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Eco-Anxiety in “the Climate Generation”: Is Action an Antidote?

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Eco-Anxiety in the Climate Generation: Is Action an Antidote?

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ABSTRACT

Ecological (eco) anxiety, or climate anxiety, is an indirect psychological impact of climate change. It is a specific form of anxiety relating to the distress caused by our knowledge of negative environmental changes and can be used to describe the range of emotions and mental states derived from this knowledge. This interview-based thesis research seeks to understand if action through involvement with environmental organizations at the University of Vermont (UVM) serves as an antidote for eco-anxiety among members of *The Climate Generation*. The Climate Generation refers to people born between the 1990s and the early 2000s and is of particular interest as a population to study because it is the first generation whose members have spent their entire lives with climate change's effects, and it is the most well positioned to address the challenge and work towards building transformative solutions. Interview subjects for this research range from age 18 to age 21 and were recruited from six environmental organizations at UVM. This research seeks to expand upon the psychological components of climate response, resilience and action, elements less well studied than policy or ecological impact. The findings suggest that action through environmental organizations does serve as an antidote for eco-anxiety among members of the Climate Generation at UVM for a variety of reasons, namely in their ability to cultivate self and community efficacy. Further, the cultivation of emotional resilience appears to be a crucial component of this relationship.

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TABLE OF CONTENTS

INTRODUCTION

Personal Motivations

From a very young age, I had a fervent love for the natural world – climbing trees, exploring streams and rivers near my home, hiking with my family. As I grew up that love transformed into acute concern as I learned about the myriad crises facing the planet, from plastic pollution to deforestation to global climate change. In high school, I became obsessed with plastic waste and, in collaboration with a friend, urged my principal to ban plastic bottles from the school. It was an eye-opening experience which exposed me for the first time, but not the last, to the slog of bureaucracy and the resistance of institutions to change behavior. While working as a cashier at a grocery store during my senior year of high school, I started a personal campaign to urge customers to bring their own reusable bags rather than the single use plastic bags. As a teenager in New Hampshire my view of environmental problems was very narrow and lacked complexity. I lamented the actions of individuals and was hyper focused on the importance of personal responsibility when it came to environmental protection yet was unaware of the oversized role a handful of corporations play in the climate crisis and environmental degradation broadly. I was anxious but in a distant and rather naive way.

I began studying environmental studies during my sophomore year of college, taking ENVS 001: Introduction to Environmental Studies with Professor Amy Seidl during the fall of 2018. The course, which is structured around a set of grand environmental challenges including global climate change, is a prerequisite for all upper-level environmental studies classes at the University of Vermont (UVM). While taking the class, I quickly became overwhelmed not as a result of the workload or academic demands but rather because of the nature of the course content. Each day's lecture exposed me to a barrage of new information about environmental

problems that ranged from slightly unfortunate to debilitatingly depressing. On the debilitatingly depressing side of the spectrum, the 2018 report from the Intergovernmental Panel on Climate Change (IPCC) colloquially known as *the 12-year report* stands out in my mind to this day. This report details a set of possible scenarios for increases in global temperatures based on carbon emissions projections. The biggest takeaway of the report and what stood out most prominently to me was that we have 12 years to act on climate issues in order to prevent global warming of 1.5°C, a benchmark which many scientists believe will set in motion a cascade of irreversible climate impacts. Walking out of class that day, I was overcome with grief and anxiety. In 12 years, I would only be 30 years old, as the environment crumbled.

Prior to ENVS 001, I had been shielded from the harshest realities of climate change in large part due to my privilege and the environment in which I grew up – a middle class existence in New England. As a result, this sudden, vivid education on the seemingly endless ways human impacts were drastically altering the environment was alarming and paralyzing. In many ways I felt helpless and speculated on the merit of even continuing on this course of study given the toll it was taking on my mental health. I was craving meaning, purpose, and an outlet for processing the information I was receiving in class. I found that outlet through a newly formed group called the Climate, Communication, Advocacy and Literacy Laboratory (CCALL). CCALL surrounded me with a community of like-minded, similarly eco-anxious peers who, like myself, were looking for a way to act on the knowledge they were receiving in their ENVS courses. My involvement in CCALL became a way to ease my worries by processing with others and helped me continue to engage with the heavy content from my studies. As I continued to participate in CCALL, it came to my attention that others felt similarly to me about CCALL – that it kept them grounded, focused, and allowed them to process the realities of our world. At the same time, I

began to develop a vocabulary to articulate what I was feeling about climate change. I first encountered the word solastalgia in a lecture my sophomore year. From there I realized there was a whole field of study and community developing around the affective dimension of climate change. When it came time to select a thesis topic, I came back to the heart of my work as a young, anxious environmentalist and decided to research eco-anxiety among young people.

As an eco-anxious 21-year-old student and environmental activist, I have a vested interest in this research. I am working to further the understanding of the topic as to empower others to confront the climate crisis with resiliency. I believe that understanding the affective dimension of climate change, specifically that of eco-anxiety and the plethora of related conditions, is of critical importance when it comes to cultivating the emotional resiliency and community-efficacy necessary to confront the climate crisis.

Research Questions and Goals

The primary research question for this study is: does action through involvement with environmental organizations serve as an antidote for ecological anxiety and attendant psychological ills among members of the climate generation? In conjunction with an attempt to address this question, this research has two primary goals. First, I hope to highlight eco-anxiety as a problem among young people who are concerned about climate change and further its understanding as a phenomenon. Researchers are beginning to understand the psychological effects of climate change and my research will add to this understanding by drawing out and exemplifying established trends in the field through my interviews. Second, I hope to contribute to the understanding of whether action helps relieve eco-anxiety and, specifically why certain actions lead to empowerment, self-efficacy, resiliency and cognitive resonance rather than disavowal, cognitive dissonance, and hopelessness. I suspect that although there are differences

among subjects and activities, underlying themes will emerge that highlight action as an antidote for eco-anxiety.

