. Although there are many climate emotions, the term “climate anxiety” has become popularized as an umbrella term to describe a myriad of affective experiences by the scholars and laypersons alike (Pihkala, 2020a). In this article, we use climate emotions as the widest term, and climate anxiety is thus a significant one of them.

The range of climate emotions that people experience is extensive from, for example, grief and sadness (e.g., Cunsolo and Ellis, 2018) to anger and frustration (e.g., Antadze, 2020; Pihkala, 2022c), to joy and hope (e.g., Ojala, 2012), and to guilt and shame (e.g., Aaltola, 2021). These emotions are important for several reasons. They shape people’s capacity and motivation to respond to climate issues, they are connected to wellbeing and functionality, and they have also been argued to be important in their own right, simply as parts of life that need attention (González-Hidalgo and Zografos, 2020; Pihkala, 2022b; Verlie, 2022).

This emotional landscape lies confusion, contradiction, and struggle of expression of certain emotions for a variety of reasons. People’s climate emotions and their attitudes toward emotions are shaped by personal opinion and experience, cultural norms, and various social and ecological factors (e.g., Norgaard, 2011; Crandon et al., 2022). Various emotions, such as grief and shame, are difficult for different people. Scholars have pointed out several problems related to the lack of engagement with emotions, such as increased distress because of unencountered emotions such as grief (Ojala et al., 2021). There are many issues around feelings of guilt and shame (Jensen, 2019; Fredericks, 2021), and even active people have been noted to suffer from pervasive feelings of not being enough (e.g., Hoggett and Randall, 2018; Nairn, 2019). While the amount of empirical studies about climate emotions experienced in various contexts is steadily growing (e.g., Iniguez-Gallardo et al., 2021; Clissold et al., 2022), scholars emphasize the need for more research in various areas.

Environmental activists have been a subject of great interest when it comes to thinking about the emotional experience of climate change due to their proximity to the subject matter and the energy they bring to the cause (e.g., Eide and Kunelius, 2021; Pickard, 2019a; Pihkala, 2022a). This is in part because of a common assumption that action is an antidote to difficult climate emotions, which is, however, a partly contested assumption (for discussions, see, e.g., Coppola, 2021; Wray, 2022). Recent scholarship has explored the particular experience of climate emotions among young people (Hickman et al., 2021) and young climate activists (e.g., Bowman, 2019; Bowman and Pickard, 2021; Holmberg, 2021; Pickard, 2021; Piispa and Kiilakoski, 2021). However, much remains to be studied in relation to various emotional dynamics and the ways in which contexts influence them.

In this article, we study climate emotions and the complex dynamics related to them through interviews with environmentally active young people (aged 18–31) in the United States (USA) and Finland. In the context of our study, we use the terms “environmentally active young people” and “activists” rather synonymously. However, we would like to acknowledge that these terms can take on different meanings in different contexts. The term “environmentally active young person” is used to describe a wide range of people who are involved in environmental work but may not identify with the term activist that can be somewhat stigmatizing among some audiences. We define activist broadly in our study as an individual who takes some kinds of environmental action through a variety of means including direct action, research, and organizing. For the reasons of brevity, we sometimes use the wording “climate activists” in this article to refer to all the participants.

We chose to interview this population for several reasons. First, young people are a very important social group, whose role in efforts to shape climate politics is strong. Second, we are interested in the particular ways of climate emotions manifest in people who are both environmentally knowledgeable to some degree and active. Third, we are interested about possible manifestations, which bring difficulties for the wellbeing and action capacity of young people. Our study thus contributes to the scholarship about the relationship between climate emotions and action, but we are not focusing only on any instrumental role of emotions: we are interested in the emotions themselves and their various roles and manifestations.

We were curious about the dynamics between these identities and climate emotions. We were particularly interested in understanding the general emotional landscape of these young active people, how dynamics of responsibility and feelings of inadequacy emerge, and the ways in which these young active people cope with the various climate emotions they experience. We analyze the interviews and engage in interdisciplinary reflection (for interdisciplinary research, see, e.g., Scanlon et al., 2019). This combination of empirical and theoretical methods allows us to make in-depth observations, even though the results cannot be generalized broadly due to the rather small number of interviewees and the certain differences in the interviews between countries.

We are also interested in the cultural and social dynamics in these two countries. The USA and Finland are both wealthy countries, although there is much economic inequality especially in the USA (see, e.g., Berg, 2019). Both are Western countries, but the USA is a global superpower and Finland is a small nation in Northern Europe. There is a long history of climate activism in both countries (for Finland, see Huttunen, 2021; Piispa and Kiilakoski, 2021; for USA, see Sommer, 2015). Recent years have seen major developments in that activism, especially after the Autumn 2018 IPCC report that not only served as a kind of wake-up call for the climate crisis but also energized

many young people to mobilize for climate action (Ogunbode et al., 2020). There has also been increases in polarization around climate issues, although polarization is much stronger in the USA than in Finland (McCright et al., 2016). In a global survey of climate anxiety in children and young people, respondents from Finland and the USA did not differ extensively across a variety of emotions from powerless to optimistic to angry (Hickman et al., 2021). The structure of our research does not allow us to generalize our findings, but we aim to make observations about possible similarities and differences in the affective experiences of young active Finns and Americans. Our study contributes to the growing research about climate activists (e.g., Martiskainen et al., 2020; Eide and Kunelius, 2021; Huttunen and Albrecht, 2021; and the many articles in this theme number), but differs in the character of the participants: not all of them considered themselves the activists or took part in a certain activist organization.

In the following, we discuss three important aspects related to our study: framings of climate emotions, identities and felt social expectations, and being young in these times.

1.1. Framings of climate emotions

There are many possible framings of climate emotions, and the question of how “climate anxiety” is interpreted is closely connected to this issue. Some framings approach climate anxiety mainly as a problem for health and functionality, but scholars usually emphasize that climate anxiety can manifest both in adaptive and in maladaptive forms (Clayton, 2020; Hickman, 2020; Pihkala, 2020d; Coffey et al., 2021). Embracing a more expansive and nuanced understanding of climate emotions beyond the conventional good vs. bad thinking about emotions is important for navigating the uncertainty and complexity that comes with a changing climate.

Many terms have been used in the research about major affective dimensions of climate change. Glenn Albrecht coined the now well-known term “solastalgia,” which refers to the pain associated with the loss of ability to derive solace from a physical place that has been transformed beyond recognition (Albrecht et al., 2007). Many scholars have applied solastalgia to the impacts of climate change (for a review, see (Galway et al., 2019). More broadly, Albrecht has used the concept of “Earth Emotions” to refer to various kinds of eco-emotions (Albrecht, 2019). Much research has focused on “climate grief”: the impacts of various changes and losses due to climate change (Cunsolo and Ellis, 2018).

Much like the physical impacts of the climate crisis that disproportionately impact countries and places that contribute the least to the phenomenon, affective impacts are both unequally distributed and experienced differently across individuals and groups (Lawrance et al., 2022). There are also complex dynamics related to the justice issues and privilege

when it comes to investigating climate emotions (e.g., Uchendu, 2022). Notably, indigenous people, who are particularly attuned to climatic changes due to their lifestyles experience climate emotions such as grief, sorrow, and solastalgia quite heavily (Cunsolo Willox et al., 2013; Middleton et al., 2020). Other factors that have an impact on the force of climate emotions include having an environmental activist identity (Hoggett and Randall, 2018; Nairn, 2019), researching environmental issues (Pihkala, 2020c), and having deep emotional connections with the region around oneself (e.g., Marshall et al., 2019; Eide and Kunelius, 2021).

Efforts have been made by many climate emotion scholars to emphasize the importance of not broadly pathologizing climate emotions such as eco- or climate anxiety that can be understood as being rational and even healthy to respond to an understanding of the current state of the planet (Verplanken and Roy, 2013; Hickman, 2020; Pihkala, 2020a). Furthermore, some scholars suggest that the experience of phenomena such as eco-grief or eco-anxiety is correlated with a healthy understanding of climate change (Cunsolo et al., 2020). Terms such as Kurth (2018)’s “practical anxiety” have been adopted by the climate emotion scholars to emphasize the constructive potential of conventionally negatively coded emotions such as anxiety (Kurth, 2018; Pihkala, 2020a,b; Kurth and Pihkala, 2022). Relatedly, efforts have been made to emphasize the problematic nature of taking a conventional individualistic approach to understanding and addressing the emotional responses to climate change (Kałwak and Weihgold, 2022). Scholars emphasize that social dynamics shape climate emotions in profound ways (González-Hidalgo and Zografos, 2020; Neckel and Hasenfratz, 2021; for young climate activists and different social dynamics, see Prendergast et al., 2021).

1.2. Identities and felt social expectations

Climate emotions and the ways in which people feel, understand, and express them exist within a cultural context. Beyond simple differences in meaning and understanding of different emotions, the extent to which certain emotions are culturally acceptable to express and acknowledge differs across cultures (Mesquita et al., 2016). In general, Western, industrialized nations promote a culture in which open dialog about difficult climate emotions such as grief or sadness is discouraged through formal and informal social mechanisms (e.g., Weintrobe, 2021). As a result, it can be challenging and uncomfortable for people raised in these emotionally stunted contexts to openly and freely express and engage in conversation about these difficult emotions. Certain emotions such as guilt and shame are both intimately tied with one’s sense of self and highly influenced by those around one and are, therefore, more challenging to face (Aaltola, 2021). Many scholars have observed that gender has a role in recognition of climate emotions (e.g.,

Hyry, 2019; Galway and Beery, 2022), and generally, it is well-known that emotion norms and feeling rules in societies often have gendered dimensions (for observations about this and climate emotions, see, e.g., Du Bray et al., 2019).

There has been an extensive amount of research conducted to explore the development of ecological identities and the impact nature connectedness has on these identities. Many scholars have developed scales for measuring environmental identity (e.g., Clayton, 2003) and they have been revised overtime (Clayton et al., 2021). Numerous studies have been conducted to understand what influences one's environmental identity (for environmental activists and these dynamics, Samsten, 2019). It has been found that an ecologically oriented moral identity affects both behavior and eco-emotions (Jia et al., 2017).

Many kinds of social dynamics influence environmental behavior, both inside groups and between groups. Ingroup-outgroup dynamics have been studied by the psychological researchers from various fields (e.g., Dono et al., 2010). Whether intentional or not, informal codes of ethics about expected behavior from others in the group and even those outside the group often exist within environmentalist spaces (e.g., Lacasse, 2016). Examples include sentiments such as “it’s frustrating that X does not recycle” or “X is just something you should do” (e.g., Chan and Bishop, 2013). In his interview-based study, Berglund (2019) illustrated this dynamic of expectations for oneself and others in Swedish environmental activists aged 19–29 who felt climate anxiety both “from the interaction between the understanding of the problem and the others, whose change was described throughout as too slow” (Berglund, 2019, p. 34).

Furthermore, failure to achieve what one feels is the necessary or expected type of behavior can lead to the feelings of inadequacy. Many environmentally active people, particularly those in the Global North who understand the ways in which capitalism and other systems of oppression and exploitation and, by association, their ways of life as participants in societies in the Global North contribute to climate change, feel a sense of responsibility tied to their identity (e.g., Piispa and Kiilakoski, 2021, p. 9–10). Diversion from these expectations and a perceived failure to uphold one's responsibility can elicit emotional responses such as disappointment, frustration, or even guilt (Kleres and Wettergren, 2017; Bryan, 2022).

Several scholars and writers have raised critical observations about the dynamics of privilege and race in discourses about climate emotions. In response to the reactions to and questions about her 2020 text, *A Field Guide to Climate Anxiety*, related to the “whiteness” of the topic of climate anxiety, Sarah Jaquette Ray raises the question of whether the predominance of white folks resonating with the feelings of climate anxiety is related to the history of existential threats that experiences by Black and brown people in the USA throughout history that are unrelated to climate change (Ray, 2021, p. 2). Mary Anaise Heglar writes about the idea of “existential exceptionalism” associated with

viewing the climate crisis as the greatest existential threat to humanity given that “history is littered with targeted—but no less deadly—existential threats for specific populations. For 400 years and counting, the USA has been an existential threat to Black people” (Heglar, 2019). Environmental justice advocate and writer Wanjiku Gatheru speaks specifically to the experience of climate emotions among people of color and more broadly about the history of racism and exclusion in environmentalism: “people of color experience climate grief more deeply than white people, because we are disproportionately affected by the climate crisis and have a long history of racial terror. We also feel grief being forgotten in a movement tasked with solving the biggest threat to our lives” (Gatheru, 2020).

This connects to our study insofar as these kinds of dynamics can shape the reactions of majority folks in the West and participants in our study are mostly White. For example, the scholars of psychology such as Orange (2017) have suggested that climate change can cause deep feelings of guilt and shame, which are interlinked with the feelings about colonial injustices, and indeed, different emotional norms about climate guilt have been observed among climate activists in North and South by empirical scholars (e.g., Kleres and Wettergren, 2017).

1.3. Childhood and youth shaped by the climate crisis

Young people in the contemporary world have grown up amidst rapidly intensifying climate impacts. Specifically, since 2018, climate awareness and debates in societies have increasingly shaped their lifeworlds (IPCC, 2018; Ogunbode et al., 2020). While there is naturally a great variation in contexts and people's experiences are varied, in many ways, contemporary youth are “a climate generation,” as for example, Ray (2020) has called them (for a review of youth perceptions of climate change around the world, see Lee et al. (2020); for a critical review of research on youth climate activism, see Neas et al., 2022).

The young people who are the subject of our study have thus been exposed, in various degrees, to climate issues for a long time. For technical reasons, we could not include under 18-year-olds in this study, but emerging research conducted among that age group shows that they indeed experience many kinds of climate emotions (e.g., Hickman, 2020; Feldman, 2021; Halstead et al., 2021). Many of these young adults have commented that they feel that older adults are not taking their climate emotions seriously enough (e.g., Diffey et al., 2022). Thus, by focusing on climate emotions in our research, we at the same time wanted to give at least to these young people an experience of adults being very interested about their climate emotions. We did not regrettably design the study together with young people, but the main author is still young herself and empirical data about youth experiences and views shaped the design of the study.