Positionality, Privilege and Context

As a white, cis-gendered, college-educated person, I come from a position of extreme privilege. To disregard and ignore this reality would not only be a disservice to the integrity of this research but would be tone-deaf and white-washed. To *learn* about environmental degradation and the effects of climate change rather than to *experience* it firsthand is a privilege. Further, for climate change to be the greatest existential threat to my being is too a privilege.

As I was writing this thesis, Sarah Jaquette Ray, author of *A Field Guide to Climate Anxiety: How to Keep Your Cool on a Warming Planet*, published an opinion piece in *Scientific American* entitled "Climate Anxiety is an Overwhelmingly White Phenomenon." After publishing her book last year Jaquette Ray found that those who were responding to and resonating with her work were predominantly white. In her article, she grapples with the question of whether eco-anxiety is predominantly a white person problem because Black and brown Americans have felt a sense of powerless as a result of external threats throughout history.

Environmental justice advocate and writer Wanjiku "Wawa" Gatheru spoke to this in her Vice article "It's Time for Environmental Studies to Own Up to Erasing Black People" writing "[p]eople 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 in being forgotten in a movement tasked with solving the biggest threat to our lives." Many white environmentalists argue that climate change is *the greatest existential threat of our time*. Although it is threatening, it is dismissive to make this statement in light of the existential threats that have occurred and continue to occur on the daily for marginalized groups in our

society. Mary Annaïse Heglar describes this narrative as "existential exceptionalism," meaning that the climate crisis is unique in its impact on humanity as a whole, but "history is littered with targeted — but no less deadly — existential threats for specific populations. For 400 years and counting, the United States itself has been an existential threat to Black people." On this subject Jaquette Ray (2021) writes:

> *"The prospect of an unlivable future has always shaped the emotional terrain for Black and brown people, whether that terrain is racism or climate change. Climate change compounds existing structures of injustice, and those structures exacerbate climate change. Exhaustion, anger, hope—the effects of oppression and resistance are not unique to this climate moment. What is unique is that people who had been insulated from oppression are now waking up to the prospect of their own unlivable future."*

Like myself, the majority of my interview subjects are white and had largely received their knowledge of climate change indirectly rather than through lived experiences. Indirect education on climate change is a privilege and needs to be acknowledged when it comes to contextualizing the findings of my research.

I have provided this context not for the purpose of discrediting both this research and the shear existence of eco-anxiety among many people from a range of backgrounds. Rather, I offer it as a way to contextualize these findings and to acknowledge that privilege in environmentalism exists and manifests in a variety of ways. Further, I acknowledge this landscape in order to underscore the importance of weaponizing eco-anxiety for love and care for everyone rather than for wallowing in self-pity or angst. The reality is that climate change is real. Environmental

racism, injustice and eco-anxiety are real and interconnected. These overlapping realities demand a deep care for humanity and call for the cultivation of love for each other and the planet.

LITERATURE REVIEW

Climate Change

Anthropogenic climate change is caused by the accumulation of greenhouse gases (GHGs) in the atmosphere resulting in, among other impacts, an increase in global ambient temperatures.

Since the Industrial Revolution, mean global temperatures have risen in lock step with an increasing concentration of GHGs (United Nations, n.d). In its 2018 Special Report: Global Warming of 1.5°C, the Intergovernmental Panel on Climate Change (IPCC) found that in order to prevent catastrophic global warming of 1.5 °C, global emissions need to decrease by nearly 50% by the year 2030 (IPCC, 2018). Experts are now saying that global emissions must peak in 2020 and a reduction strategy must be established in order to achieve 2030 targets (McGrath, 2019). The impacts of climate change, which are physical, economic, social, and psychological are and will continue to be global. This research focuses on the psychological impacts, it is helpful to mention its other impacts for the purpose of framing and situating climate change as a grand, multidimensional environmental challenge.

Earth System Impacts

Failure to meet emissions reduction targets will likely result in irreversible and catastrophic consequences for the natural world and humanity. Among these consequences are increased temperatures on land and in surface ocean waters, increased intensity and frequency of climate-related disasters such as flooding, wildfires and drought, rising sea levels and biodiversity loss and extinction (IPCC, 2018). According to the United Nations Report on

Biodiversity, the current rate of global species extinction is 10-100 times greater than the average of the past 10 years, and a 2 °C warming will put 5% of species at risk of extinction (United Nations, 2019). Climate change reduces snowpack in some areas, causes decline in surface water quality in many areas, and disrupts fragile ecosystems including coral reefs and sea ice regions (USGCRP, 2018). Although the physical impacts of climate change are disparate across global regions, most land and ocean regions experience the impacts of a changing climate now.

Economic Impacts

Projections show that climate change will impact the global economy in a variety of ways. Economic impacts affect agricultural yields, labor supply and productivity, energy supply and demand, and trade (Carleton & Hsiang, 2016). Temperature is an integral factor in producing staple crops. Hotter days, which are increasing in number and intensity, are resulting in a loss of yield of these crops (ibid, 7). With regard to labor supply and demand, heat stress lowers work intensity, reduces cognitive performance, and results in voluntary shortened work hours (ibid, 7). When temperatures are high, demand surges for electricity occur, which strains supply and transmission. It is also important to note that energy usage is the largest contributor to anthropogenic climate change, so a surge in demand for fossil fuel related energy as a reaction to hotter days is a self-fulfilling cycle (ibid, 7). In the absence of serious mitigation efforts, infrastructure and property will be severely damaged by sea level rise. Over the next century economic sectors across the United States are projected to experience annual losses of hundreds of billions of dollars (USGCRP, 2018).