Youth studies and sociology are increasingly investigating the dynamics around climate change, and scholars point out that climate change is a major factor shaping childhood and youth today (see, e.g., [Pickard, 2019b](#)). While the authors of this article are not sociologists or trained in youth studies, we hope to contribute to these fields by investigating the lived experiences of young environmentally active people and the complexities of their climate emotions. Identities and social expectations (see previous section) are very powerful for youth in relation to climate change. Climate change brings up the changes and challenges related to social dynamics (e.g., relationships with parents and relatives and between youths with differing opinions; see, e.g., [Dupuis-Déri, 2021](#)). Climate emotions are present throughout all these dynamics.

2. Materials and methods

2.1. Research questions

Our main research questions in the study are as follows:

1. What does the climate emotions “landscape” look like for young, environmentally aware and engaged Finns and Americans? On the basis of this limited data, what kind of observations can be made about cultural and social factors which impact climate emotions in each country? Can there be discerned differences between the cohorts related to climate emotions?
2. What kinds of felt social expectations and identity factors seem to shape these young people’s climate emotions, especially in relation to sense of duty and feelings of inadequacy?

2.2. Procedures and measures

We used semi-structured interviews to explore the participants’ climate emotions through a variety of lenses. The questions [[Appendix A](#) (USA questions) and [Appendix B](#) (Finland questions)] aimed to provide data for the assessment of our main research questions through understanding participants’ involvement with environmental issues, sources of environmental knowledge, sources of climate emotions, connections between and among different climate emotions, coping mechanisms for these climate emotions, and perceptions about the future—personally and more broadly. We did not strictly ask every participant every question but rather allowed ample space for the exploration of emergent themes as they related to climate emotions. The Finnish version of interview questions was adapted further through discussion and cooperation between Author 1 and Author 2. In the Finnish version, even more attention was given to the specific dynamics of climate emotions and coping, because that was deemed to

be especially important for advancing research following the conclusion of the interviews in the USA.

We also used an emotion word survey adapted from a study conducted by Krista Hiser and Matthew ([Appendix C](#)) ([Hiser and Lynch, 2021](#)). The survey aimed to provide broad insight into how participants were feeling about climate change. Its results helped to guide the interviews insofar as it was possible to ask about selections and omissions of recognized climate emotions. The emotion word survey for the Finland study was translated to Finnish by Author 1 using Google Translate and assistance from Author 2 and other Finnish speakers. We asked the participants to review the survey two times: first, to highlight all words that resonated with them related to climate change and second, to highlight the top five words.

All participants received information about the study before agreeing to participate and provided verbal agreement to participate. All interviews were recorded with the consent of each participant using *Zoom* recording technology and were then transcribed using transcription software from *Otter.ai*. In the USA study, the length of interviews ranged from 22 to 61 min. In the Finland study, the length of the interviews ranged from 37 to 97 min. The discrepancy in interview length between the two studies is attributable partly to the longer list of questions and partly to the fact that Finnish participants were interviewed in their second language and, therefore, needed additional time to express themselves. In both studies, informed consent was guaranteed for participants through the provision of explanations of the intentions, execution, context, and funding behind the study. Furthermore, care was taken to ensure that all principles of the Declaration of Helsinki were followed throughout the entire research process. For the gathering of the USA data, an IRB approval was necessary and it was acquired; for the Finnish data, an official IRB statement was not required according to the Finnish research guidelines.

The positionality and privilege of the authors is discussed in [Appendix E](#).

2.3. Participants

Participants and basic information about them can be seen in [Table 1](#).

The USA sample ($n = 14$) was recruited *via* listservs of environmental organizations at the University of Vermont (UVM) in Vermont, USA, in October 2020. The Finland sample ($n = 9$) was recruited *via* word of mouth at the University of Helsinki in Helsinki, Finland and in environmental activist groups in the Helsinki Capital region in January 2022. All of our interviewees reside in the Global North (the USA and Finland) which is an important factor when considering their positionality within the context of the climate crisis and movement.

TABLE 1 Summary of participants.

Participant	Pseudonym	Country	Age	Gender	Type of engagement
A	Amy	The United States	20	Female	Member of the Sunrise Movement
B	Becca	The United States	21	Female	University environmental publication editor
C	Carly	The United States	20	Female	Member of divestment-focused campus organization
D	Deb	The United States	20	Female	Member of campus environmental group related to communication and advocacy
E	Evan	The United States	21	Male	Member of two environmental groups related to advocacy and sustainable transportation
F	Fred	The United States	19	Male	Member of campus environmental group related to sustainable lifestyles
G	Gretchen	The United States	22	Female	Member of environmental group related to sustainable transportation
H	Harper	The United States	20	Female	Member of campus environmental group related to sustainable lifestyles
I	Ingrid	The United States	19	Female	Member of divestment-focused campus organization
J	Joan	The United States	18	Female	Member of divestment-focused campus organization
K	Kelly	The United States	21	Female	Member of campus environmental group related to sustainable lifestyles
L	Lauren	The United States	21	Female	Member of the Sunrise Movement
M	Michael	The United States	21	Male	Member of environmental group related to sustainable transportation
N	Nicole	The United States	20	Female	Member of campus environmental group related to communication and advocacy
1	Sara	Finland	24	Female	Student of aquatic ecology, researcher
2	Aurinko	Finland	28	Non-binary	Freelance sustainability expert, employee of non-profit environmental organization, Master of Environmental Change and Global Sustainability
3	Vilho	Finland	28	Male	Intern of at environmentally focused public foundation in Finland, Master of Environmental Change and Global Sustainability
4	Lida	Finland	24	Female	Involved in the religious, ecumenical, interfaith space, also with environmental themes
5	Eetu	Finland	25	Male	Agricultural specialist, Master of Environmental Change and Global Sustainability
6	Kerttu	Finland	21	Female	Member of Elokapina (Extinction Rebellion)
7	Liisa	Finland	26	Female	Laboratory assistant at environmentally focused museum in Finland, Master of Environmental Change and Global Sustainability
8	Juho	Finland	31	Male	Member of Elokapina (Extinction Rebellion)
9	Meri	Finland	28	Female	PhD student of Environmental Education

In the USA study, the criterion for selection included the following: participation in one or more environmental organizations and being a member of an age group that has been called *the Climate Generation* by Ray (2020): being born between the early 1990s and early 2000s. Participation in one or more organizations was self-assessed and self-reported. In 2020, this meant that the oldest participant—born in 1990—could be 30. In the Finland study, the criterion for selection included the following: involvement in environmental work in some capacity (research, studies, and activism) and being a member of the same age group with the USA participants, which in 2022 meant the oldest participant—born in 1990—could be 32. Collectively, participant ages ranged from 18 to 31

with the USA participants ranging from 18 to 21 and Finland participants ranging from 21 to 31. Participants have a range of levels of previous engagement with and knowledge of climate emotions—with some engaged in explicit study of the topic and others with no previous engagement or even serious thought. All participants were actively involved in the environmental work, and thus, they do not represent an average population in relation to environmental attitudes and knowledge. Given that all participants are highly educated, we are missing many lived experiences and a range of identities and social locations.

Burlington, Vermont is the most densely populated place in Vermont and houses the largest university in the state. Among other USA states, Vermont is more politically liberal in general

and does not reflect the average American. This should be taken into the consideration for understanding the context from which participants come.

2.4. Analysis

Data were gathered from the two sets of interviews and climate emotions surveys. The interviews were analyzed through several iterations of coding using both inductive and deductive analysis of qualitative data. The first iteration was broad and more inductive, primarily focused on gathering a wide scope of emergent narratives from data. We began by organizing data into two broad categories: *background/contextual information* and *emotions*. *Background/contextual information* was broken into two subcategories: *description of nature of environmental involvement/work* (activists, students, and others) and *sources of climate/environmental knowledge*. A subheading of *sources of climate/environmental knowledge* was *influential actors or experiences in shaping environmental identity, knowledge, etc. including childhood experience*. The *emotions* category worked to identify the presence of emotion either explicitly (I feel/felt...) or implicitly: Author 1 made the observations about emotional tones based on the body language, verbal style, and choice of words by the respondents. However, the observations of implicit emotion were treated differently in data analysis and only as potentially indicative. Overall, the authors do not aim or claim to define exactly what all emotions the respondents are feeling: the aim is to make the observations of emotions and related dynamics, based on what the respondents declared. Special notes were also made about any discussion of hope, but no further analysis was done.

The second iteration was more narrow and deductive. It focused on the three main research questions: dynamics of climate emotions, identities, and felt social expectations (specifically as they relate to climate emotions) and coping mechanisms (especially for climate emotions). Coping mechanisms were further categorized based on the results from the study by [Ágoston et al. \(2022\)](#). Although Author 1 led the analysis, close collaboration occurred throughout the entire process between both authors through continuous dialog and shared *Google* documents. Author 1 made the coding using a combination of inductive and deductive styles and asked Author 2 to check especially the borderline cases. The following is an example of coding: emotions: implicit or explicit.

3. Findings

As [Table 2](#) displays, we will show our findings in three sections.

The study also resulted in a rich data about coping, which cannot be fully discussed here due to space limits, and thus,

TABLE 2 Contents of findings section.

3.1. Complex dynamics of climate emotions
3.1.1. The broad landscape of climate emotions: grief, anger, and guilt
3.1.2. Sense of responsibility
3.1.3. The question of “enoughness”
3.2. Identities and felt social expectations
3.3. Comparisons between Finnish and American participants

coping dynamics will be the major topic of a further research article by the authors. In the following, only a few references to coping themes will be made to show the links between them and the topics discussed here.

3.1. Complex dynamics of climate emotions

It's just this feeling of kind of feeling everything. And sometimes the idea of being positive and negative feeling at the same time is - I'm just feeling like exploding. Aurinko (Non-binary, 28 years, Finland)

The interviews created an open space for the participants to explore and discuss their climate emotions freely. Each conversation was laden with the descriptions of emotions. Interconnections between and among emotions were abundant. It was often challenging, if not impossible, to completely separate the emotions from each other. Participants' awareness of and ability to describe the complexity of their emotional experiences varied. Participants also displayed differing levels of comfortability with the ease of expression of various emotions.

Although each participant's personal emotional landscape was unique, analysis revealed that certain emotional themes were most salient among participants. Grief, anger, and guilt were very common. Broadly, the participants expressed many emotions related to a sense of responsibility, emotions related to feelings of “enoughness,” and emotions related to uncertainty.

[Appendix D](#) displays an overview of emotion words selected by the participants altogether. [Table 3](#) provides a visualization of key emotions from pre-interview surveys. It is to be noted that we observed climate emotions also in the interviews, so this table does not include all the emotions found in our study.

3.1.1. The broad landscape of climate emotions: Grief, anger, and guilt

It is important to acknowledge the range and diversity of climate emotions experienced and discussed by the participants.

TABLE 3 Visualization of emotions from pre interview surveys.



It should be noted that our analysis in this paper heavily focuses on difficult emotions, but also many other kinds of emotions were connected with environmental issues by the participants. In the following, we lift up the examples of prominent feelings of overwhelm, sadness, anger, frustration, and guilt among the participants. Other emotions the participants connected to environmental issues included disappointment, fear, anxiety, hopelessness, shame, uncertainty, and hopefulness. They displayed many affective tones of motivation, determination, and resolve.

Feeling overwhelmed emerged as a salient theme for participants although notably, the English word does not translate very well into Finnish. Some participants, such as Gretchen (female, 22 years, the USA), felt overwhelmed by their perceived inadequacy, given a lack of tools and scope of the challenge. Similarly, Aurinko (non-binary, 28 years, Finland) expressed feeling a lack of power as an individual as “maybe this feeling off this kind of like ahhh how can we like—I understand that as an individual I don’t have such power that I could change all these things, but like, even as communities or like with these, like in this system that is so fixed to be so damaging, like, how can we actually like to do any change?”

Numerous participants experienced sadness and grief, which supports the growing research about the prominence of climate grief and sadness among people (Ojala et al., 2021). These sad feelings were often connected to other emotions, such as feeling powerless and/or anxious. Sadness was linked with both changes that had already happened and anticipatory losses, again reflecting the results of previous research (e.g., Randall, 2009). A telling example is how a participant from the USA talked about the sadness associated with changes in landscapes:

I guess, talking about like, feeling sad, because that’s a big word. I think that I am repeatedly going through these stages of like grieving around our environment. I have so many memories from my childhood and even pretty recently, I’ve just like, moving through these big, beautiful, like, landscapes of the wilderness that just like took my breath away, and to think about them changing so quickly. If I ever have kids like maybe they won’t be able to see that. It’s just like so profoundly heartbreaking, I think. Becca (female, 21 years, USA)

As seen in the quote, the participant muses about a process of ecological grief. They think about their childhood and the changes that have already happened, which brings into their mind also the possible experiences of future children, who might experience an even more changed environment. Thus, reactions to already-happened losses are linked with anticipatory grief and fears or worries about future children (For scholarly literature about processes of ecological grief, see, e.g., Jones et al., 2021).

Another participant from the USA describes the felt changes in Glacier National Park and strongly brings into fore the feelings of powerlessness to stop the changes. They also link that with feeling disconnected:

“It makes me feel sad that it’s going away, and it doesn’t seem like there’s a lot we can do. And then I think I feel just like disconnected as well.” Michael (male, 21 years, USA)

For Finns, topics of ecological grief included the eutrophication of the Baltic Sea and the lack of old growth forests. Some participants discussed difficulty with expressions of sadness and grief. A Finnish activist, Kerttu (female, 21 years, Finland), described the feelings of sorrow associated

with the changes in the natural world and also described tension around expressing it because “it feels like there are things that it’s more appropriate to have feelings about” and “I think that being frustrated is easier than sorrow because it’s so vulnerable somehow.” The quote shows how the participant is thinking about emotion norms and different audiences. They think that being frustrated or worried is more socially acceptable and point to the difficulty of showing vulnerability.