Social Impacts

Social impacts of climate change include interpersonal violence and aggression, intergroup violence, institutional breakdown and state failure, and migration (Carleton & Hsiang, 2016). As temperature increases and rainfall decreases, interpersonal violence has been shown to

increase (Hsiang et. al., 2013). Research shows that violence increases by roughly 11% per standard deviation in temperature and that rainfall extremes, also increase intergroup conflict in agricultural settings (Conflict in a changing climate, 2016). Plante and Anderson (2017) highlight three reasons that explain this increase in violent behavior. First, they explain that simply when people get hot, they get uncomfortable and that can lead to aggression and violence. Second, they explain that increased temperatures can indirectly increase violence as a result of increasing food insecurity and increasing reliance on emergency and recovery spending in the wake of more frequent extreme weather events. Third, as a result of extreme heat making certain areas unlivable, eco-migration – a process in which entire groups migrate in response to the physical, economic, or political instability brought about by an ecological disaster – will increase which can lead to increased conflict over limited resources. Additionally, it has been demonstrated that deteriorating economic conditions and safety increase migration of people (Carleton & Hsiang, 2016).

Psychological/Affective Impacts

Existing literature links environmental, and specifically climate, change and mental health. Scholars have defined numerous aspects of climate change's affective dimension. Solastalgia, the distress caused by inability to derive solace from one's home environment due to environmental change, is a term coined by psychologist Glenn Albrecht and is a foundational concept of climate change psychology (Albrecht et. al., 2007). In addition to solastalgia, there are many climate-related mental health issues including eco-grief, eco-anxiety, climate anxiety, pre-traumatic distress and ecological paralysis (Lewis, 2018; Cunsolo and Ellis, 2018).

Psychologists have identified three classes of climate change-related psychological impacts: direct, indirect and psychosocial (Doherty, 2011; Figure 1.1). Direct impacts are acute or traumatic effects of extreme weather events and a changed environment. Indirect impacts are

threats to emotional well-being based on observation of impacts and concern or uncertainty about future risks. Psychosocial impacts are chronic social and community effects of heat, drought, migrations and climate-related conflicts and post-disaster adjustment (265).

Climate change-related distress can be described using a cluster of terms which includes climate anxiety, eco anxiety, eco paralysis and climate grief which are all psychoterratic (earth-related) syndromes (Lewis, 2018). It is important to understand that indirect climate change impacts, "perpetuate a delayed destruction that…are incremental and can be just as damaging as acute climate impacts" (Clayton et. al., 2017, 27). Among the indirect impacts of climate change are solastalgia, ecological/climate grief, and ecological/climate anxiety, which will be the focus of this research.

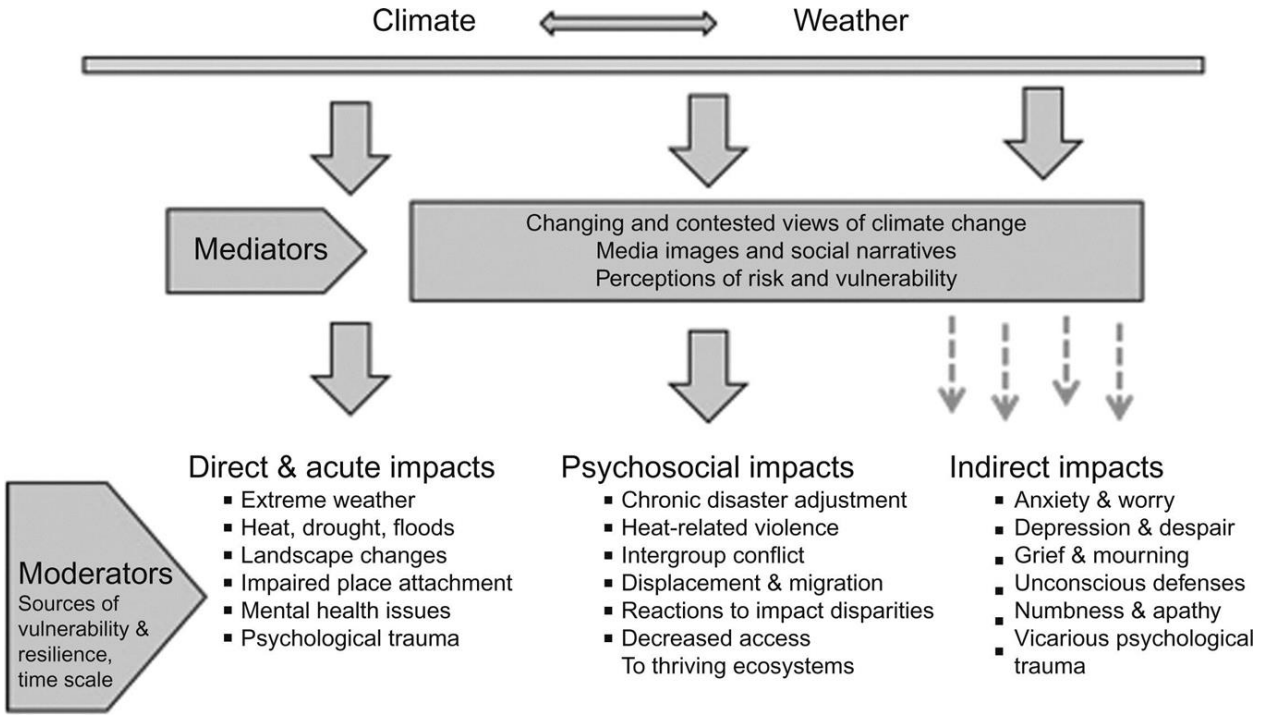

Figure 1.1: Mental health impacts – direct and indirect pathways from Doherty & Clayton 2011

Indirect Impacts of Climate Change

Solastalgia

One of the foundational theories of the affective dimension of environmental change is solastalgia. Solastalgia, which is the pain or distress caused by the loss of, or inability to derive solace connected to the negatively perceived state of one's home environment, was coined by Glenn Albrecht in 2003 (Albrecht et. al., 2007). Solastalgia exists where there is the lived experience of physical desolation of home (96). Solastalgia is characterized as a psychoterratic illness where people's mental well-being (psyche) is threatened by the serving of 'healthy' links between themselves and their home territory (95).