Overall, many participants discussed the feelings of anger and frustration. Some participants spoke of them as being very accessible emotions when compared to other emotions such as guilt or even disinterest. Evan (male, 21 years, the USA) described frustration based in inaction on climate despite the fact that many solutions are readily available.

Sara (female, 24, Finland) explained how expression of anger is easier to express than to guilt and pondered that it is difficult to confess that one has flaws:

I think anger is easier to express than, maybe. I think guilt is something that I think this is like the first time I have really actually liked, like, really expressed, that I feel guilty about, but I know that I have been feeling guilty also. But it’s like, I think it’s like the first time that word has come up. So that’s maybe more difficult to express.

I guess it’s like difficult because it’s like, it’s easier always to say I’m such a good person, and I’m doing everything I can than to say, or than to confess that I’m actually not always the most perfect person. Like, yeah, I guess it’s not like something that’s easy for me to always like, say, yeah.

This pondering shows many things, such as the previous lack of incentive or chances for the person to think about guilt in an environmental context. It also shows the difficulty of self-admitting guilt, which is also an important insight in relation to surveys about climate emotions. It may be that climate guilt and its close emotions such as shame are not always noticed in surveys, because people fail to self-recognize them (cf. the results by Hyry, 2019; Swim et al., 2022). Overall, many participants engaged in vivid discussions about climate guilt. A participant in the USA discussed collective aspects of guilt associated with their way of life as an American:

Yeah, I think being in the US like, I feel a huge sense of guilt because of just like our normal way of living like I was talking about earlier. Like, it just feels like we consume at such a like high rate that’s so unnecessary, but like, um, on a general like scale like no one really seems to find it, like, problematic. So, like, that’s probably that, like, just the fact that like the US is like such a huge global emitter and like, American citizens really just like don’t care at all makes me feel really, really guilty. Deb (female, 20 years, USA)

Thus, the participant also reflected on the conflicting feelings generated by various reactions that people have. Liisa (female, 26 years, Finland) linked collective climate guilt to a kind of species-level guilt:

“I feel guilty, I guess. But like, on behalf of, like, humanity, I guess.”

This reminds of the discussions of “species shame” by climate emotion scholars (Jensen, 2019).

Many causes for individual climate guilt were mentioned. Sara (female, 24 years, Finland) described feeling guilt associated with thinking they should be more environmentally active or make more environmentally friendly consumer choices. Evan (male, 21 years, USA) described how they would feel guilt if they were not involved in environmental work:

“I would feel guilty if I didn’t take the environmental path.”

They also highlighted “moral duty” in this reflection, which is a theme we will discuss at length later in this paper.

Another USA participant described guilt related to wanting to have children:

But like, I still really want to have children and I probably will because like, yeah, I’m just I guess that’s just selfish, but I feel guilty about that. Thinking about that. I feel guilty. I feel guilty, but I still think like, yeah, I’m just going to enjoy my life because it is what it is. And I’m like well, not my fault. But like, I think everyone can kind of say that like, not mine. Yeah. So yeah, it’s hard. It’s a very difficult issue. Michael (male, 21 years, USA)

This theme of whether to have children because of the climate crisis is receiving growing attention, and the issue clearly causes complex and difficult feelings (Schneider-Mayerson and Leong, 2020; Hickman et al., 2021; Schneider-Mayerson, 2022). Participants’ internal struggle and conflict surrounding the question of whether or not to have children given the state of climate change suggest a consideration of the moral consequences and it reflects a desire to live according to one’s values. Given that these participants are knowledgeable about climate change and other environmental issues, they are considering whether or not it would be responsible to bring children of their own into the world. It is possible that for some participants, this consideration serves as a kind of coping mechanism to deal with the feelings such as guilt and grief. If they do not have children of their own, these feelings may be relieved at least in part: they may feel less guilty because they are not increasing carbon emissions through having a child, and they may feel less anticipatory grief because they do not have their own children who they believe will suffer

in the future because of climate crisis. Although Meri (female, 28 years, Finland) spoke candidly to her acceptance that she would not have children of her own, the rest of discussions related to children were riddled with uncertainty. This internal, moral conflict seems connected to a plethora of emotions among the participants.

3.1.2. Sense of responsibility

I can't not do this work because I'll spend the rest of my life like, thinking about like, I didn't do anything to solve humanity's biggest challenge and I just like stood idly by. Evan (male, 21 years, USA)

A strong theme in the responses of the participants was a sense of responsibility, an issue intimately linked with the topic of guilt discussed above. Other closely related affective issues include feeling “obligation” and “moral duty.” In total, 13 out of the 14 American participants and five out of the nine Finnish participants indicated either explicitly or implicitly that they had experienced the feelings of responsibility, obligation, and/or moral duty related to the environment and climate change. It should be kept in mind that the respondents are environmentally aware people. These feelings were connected to many experiences including feelings of privilege, perceived seriousness of the various environmental crises, capacity, and, therefore, necessity for action. In general, participants appeared to be comfortable expressing and discussing feelings related to a sense of responsibility, suggesting that these feelings are accessible.

As mentioned above, feelings of responsibility, obligation, and/or moral duty were connected to many experiences, which can be understood as different rationales or justifications for why one feels a sense of responsibility. Many reported being awakened to the urgency of the crisis and their own responsibility through important experiences such as seeing a climate documentary film like Al Gore's *Inconvenient Truth* or becoming stricken by a climate science report, most notably IPCC's 2018 *Special Report: Global Warming of 1.5°C*.

Amy (female, 20 years, the USA) described the feeling responsible for being engaged with the climate issues because of one's possibilities as an American citizen and because of being part of the system, “even though we didn't start it.” This same participant goes on to describe rationales for responsibility including having “the opportunity to learn about it and be educated about it” and it being “a privilege that I do know about it, and that I have that like position to do something about it.”

Another theme included concern for future generations specifically in the context of one's own children. In this context, Kerttu (female, 21 years, Finland) described that feeling like action is simply necessary “as a responsible human being.” Some participants including Fred (male, 19 years, the USA) describe

having a sense of generational responsibility to act. Others, such as Juho (male, 31 years, Finland), highlighted their wealth and related privilege as a reason they feel responsible. Aurinko (non-binary, 28 years, Finland) described an entanglement of identity and moral duty in addition to obligation to future generations articulating that “it's just the thing we have to do for the other and coming generations and other species.”

A significant theme tied to a sense of responsibility was related to felt pressure and especially a kind of temporal urgency. Gretchen (female, 22 years, the USA) spoke to this saying that “I think just being the age we are in seeing the effects already, there's like a very intense feeling of pressure to get things done very fast and every day that there isn't something that's changing for the positive in favor of climate mitigation. Like we're losing, though.” Kelly (female, 21 years, the USA) talked about an overall sense of feeling like they “should” be doing something practically all the time, such as signing a petition or donating to an environmental fund and becoming “more involved” because “these things are happening.”

These feelings of pressure and obligation to act link to feelings around questions of adequacy. Ambiguous language such as “very fast” and “more” in the context of environmental work contributes to a sense of inadequacy that we will explore in the next section.

3.1.3. The question of “enoughness”

Because, like, the more you learn, the more you feel like you need to like, do as much as you possibly can, or else you're not doing enough. Evan (male, 21 years, USA)

Most of the participants reported some kinds of feeling of “not being enough.” Feeling words related to this include inadequacy, powerlessness, hopelessness, and helplessness. In total, nine out of 14 American participants and eight out of nine Finnish participants either explicitly or implicitly expressed that they had experienced the feelings of inadequacy, powerlessness, hopelessness, and/or helplessness with regard to the climate change and other environmental challenges.

Many participants expressed feeling like they were powerless to act in the face of climate change and that even the actions they do take, whether that be through activism or everyday life, sometimes feel too small, which leads them to feeling inadequate and inefficacious. Many expressions of feeling a lack of enoughness came in the form of rhetorical questions, such as by asking:

Is there anything I can even do like, is anything really going to change? Becca (female, 21 years, USA)

Expression of feelings related to not being enough seemed to come fairly easily for the participants. This testifies for the

commonality of these kinds of feelings among the participants. Furthermore, this may have helped in the case of Finns by the existence of a related emotional concept in Finnish language, “riittämättömyyden tunne.”

As mentioned in Section 3.1.2, a sense of temporal urgency played an important role in participants’ contextualization of their environmental efforts. Some participants employed rhetoric related to a perceived lack of time as reports such as the IPCC’s infamous “12 year report” lays out a “timeline that’s ticking away so quickly” according to Becca (female, 21 years, the USA) and a resulting sense of urgency creating a “crunch feeling of like, not having enough time” according to Amy (female, 20 years, the USA). This time-related pressure was also connected to feeling like one did not have the ability to act sufficiently in the face of the problem in the given timeline.

Some participants described a disconnect between (a) what they understand to be the immensity of the climate crisis and the power of the opposing forces, such as corporations and wealthy politicians and their supporters, and (b) their own perceived capacity to effect change. This affected their feelings of “not being enough.” Carly (female, 20 years, the USA) described sometimes feeling powerless in her activism “because it takes so much to do something, like get one university to take some money out of fossil fuels. So, it’s just like, I guess still a little bit powerless because like in the grand scheme of things, I am much more powerless than I am in that situation.” Becca (female, 21 years, the USA) described feeling inadequate compared to big corporations saying “oh my god. I’m just like a single person. And you hear about these big corporations driving our crisis. And you’re like, I’m doing what I can, but it doesn’t feel like enough.” Similarly, Kelly (female, 21 years, the USA) described feeling powerless after learning about how “the whole, like rich people, and like, billionaires are the ones that are like causing this and like, they’re the ones with all the power.” Vilho (male, 28 years, Finland) reflected on how his attempts to take individual environmentally friendly actions such as recycling sometimes feel meaningless when he looks at how many people are not taking actions: “it just makes kind of makes you feel kinda like helpless. Like, here I am, like thinking about all the individual choices, and then it’s just like, the impact is still very low.” Liisa (female, 26 years, Finland) expressed:

I feel helpless because it feels like even though I try my best to live sustainably I know, it’s not enough in any way, you know?

These feelings of “not being enough” were connected to a variety of other emotions and issues including feeling overwhelmed, guilt, fear, distress, panic and a sense of responsibility, obligation, and/or moral duty. Thus, it was connected to basically all the issues that have been discussed above in Sections 3.1.1 and 3.1.2.

3.2. Identities and felt social expectations

We found that identities and felt social expectations played an important role in participants’ experience of climate emotions in this study. We found the aforementioned themes of feelings of responsibility and inadequacy to be an important underlying current within this theme as well, which we will expand upon in the Discussion.

Social expectations related to common Western norms for emotional expression emerged as a prominent dynamic among participants’ emotional landscape, especially for Finnish participants; also, the changes in our study design for the Finnish part made these themes closer to participants. Several Finnish participants spoke very candidly about the ways in which Finnish culture discourages open discourse on feelings and particularly “negative” feelings. Aurinko (non-binary, 28 years, Finland) expressed that:

Maybe in general, negative feelings are not so like, welcome in our culture or like in that way.

Another Finnish participant, Liisa (female, 26 years, Finland), mentioned different subcultures and explained that:

Finns in general don’t discuss much... Yeah. So I’m a Swedish speaking Finn¹. So I guess we or our culture is quite the same. But I guess we are a bit more open about discussing feelings and such. But in general Finns don’t talk about feelings. Like maybe in the sauna, but other than that, not so much. Yeah. So then talking about climate related feelings is even harder, I would say.

Meri (female, 28 years, Finland) commented more broadly on social norms around emotional expression saying that in Finnish culture “reason is more important than emotion.” Overall, participants had certain expectations for themselves and for others related to climate/environmental behavior, which led to a variety of emotional experiences often related to dynamics of disappointment and frustration.

Another theme related to identities and felt social expectations was the idea of conflicting identities, which led to questions of belonging. For several participants, grappling with overlapping and contradictory identities was a source of tension. One Finnish participant’s parents are beef farmers. When describing how conversations with his parents go he said:

¹ Finland has a Swedish-speaking minority and Swedish is another of the two official languages in the country. Most of the “suomenruotsalaiset” (“finlandssvenskar” in Swedish) do speak also Finnish, but there are distinctive (sub)cultural characteristics among many of them.

If I'm saying that beef production is super bad, you shouldn't do it then there's a lot of arguments, of course, for my dad, especially that—well, like he's not saying that beef production is good for the environment but he's defending, of course, the beef production, for example. But we are not like fighting ever. We are just discussing. Of course, we are both getting a little angry at some point, Eetu (male, 25 years, Finland).

Another Finnish participant's (6) parents work for *Metsähallitus*, which describes itself as “a state-owned enterprise that provides natural resource services to a diverse customer base, from citizens to large companies” (www.metsa.fi). She reports that her parents see forests through the lens of economic use rather than intrinsic value like she does. In both these examples, the parents' work both engrained intrinsic environmental/nature values in the participants, while also being a source of conflict and emotion when the participants grew up, became educated, and formed their own environmental identities, which were often based more in sustainability and climate matters rather than a general appreciation for the natural world. We will discuss this theme of parental influences more in the Discussion.

Another theme related to the identities and felt social expectations was the idea of social expectations for behavior and related emotions. Sources of these felt expectations included people close to the participant (family, friends, and members of organizations), more distant people with vague identities (humanity, people in general), and people in power (politicians, leaders, and governments).

Several participants expressed concerns about observed “preaching” and moral purity within environmentalism, and common emotions tied to this were frustration and disappointment. Some participants reflected on their own tendencies to use preachy language. Sara (female, 24 years, Finland) described how when she talks to people who she feels do not care as much as they should about climate change she becomes a “kind of preacher” who “wants to make people feel like a bit guilty.” This brings also out the potential functional similarities in religious and environmental behavior and language, which scholars of religion have studied (e.g., Berry, 2013).

Vilho (male, 28 years, Finland) raised questions related to a sense of existential moral obligation as it relates to trying to change the opinions of others as it related to environmental matters:

Like, am I morally obligated to try to preach for people about the things that I consider to be right? Or should I just let people live their lives and like, maybe more follow this more like, democratic idea, like people have a right to make up their own minds?