There have been a number of studies conducted to investigate solastalgia among a variety of populations, specifically those who have an intimate relationship with the natural world. It has been demonstrated in Inuit communities whose livelihoods have been impacted as a result of warming temperatures and the reduction of sea ice, making it more difficult to conduct activities central to their culture and way of life (Cunsolo et. al., 2013). In interviews, residents expressed feelings of sadness and anger associated with the changing environment because "spending time on the land 'enriches the soul'" (19-20).

Research on the expansion of open-cut coal mining and power industries in the Upper Hunter Region of New South Wales (NSW), Australia found that residents found that "their sense of well-being, their identity, physical and mental well-being and general well-being were all challenged by unwelcome change" (Albrecht et. al., 2007). Interview responses resonated strongly with the dominant components of solastalgia including "the loss of ecosystem health and corresponding sense of place, threats to personal health and wellbeing and a sense of injustice and/or powerlessness" (96). Similar findings came out of a study of people affected by drought in NSW (97).

Research on solastalgia has made it clear that serious mental health implications can arise in the context of severe environmental change. Beyond and alongside solastalgia, there are other mental health implications that can arise in a changing climate not only when one's physical relationship with their homeland is disrupted but in a variety of ways as the climate changes.

Ecological/Climate Grief

Research shows that as environmental change and ecological decline become more intimately entwined with everyday life, mental and emotional responses are increasingly strong and prevalent (Cunsolo and Ellis, 2018). Grief is defined as the internal, physiological and emotional response to loss and mourning. Further it is the period of mental, emotional, and personal transition as people learn to live in the context of loss (ibid, 275).

Ecological grief, unlike other forms of grief, is a form of "disenfranchised grief" or a grief that is not publicly or openly acknowledged because it is a kind of grief associated with the knowledge of the destruction of the natural word in ways that are often intangible and challenging to understand completely (ibid, 275). The essence of ecological grief is

> *[t]o bear witness to ecological losses personally, or to the suffering encountered by others as they bear their own losses, is to be reminded that climate change is not just an abstract scientific concept. Rather, it is the source of much hitherto unacknowledged emotion and psychological pain, particularly for people who remain deeply connected to, and observant of, the natural world* (ibid, 279).

This grief can easily lead to a sense of despair and hopelessness, in light of the realization that many activities the average individual partakes in everyday, including driving internal combustion engine cars and consuming single use plastic, are further contributing to the decline of the natural world (Lewis, 2018). Therefore, ecological grief can be differentiated from solastalgia in that it is a broader term used to describe a general sense of grief with regard to

environmental destruction while solastalgia is more closely related to one's own, specific experience with loss of an environment in essence.

Ecological/Climate Anxiety

Overview

Eco-anxiety is an indirect psychological impact of climate change and is a specific form of anxiety relating to the distress caused by our knowledge of environmental changes and can be used to describe the range of emotions and mental states derived from this knowledge (Usher et., al, 2019; Pihkala, 2018). Broadly, eco-anxiety is "a wide-scale reaction to the state of the planetary ecosystems" (Pihkala, 4, 2020). It can also be understood as a chronic fear of environmental doom (Clayton et. al., 2017). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) does not list a diagnosis of eco-anxiety, but self-reported symptoms of include panic attacks, obsessive thinking, irritability, weakness, compulsive behavior, sadness, mood swings and insomnia (Doherty, 2011; Castello, 2018; Usher et., al, 2019; Pihkala, 2019).

As a general term

There is some debate among scholars about the difference, or lack thereof, between climate anxiety and eco-anxiety. This debate is in no small part due to the fact that climate change is linked to many other ecological problems such as ecosystem collapse (Pihkala 2020). Although Pihkala uses eco-anxiety as an all-encompassing word for anxiety related to the ecological crisis in his scholarship, he also sees a difference between eco-anxiety and climate anxiety articulating that "eco-anxiety can be used to describe any anxiety which is related to the ecological crisis, and climate anxiety means such anxiety which is significantly related to anthropogenic climate change" (3).

Further, Pihkala (2020) addresses the connection between anxiety, specifically eco-anxiety, and a range of emotions. More specifically, he argues that "tones of ecological effect

often include anxiety-like manifestations" (9). Pihkala concludes that "as a general term for difficult feelings because of the ecological crisis, eco-anxiety seems to be quite suitable, because so many forms of these feelings have some characteristics of anxiety" (14). In summary, eco-anxiety can be used to describe a range of emotions and feelings that come up for people around climate change which is why it is the primary term used in my research.

Significance

Research shows that 21% of Americans are *very worried* about climate change. This is likely a result of people increased exposure "to an increasing pace of climate disasters and species extinctions and to reports of inadequate response by leadership" through the news and sometimes personal experience (Lewis, 2018). This anxiety is coupled with "the knowledge that we are all participating in the fossil fuels based social, cultural, and economic systems that have brought on and are worsening this slow-moving disaster" (Lewis, 2018). An important and related condition to consider when thinking about eco anxiety is *future anxiety*, which is a state of apprehension, uncertainty, fear, worry, and concern of unfavorable changes in a more remote personal future (Searle, 2010). Similarly, *pre traumatic stress* is a related term which is described by Van Susteren and Colino (2020) as anticipatory worry and stress about crises like climate change. Due to the fact that for many people the worries, fears, and anxieties about climate change are still in the future to some degree, the idea of future anxiety is quite applicable. The way in which people respond to climate change-related distress vary greatly and can significantly impact their ability to cope in both the near and long term.

Potential responses to climate anxiety: maladaptive or adaptive

Psychological responses to climate anxiety can be maladaptive or adaptive. For many people, the mental toll of thinking about and experiencing the reality of a changing climate is nearly too much to bear. As a result, a common response is to reject this reality via a maladaptive

response. A maladaptive response is characterized by shutting down through denial, splitting, and disavowal (Doherty, 2011; Lewis, 2019).

Denial is a social justification for behaviors that exacerbate environmental degradation. It also serves as a psychological defense, which is an involuntary mental mechanism that distorts perception of internal and external reality to reduce subjective distress, common for people experiencing extreme anxiety about the climate (Doherty, 2011, 270). Splitting is when one retains the intellectual knowledge of reality but divests it of emotional meaning (Doherty, 2011, 270). In essence, "we have defensively tended to split our appreciation for the present and future, predicting future catastrophe while wrapping the present in gauze as though the present is not connected to the future" (Lewis, 2019). Similarly, is the idea of disavowal which is a defense mechanism whereby one knows and does not know something at the same time (Lewis, 2018).

A maladaptive response prevents productive engagement with climate and limits potential for resilience. A common response to knowledge about climate change is to psychologically distance oneself from the problem under the thinking that it is something that will happen to others, somewhere else, in the distant future that is so far it seems completely intangible (Clayton et. al., 2017). Pihkala (2018) explains how eco-anxiety reduces resilience by increasing hopelessness and paralysis. Lertzman (2019) describes a *window of tolerance* that everyone has regarding the amount of climate stress and anxiety one can manage before collapsing or becoming rigid. We lose our capacity to act when we push against this window without acknowledging these emotions and a path towards understanding.

Alternatively, one's response can be adaptive, cultivating various self-preserving effects such as resilience, constructive hope, attunement, cognitive resonance, and self-efficacy. Pihkala (2019) states that one must be able to adapt in the face of anxiety rather than be crushed.

Lertzman (2019) describes attunement as a way to confront and overcome climate anxiety in an adaptive way. Attunement occurs when one feels validated thus allowing one's capacity to move into a higher level of functioning. Hiser and Lynch (2020) discuss cognitive resonance - when one's actions align with one's thinking - as a tool for discovering strategies towards hope and resilience. Ojala (2012) discusses the role constructive hope - hope based in positive re-appraisal, trust in different societal actors, and trust in the efficacy of individual action not denial - plays in overcoming environmental worries. Macy and Johnstone (2012) focus on active hope which is "becoming an active participant in bringing about what one hopes for" (3). Action, broadly speaking, is established as a method for activating the aforementioned effects.

Resilience

Overview

The cultivation of resilience is an important part of the ability to respond to the borage of climate information. Related terms are psychological and emotional resilience. Psychological resilience is the ability of an individual to withstand stressors in the face of adversity (Rutter, 2006). Emotional resilience is an individual's ability to produce positive emotions in the face of negative emotional stimulation, and to recover quickly from negative emotional experiences (Scholes, 2013). In their study among Chinese college students, Li et. al. (2020) found that strong emotional resilience (ER) was beneficial when confronted with negative life events (NLE) which refers to "a range of threats and challenges that individuals encounter in daily life as well as events or situations that exceed or damage their mental or physical capacity" (Grant et. al. 2003).

Distinguished from hope and optimism

It is important to note that resiliency does not exist in the absence of suffering and hardship. Jaquette Ray (2020) distinguishes resilience from hope or optimism in that resilience "has the capacity for accepting negative feelings and legacies of ongoing crisis" (141). Jaquette Ray also importantly notes that resilience has a complicated history when it comes to exploitation and oppression. For this reason, she writes "[r]esilience must be advocated for in culturally sensitive ways, with acknowledgement that the crises of environmental change have been impacting indigenous peoples around the globe since the age of expansion, beginning as early as the fifteenth century" (140). In essence, to be resilient is not to look at the world with undying optimism but rather it is to acknowledge hardship, sorrow and pain and still continue. With climate change and its attendant environmental calamities, one must confront, acknowledge and honor the pain for the world to truly be resilient (Macy & Johnstone, 2012).

Capacity to Act/Sphere of Influence

A central tenet of resilience building when it comes to continued engagement with environmental work is the recognition of one's capacity to act within their spheres of influence. Doherty (2018) argues that "[a]djusting to climate change with integrity and resilience will require a combination of realistic goal setting, building one's capacity for engagement though positive imagery and self-restoration, and commitment to long-term actions and goals including continuing education about climate change, making responsible lifestyle choices, and promoting political and structural changes in society." Understanding one's personal capacity to act and influence change on different levels helps to cultivate long-term resiliency. Jaquette Ray (2020) speaks to this recognition of "capacity for engagement" through her discussion of spheres of influence. Essentially, one's sphere of influence refers to the realms over which one has the capacity to act and effect change. For example, within one's personal sphere of influence one can

choose to buy local food to reduce one's carbon footprint. Within one's society sphere of influence one can activity engage with elections to support candidates who value the environment. Jaquette Ray writes "our sense of efficacy in the face of seemingly insurmountable obstacles rests on redefining what we think of as meaningful actions in the world, and what we think of as our role in that work" (59). In summary it appears that recognition of one's spheres of influence is vital to long-term coping and resiliency.

Mindfulness

Furthermore, mindfulness seems to be an important influencing factor on the ability to cultivate psychological resilience. Kelsey (2020) writes "other studies show the positive impact of mindfulness on psychological resilience – our ability to rebound after adversity. Mindfulness has been linked to hopeful attitudes that steer us away from fatalistic defeatism and toward active engagement with environmental issues" (143).

Environmental Action

Defining

The rise in environmental degradation and climate change has been met with a rise in environmental action. Environmental action is defined as a deliberate action involving decisions, planning, implementation and reflection; an action should be directed at solving an environmental problem and it could be carried out by one's own decision (Li, 2015, 614). More specifically a *positive environmental action* is "a deliberate strategy that involves decision, planning, implementation, and reflection...to achieve a specific environmental outcome" (Arnold et. al., 2009, 28). Stern (2000) discerns between different types of environmental action. *Committed environmental activism*, according to Stern, refers to active involvement in environmental organizations and demonstrations while *non-activist behaviors in the public sphere* refers to behavior that is not directly activist but involves concern for the environment.

Stern further delineates between two types of non-activist behaviors: active environmental citizenship and support or acceptance of public policies. The former refers to "action(s) specific to things such as petitioning on environmental issues, joining and contributing to environmental organizations" while the latter refers to "action(s) specific to things such as stated approval of environmental regulations, willingness to pay higher taxes for environmental protection" (409). Different forms of activism that youth activists employ will be discussed later (see *youth as activists - manifestations of*).