There were also feelings of disappointment about others not caring. For example, Amy (female, 20 years, the USA) expressed that it is especially disappointing to hear people who will be minimally impacted by climate change debating its importance.

3.3. Comparisons between Finnish and American participants

Although there is not enough data to make rigorous comparisons between participants in these two countries, we want to offer some preliminary observations that could be further explored in future research.

In general, when the experiences of the participants from these two different countries are compared, it can be observed that there is much in common, as was to be expected since both countries are wealthy Western nations and the respondents are active people. Being American caused stronger ponderings than being a Finn, probably for many reasons: as the USA is a major superpower and the environmental impacts of “an American way of life” have been much discussed (e.g., Benedikter et al., 2015). Participants mentioned particular sources of difficult emotions, both regionally and nationally, and the different ecological circumstances in these two countries naturally shaped these dynamics; but the emotional impact itself had strong similarities.

It can be observed that American participants appear to feel a greater sense of responsibility related to the climate crisis than the Finnish participants. This possibly relates to the fact that the USA is much richer and arguably more responsible for climate related impacts than Finland based on the emissions per capita (UNEP, 2021). When the experiences of the participants from USA and Finland are compared in relation to feeling “good enough,” it can be observed that the dynamics were very similar, but in Finland, the existence of a related feeling concept—*riittämättömyyden tunne*, feeling not being enough—helped the participants to reflect on the issue more easily. American participants reflected more on the role of rich people in relation to climate impacts. This is possibly attributable to the fact that the difference in income and wealth is so much stronger in the USA. It should be emphasized, however, that the data to support this are limited and further exploration is needed.

In general, when the experiences of the participants from these two different countries are compared in relation to themes of identities and felt social expectations, it can be observed that there are naturally different feeling rules and emotion norms (Ahmed, 2014) in various cultures and in subgroups inside those cultures. The Finnish participants reflected more on these kinds of social and cultural dynamics, but also our study design contributed to that, and it seems that these dynamics are indeed important to include in studies on eco-emotions and climate

activism (similarly, e.g., Kleres and Wettergren, 2017). We could observe nationally significant themes, which impacted the participants, such as the role of forests as a key environmental issue in Finland, which causes a lot of eco-emotions (e.g., Kovalainen and Seppo, 2009), but the limited scope of our data prevents any strong conclusions about these dynamics.

4. Discussion

Our study brings more information about how strongly climate change affects the lives of many young people around the globe, in this case in the USA and Finland. Being young in these times involves the challenge of forming a relationship with climate activism, either by joining it in one way or another, or by trying to distance oneself from it (see also Dupuis-Déri, 2021). The participants of our study were young people who had decided to “stay with the trouble” (Haraway, 2016) of climate change: they were in many ways active in relation to climate politics, even though not all of them considered themselves activists. They were found to experience many kinds of climate emotions, and their comments revealed important dynamics related to identities and felt social expectations. It is important to note that the concept of “youth” is complicated (for insightful analysis on this and climate activism, see Neas et al., 2022), and we have explored climate emotions among only a narrow section of young people. Our participants were people motivated by climate emotions (for similar observations of emotion as motivating, see, e.g., Eide and Kunelius, 2021; Feldman, 2021), but we did not interview people whose emotions are connected with passive responses to climate change.

The results of this study highlight the interconnectedness and complexity of climate emotions, the identities, and social context, which contribute to and inform those emotions, and the coping strategies employed to address those emotions. The results demonstrated how feelings of obligation and “enoughness” are interlinked, and how they exist within a cultural framework and are upheld by complex dynamics of privilege. For many of these participants who recognize, to varying degrees, the privilege and embedded responsibility that comes with living in the emission-intensive societies of the USA and Finland, there was a sense that their privilege inherently makes their environmental work never enough. Although this sentiment was not expressed by all participants, an overall sense of deep seated obligation rooted in privilege and, therefore, lack of “enoughness” was strong.

Participants experienced a wide range of climate emotions. This was to be expected based on the earlier research (e.g., Pickard, 2021), but our results display an usually broad spectrum of emotional tones. Furthermore, the data provided many interesting and important insights about the complexity of them. In general, it appears that it was easier for the participants in this study to express and engage with those emotions that (a)

allow the feeler to maintain their distance (such as frustration or anger at a non-specific entity such as “government” or (b) are more socially acceptable (excitement, interest, in some circles even eco-anxiety) in terms of broad Western cultural norms about emotions. Conversely, it appeared more difficult for some to express and engage with emotions that (a) require the feeler to get close and intimate with a difficult emotion (such as grief or guilt) or (b) are less socially acceptable in terms of broad Western cultural norms about emotions (Ahmed, 2014). Similar to other potentially challenging or even taboo subjects, the extent to which eco-anxiety is engaged with and exists in the cultural consciousness of a society is a result of whether it is being discussed in the media and through other venues such as academia.

Environmentally engaged people such as these interview participants have certain similarities in their identities because they share many values and commitments (see also the important role of biospheric values for climate protesters in the study by Prendergast et al., 2021). Not surprisingly, they were shaped by the various influences from their parents; the role of parents on pro-environmental behaviors has been the subject of much research (see, e.g., Grønhoj and Thøgersen, 2009, 2017; Ojala and Bengtsson, 2019). Although parental careers were a cause of tension in the household for some participants, others were initially compelled to engage in environmental work because of a passion and love for the environment often fostered by a parent or other role model figure in their childhood. On the one hand, this supports once again the research that shows the prominence of these kinds of influences (for an overview, see Chawla, 2020). On the other hand, the findings show the complexity of gained influences from parents and other role models (cf. Ojala and Bengtsson, 2019) and point out the need for careful analysis of various psychosocial factors when making interpretations of the influences for youth environmental behavior (cf. Crandon et al., 2022). Our findings suggest that other socio-cultural factors, such as opinions around appropriate use of natural resources for profit, may be more influential than parents. However, there is not nearly enough data in our study to make any strong conclusions, and this issue should be explored further in the future investigations.

For many participants, their strong environmental identities generated by childhood experiences and adult role models were further solidified by a moment or a series of moments of awakening which are often remembered clearly due to their emotional intensity (cf. the description of such a “Waking-Up” process by Edwards and Buzzell, 2009). Then, two particularly salient moments of awakening for many participants, both Finnish and American, in this study were the viewing of Al Gore’s 2006 film *An Inconvenient Truth* and the release of the IPCC’s 2018 *Special Report: Global Warming of 1.5°C*. This speaks to the role culture and social forces play in shaping environmental identity and related emotions (for these dynamics and young

climate activists, see also [Feldman, 2021](#); [Prendergast et al., 2021](#)).