Benefits of

There are many benefits to being involved in environmental action, not the least of which is the fact that members of environmental organizations are expected to engage more in pro-environmental behavior than the general public. Although there are many ways one could be involved in environmental action of some sort, environmental activism is the most committed level (Buttigieg and Pace, 2013, 17). This kind of intensely dedicated environmental activism coincides with the idea of environmental citizenship – a form of citizenship that prioritizes and emphasizes the importance of the environment, one that crosses national territorial borders. It stresses the need to have citizens inhabit greater awareness of the environment and try to maintain and preserve the Earth by participating in 'green' green activities and saving the Earth (Ahmad et. al., 2012, 85). A growing body of literature suggests that environmental activism and organization may not just be good for the planet but it may also be good for the people engaged in the activism.

As an antidote for eco-anxiety

Overview

As mentioned, emotional reactions to climate change range from apathy and disavowal to environmental engagement through organizations. Research also suggests that

"being actively at work with others can foster ongoing engagement and mitigate discouragement" in the face of overwhelming climate change induced anxiety (Lewis, 2018). It has been shown that we should respond to paralysis and hopelessness by "foster[ing] hope" through "emphasizing engagement" because while "fear can produce a freezing response, action may overcome freezing via known neurophysiological pathways" (ibid, 2). It has been shown that engagement in actions that have a reasonable chance of mitigation and adaptation can be incredibly beneficial for relieving anxiety caused by climate change (Doherty, 2011, 272). Three of the main interconnected themes that can help explain why environmental action seems to serve as an antidote for eco-anxiety are community building, creativity and solutions building, and cultivation of efficacy.

Community building

Action and activism appear to relieve eco-anxiety through action often comes community. Activism can foster a sense of community and empowerment by galvanizing "creative ideas and actions in ways that transform and strengthen the resilience of and creativity of community and individuals'" (Doherty, 2011, 272). An example of activism fostering a sense of community is the 'Protests for the Future' which were initiated by a young Swedish girl named Greta Thunberg. Research on these protests showed that they were places of joy, dancing, excitement and positivity (Bowman, 2019, 298). Specifically, youth protesters "build organizing networks of issue-oriented social control and also attend the march with friends" (Bowman, 2019, 298). Jaquette Ray (2020) echoes this community narrative by saying "if we think of ourselves as acting alone, we feel that there's not time to step out of the fray to recharge ourselves. If we recognize that we are a collective – a choir of voices – we know that the song we will continue while we are recovering our breath, and that we can rejoin when we can" (133).

Essentially, to know that one is not alone in their mission and that a community of support exists behind them is powerfully restorative and vital.

Creativity

Activism can galvanize creativity and "actions in ways that transform and strengthen the resilience of and creativity of community and individuals" through community and empowerment (Doherty, 2011, 272). Clayton et. al. (2017) found that building resilience through community action can help people who are experiencing eco-anxiety and other related distress feel empowered to effect change. The report's lead author said that involvement is the best way to combat feelings of helplessness by enabling folks to increase impact and access social support for negative feelings (Garcia, 2018). Furthermore, the way climate change is framed is important when it comes to how one emotionally responds to it. Mary Annaïse Heglar wrote "the thing about climate is that you can either be overwhelmed by the complexity of the problem or fall in love with the creativity of the solutions" (Heglar, 2020). This suggests that embracing creativity through activism might offer a path towards fulfillment.

Cultivation of efficacy: self and collective

Self

An important component of successful activism is the idea of self-efficacy. Self-efficacy is one's belief in their own ability to succeed in a situation or to accomplish a task (Clayton et. al., 2017). It has been shown that "when people learn about, understand, and engage in pro environmental behaviors, they will feel more competent about the solutions and are, then, more likely to adopt such behaviors" (Buttigieg and Pace, 2013, 25). Any feelings of helplessness that come from climate change outcomes find relief when people are active and realize that they are

capable of bringing about change (Buttigieg and Pace, 2013, 25). Jaquette Ray (2020) expands on this idea writing that "feeling like you don't have the power to do good will deflate your desire to even try. It follows that one's efficacy, or confidence in one's ability to solve a problem, is more likely to determine whether one even attempts to solve a problem" (74).

Collective

Like self-efficacy, collective efficacy is important and can be cultivated through involvement with environmental organizations. In working together in community, climate activists often experience a kind of "collective efficacy" that overcomes feelings of helplessness that comes out of knowing that others are working on solutions to environmental problems like climate change (Buttigieg and Pace, 2013, 26).

Youth (15-24) and Climate Change

The idea of youth is a relationally based social status dependent on political and historical context rather than as a universal age range (Fisher, 2016, 230). That being said the international standard age range for youth is 15-24 years old (UNESCO, n.d). The approximate 1.2 billion young people (15-24) across the world constitute 18% of the global population (Buttigieg and Pace, 2013, 15). This population is of interest because of both its particular vulnerabilities to climate-related mental health implications and its particular opportunity to respond as will be detailed below (Jaquette Ray, 2020).

Particular vulnerabilities of youth

Although climate change affects everyone, albeit unequally, and activism occurs across age groups, youth are particularly vulnerable to climate change and its mental health implications and therefore are in a unique position to engage with climate and environmental activism. Given that scientists project serious implications of a changing climate to begin taking place by 2050, the youth of today will undoubtedly face incredible challenges as a result of global climate

change (IPCC, 2018). For youth and climate change, the anxiety of what is to come is noticeably pressing. Those with an underdeveloped coping capacity, existing mental health issues, and those involved in climate work and research are more vulnerable (Pihkala, 2019).

The Climate Generation

Defining

Jaquette Ray (2020) defines *the climate generation* as those born between the early 1990s and early 2000s. She defines this group as such because it is the first generation to have spent its entire lives with the effects of climate change. She goes on to say that members of the Climate Generation "share a mounting awareness that the effects of climate change are not abstract or predicted in some distant future but are already being felt" (3). Most importantly, she argues that this generation is unique both in its vulnerability to climate change and its ability to organize and bring about meaningful change.