The results show that for participants in this study, a strongly felt obligation and duty to engage in environmental work exists as a motivator to both begin work initially and continue the work. The results also clearly show how prominent the issue of “not feeling adequate” is for these active people who, despite being actively involved in environmental work in various ways, feel as though their contributions to the “challenge” are not enough. We regard this as highly important, and it speaks to the influence of larger and complex structural societal dynamics. Despite the fact that our study participants were engaged in environmental work in various capacities, they still also struggled with the feelings of “enoughness.” Thus, the findings testify to the observed need to help people communally to accept their limits and resist the potential negative aspects of feeling inadequate. This is in line with the broader observations by earlier scholarship (e.g., [Prendergast et al., 2021](#)) about the need to find ways to sustain the emotional wellbeing of young climate protesters. For example, in her 2020 text, Sarah Jaquette Ray describes how understanding one’s “sphere of influence” can help to contextualize and ground actions and help one to understand the extent of and limitations to their agency and efficacy ([Ray, 2020](#)). It would be important to be able to feel also healthy contentment and pride for one’s environmental efforts ([Ray, 2020](#); [Pihkala, 2022b](#)). Our study provides, through its limited data, empirical support for the theoretical ideas brought forth by [Kahwak and Weihgold \(2022\)](#) about the ways in which individualistic approaches to understanding and experiencing climate emotions can be harmful for both people’s wellbeing and the climate cause, because individualized responsibility and constant feeling of inadequacy can lead to burnout or cynicism (see also [Hoggett and Randall, 2018](#); [Nairn, 2019](#)). We suggest that there is a possibility of collectivizing feelings of inadequacy in order to relieve some of the individual burdens felt by these active participants. This could help in strengthening the empowering emotional impacts of climate activism, which have also been often noted in studies about young climate activists (e.g., [Bowman, 2019](#); [Bowman and Pickard, 2021](#); [Eide and Kunelius, 2021](#); [Neas et al., 2022](#)).

Our results also have implications as regards terminology about climate emotions. The sense of duty and willingness to act clearly has affective dimensions, and in some studies, scholars have explored vocabulary for these kinds of feelings, such as “feeling an urge to do something” and caring ([Pihkala, 2022b](#)). The findings also suggest the need to have a feeling word for feeling inadequate in English, an equivalent for “riittämättömyden tunne” in Finnish.

We were able to make some observations about the cultural dynamics in Finland and the USA. Although there is not enough empirical data to support any broad interpretations of cultural factors, in general, Finnish participants seemed more comfortable talking about climate anxiety somewhat casually without too much raw emotion. This is in line with the

observations of Finnish eco-anxiety scholars that the terms eco-anxiety and climate anxiety are not as polarized in Finland as in some other countries ([Pihkala, 2018](#)). Overall, we noticed that various differences related to economic, cultural, and social factors between these two countries affected the climate emotions of this limited sample of young people.

4.1. Strengths, limitations, and possibilities/subjects/tasks for future research

Strengths of the study include its in-depth focus on climate emotions and its internationality (both the USA and Finland). Few previous studies have concentrated on climate emotions especially among young environmentally active people. Furthermore, an unusually wide array of climate emotions was explored. The design of and space created by the study allowed for subjects to engage with and explore emotions at a depth that is not possible in a survey-based study or shorter, more narrowly designed interview-based study. This gave the participants more self-knowledge and recognition. The analysis and discussion drew from a wide range of disciplines, thus providing a rich mosaic of climate emotion dynamics. Naturally, readers who are scholars from various disciplines might desire more discussion of the field that they represent; interdisciplinary is a multi-sided enterprise.

Further strengths include the observations about emotion dynamics that greatly affect these young people’s wellbeing and action, most significantly the prevalence of feelings of inadequacy. These observations support the recommendations of many writers about the need to provide support for young people, so that they could better balance their feelings of enoughness and inadequacy, and thus, our study can participate for its small part to policy recommendations.

There are some limitations of this study. A lack of inter coder reliability due to there being only an individual coder of the data opens the potential for coder bias, even though Author 2 checked especially the borderline cases. There is also a potential for bias with regard to discussion about climate emotions/unintentional influence from the study because of the pre interview survey administered to each participant. Although the use of the survey was intended to support the depth of potential conversation, it also lends to a potential for a priming of subjects to talk about emotions that they may not have acknowledged without the presence of the survey. Another limitation is the change of interview questions between countries. Although the change in questions allowed for more expansive and nuanced exploration through the interviews in Finland, it also weakened the ability to draw conclusions about the cultural conditions within the data.

Also, the homogeneity of participants (mostly white, mostly upper class, all educated) reflects a somewhat limited experience

as globally compared. Future studies should consider recruiting and including proportional numbers of non-white participants in order to properly analyze the role race plays within this topic (similarly Neas et al., 2022). As with all subjects of environmental work, environmental emotions impact different populations differently, and thus, careful investigation of these differences is important. Given the limitations of our studies, we could not contribute to this analysis.

Studies on topics such as this should be conducted also together with young people, allowing youth to participate both in the design and in the analysis phases. Regrettably, we could not contribute to this aim directly, but we hope that our results can inform for their part future participatory co-research with young people. Another limitation is the lack of participants under 18 years, which resulted from practical limitations of our study, and future studies should explore the complexities of climate emotions more also with under 18-year-olds.

Many themes for further research emerge from this study. Broadly, the complexity of the emotional experiences of these participants suggests a need for continued interdisciplinary exploration of this topic. The emotion words and tones explored in this study provide possibilities for nuanced studies. One potentially important theme for future research is the extent to which cultural conversations about different climate emotions, such as the one in Finland about climate anxiety, impacts people's relationship to, and experience of those emotions. More broadly, the ways in which various factors influence the experience of climate emotions are the continuously important areas for future exploration. More research is needed about the ways in which one's identity and related social expectations impact what climate emotions one experiences and how one engages with those emotions including coping mechanisms. In general, coping dynamics emerged as a strong and important theme in our research, and the authors plan to write another research article about it in the future. Young people clearly need societal and community support in developing constructive methods for engagement with climate emotions.

5. Conclusions

This study sought to understand the dynamics of climate emotions among 23 environmentally engaged people aged 18–31 in the USA and Finland through in-depth interviews and theoretical discussion. We found the emotional landscape of these participants to be rich and complex with many interconnections between and among a range of emotions. As in previous research, we found many experiences of a range of feelings and emotions such as sadness, anxiety, and worry among participants. Themes of responsibility, “enoughness,” and uncertainty and related emotions featured strongly among

the participants in both the USA and Finland. The influence of social expectations, identities, and identity politics emerged as an important factor in both populations both with regard to the ways in which participants experience climate emotions and the ways in which they cope with them. Our findings suggest a need for more research about feelings related to inadequacy and “enoughness” and about constructive ways to experience and manage these feelings.

Broadly, we interpret our results as supporting the view that climate emotions are something that one has to learn to live with and channel constructively, instead of trying to repress them or leave them behind. The prevalence of feelings of inadequacy among this limited group of young people supports the recent arguments about the need to provide young people tools to set their responsibility in context, in order to avoid negative consequences of the pressures that they feel.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Vermont IRB. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

IC and PP designed the study at the initiative of IC. IC conducted the interviews, coded the data, and wrote major parts of the first version. IC and PP co-designed the structure of the manuscript and co-developed the Finnish interview questions. PP checked especially the borderline cases and wrote sections of the first version. All authors edited the manuscript and revised it in the peer review process.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpos.2022.1063741/full#supplementary-material>

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