Overview

McCamp (2020) surveyed and interviewed UVM students about mental health implications of climate change. She found that 84% of UVM students are worried about climate change and 75% of the total student population said that their mental health and ability to succeed at school is being affected. These data support the claim that eco-anxiety is a critical issue for young people. In 2010, New South Wales experienced the worst drought in a century. A study conducted there found that one of the biggest issues for young people was anxiety and worry about the future (Carnie et. al., 2011, 247). These youth said that in the face of these droughts, they needed more information about mental illness, where to get help, and how to help others and better coping skills and a choice of counsellors who understand drought (Carnie et. al., 2011, 247). Studies show that young people are active in the climate movement because they

understand how as current and future citizens, they have a certain responsibility for meeting the challenge of climate change (Fisher, 2016, 229). According to the Center for Collegiate Mental Health, more than 61% of undergraduates experience stress-related concerns, including numerous forms of anxiety (Greenburg, 2020). The American Psychological Association (2020) found that 47% of 18-34-year-old Americans, indicated that the stress of climate change impacted their daily lives.

Media and information

Another reason youth may be particularly vulnerable to climate change and its mental health implications are because of how media representation and information technologies are playing a role in making information about the climate crisis more accessible. It is shown that "exposure to information endangered by modern technologies (e.g., vivid and instantaneous Internet) raises the salience of global crises and can engender anxiety or positivity in the face of seemingly overwhelming threats" (Doherty, 2011, 267). Young people benefit from the ease of communication through modern technology yet experience more exposure to disturbing and anxiety-inducing climate realities (Li, 2015, 612). Houser (2020) talks about the idea of *infowhelm* in the context of receiving negative, doom and gloom messages about climate change today. To receive an unrelenting stream of negative environmental news and information is not only depressing but can be debilitating and make one wonder why it is even worth it to act on climate at all.

Underdeveloped coping capacity

Young people are more vulnerable to climate change's negative effects because their coping capacity is still developing. Specifically, those with pre-existing depression and anxiety are at even greater risk to worsening symptoms (Majeed, 94, 2017). In a study completed by 275

adults, subjects were more likely to be distressed about climate change if they were female, under 35, have pro environmental orientation and possess personality traits such as high levels of future anxiety (Searle, 2010). Although youth are particularly vulnerable to the effects of climate change, they also play an important role as activists and activism is suggested in preliminary studies to be beneficial for dealing with the anxieties caused by global climate change.

Youth as activists

Contributing factors to environmental action

One study defined youth climate activists as people contextually considered youth who intentionally engage in actions connected to the political and collective aims of addressing the problems of contemporary anthropogenic climate change (Fisher, 2016, 231). A study from China concluded that environmental organizations were mentioned more frequently by participants under the age of 25 (Li, 2015). This study sought to understand how life experiences contributed to one's affinity towards environmentalism. It used both an open-ended survey and closed-ended questionnaire to address this and among other findings one was that younger participants were more likely to mention an environmental organization. Many studies have been conducted to look at the life trajectories of youth activists and what led them to this kind of work. The findings among studies have been similar indicating that knowledge, experience in nature, role models - including parents, role models, teachers, friends-, formal education, and conferences and gatherings play important roles in the formation of a youth activist (Arnold et. al., 2009; Buttigieg and Pace, 2013).

Manifestations of

Youth address climate in a variety of ways at different scales. The different ways include small scale and informal community-based events, formal and voluntary global organizations, and individualized and socialized ways through issue specific activism or threw threshold and

part time activities (O'Brien, 2018). In an examination of the way youth interact with climate activism, three different types of dissent were identified. The first, dutiful dissent, refers to "cases in which young people's concerns are voiced within existing or newly created spaces." The second, disruptive dissent, is "a type of activism that arises when young citizens concerned about climate change question and seek to modify or change existing political and economic structures which include norms, rules, regulations and institutions." The third, dangerous dissent, is "a type of political activism that defies business as usual by initiating, developing and actualizing alternatives that inspire and sustain long-term transformations" (O'Brien, 2018). For young people involved in climate activism, the stakes are high. It has been shown that "the participation of young people in sustainable development efforts will determine the success of those efforts" (Buttigieg and Pace, 2013, 16). A major driver of participation in activism among youth is the idea of hope as a driving force (Ojala, 2012). However, there is a lack of literature that addresses how participants in various actions through environmental organizations might help young people cope and confront the climate crisis with resilience. Essentially, how action may serve as an antidote for eco-anxiety among members of the Climate Generation.

DATA AND METHODOLOGY

Overview

In order to understand and gather some insight about the relationship between eco-anxiety and action through environmental organizations at the University of Vermont, I conducted an interview-based study. Additionally, I utilized an informal survey to gather more information on the emotions about climate change that members of my interview population feel. My interviews and survey responses aimed to address the following questions:

1. Does action through involvement with environmental organizations serve as an antidote for eco-anxiety and its attendant psychological ills among members of the climate generation?
2. If action does serve as an antidote for eco-anxiety, how? If not, is there something else that does?

The interviews and survey responses were examined in conjunction with literature on eco-anxiety to examine whether or not action serves as an antidote for eco-anxiety among members of the climate generation at UVM who are involved in environmental organizations. In this study, the "measure" of eco-anxiety (and more importantly the lessening of it) was driven by qualitative data rather than empirical as it was grounded in the content of participants' responses to both the emotions survey and interview questions.

Survey

In order to assess my interview subjects' climate change-related emotions were feeling about climate change prior to being interviews, I asked participants to fill out an *emotions* survey (Appendix 1). In order to do so, prior to conducting each interview I sent each subject a survey list of emotions that were grouped into six categories (fear, anger, sadness, shame, hope, and other). Dr. Krista Hiser of the University of Hawaii recommended this particular emotion guide as she and her colleagues had used it in focus group research historically. I instructed each subject to first read through the list of emotions and highlight in yellow every word that resonated with them. Next, I instructed them to go through the list for a second time and highlight in blue the five words that resonated most strongly with them. I used this emotion survey for two reasons. First, I wanted to gather some quantitative data about how my participants were feeling about climate change and I suspected it would provide some insight

into the broader picture of how members of the climate generation are feeling about climate change. Second, I wanted to use participants' responses as a tool for guiding my interviews in a way that allowed me to gather the most insight on what my interview subjects were feeling.

During each interview, I asked the subject to talk about why they selected the emotions that they did. At times subjects would talk about the emotions without being prompted by myself. In that case I would skip over the term they already mentioned and focus on the remaining emotions. Although subjects had selected these emotions intentionally from a list of many, when I asked about each term subjects would often react more strongly to some of the words over others. For example, when I would ask "can you tell me about a time when you felt particularly fearful or worried or hopeless?" a subject might let out a short laugh suggesting that there are an abundance of examples and the question seemed comical to them.

Interviews

Selection and Recruitment Process

The population I drew from to recruit interview subjects was UVM students who are involved in environmental organizations at the University. There are a variety of clubs and organizations at UVM that are related to the environment. However, for the purpose of my study – to investigate the relationship between action through environmental organization and eco-anxiety – I used purposive sampling methods to focus on clubs and organizations that are environmental but more general in their mission rather than an overly specific, but still technically environmentally related group such as the UVM Forestry Club.

Given this criterion, I originally identified eight on campus organizations from which I was interested in recruiting participants. These organizations included the Sunrise Movement Burlington, Headwaters Magazine, Club Organize, the Climate Communication, Advocacy and Literacy Laboratory (CCALL), Vermont Public Interest Research Group (VPIRG) – UVM

Chapter Vermont Students Towards Environmental Protection (VSTEP), UVM People of Color in the Outdoors (POCO) and Black, Indigenous, People of Color Collective. It was my goal to interview two club members from each organization to bring the total number of interview subjects to 14 which was determined to be a sufficient number of subjects by myself in consultation with my advisors.

To recruit subjects within these organizations, I reached out directly to club leaders via email using contact information on UVM's website. In each email I introduced myself as a fourth-year student at the University of Vermont who is conducting an honors thesis about eco-anxiety among young people at UVM who are involved with environmental organizations on campus. I informed them that I was seeking interview subjects for this thesis work and asked if they and other members of their organization might be interested in being participants. I included in the email three sample questions in order for the potential subject to have sufficient information and understanding about my work (Appendix 2). I also included a research information sheet in the email that provide more detail about my motivations and process (Appendix 3).

After sending my original recruitment emails and a follow-up email, I received no response from members of Vermont Public Interest Research Group (VPIRG) – UVM Chapter, UVM People of Color in the Outdoors (POCO) or Black, Indigenous, People of Color Collective. As a result, I did not interview any members from these clubs. In these cases, it may have worked in my favor to employ a snowball sampling method in order to make contact with group members. Additionally, an interview subject from the Climate Communication, Advocacy and Literacy Laboratory informed me that they were involved in another group on campus – Sustainable Transportation Vermont (STVT) – that I had previously not considered in my

recruitment pool, but which fit my criterion and, therefore, was added to my recruitment population.

As a result, I interviewed subjects from the Sunrise Movement Burlington, Headwaters Magazine, Club Organize, the Climate Communication, Advocacy and Literacy Laboratory (CCALL), Vermont Students Towards Environmental Protection (VSTEP), and Sustainable Transportation Vermont (STVT). Further, although it was my goal to interview two subjects from each organization, that did not end up working out because of participant interest. Figure 2.1 displays the actual breakdown of interview subjects. Subject E was involved in both CCALL and STVT.

Organization	**Number of Subjects**
Sunrise Movement Burlington	2
Headwaters Magazine	1
Club Organize	3
Climate, Communication, Advocacy & Literacy Laboratory (CCALL)	2
Vermont Students Towards Environmental Protection (VSTEP)	3
Sustainable Transportation Vermont (STVT)	3

Figure 2.1: Breakdown of Interview Subjects by Organization

Interview Process

After I contacted and secured my 14 interview subjects, I set up times to conduct the interviews themselves. Due to the fact that this research took place during the COVID-19 pandemic when strict social distancing rules were in place for research, all of my interviews took place over Microsoft Teams. I interviewed subjects beginning in late October of 2020 and ended in early December of 2020. The interviews ranged from around 22 minutes to over an hour with

the average time being approximately 37 minutes. I had hoped to increase the number of interview subjects due to the fact that the interviews were shorter on average than I had anticipated, but due to a number of factors including the added challenges of connecting with people during the pandemic I was unable to increase the number of subjects.

The interviews were semi-structured to allow room for elaboration and reflection. I drew inspiration from Cunsolo et. al. (2013) who interviewed members of the Inuit population in Rigolet, Nunatsiavut, Labrador, Canada to understand mental health impacts of environmental changes. I also drew inspiration from Hiser and Lynch (2020) who conducted focus groups during which students were given liberal space to talk about how climate change makes them feel. I began each interview by asking participants to provide some background information including their age, year in school, major in college, and race. I had a list of 12 interview questions that I asked every interview subject but allowed room for participants to talk about what was important to them and for myself to attend to emergent questions that I had not previously planned on addressing (Appendix 4). My questions evolved slightly throughout the interviews. Most notably during my second interview the subject talked about how they felt learning about climate change in the classroom. Previously I had not asked specifically about participants' experiences in the classroom but given that the majority of them were environmental studies or environmental science majors, I decided it was an interesting and fruitful point of discussion. As a result, I added that question *how do your emotions differ when you're in the classroom learning about things like climate change versus when you're participating in X organization?*

I recorded all of my interviews using Microsoft Teams' recording feature with the consent of my participants. While interviewing subjects I took cursory notes but did not attempt

to take lengthy notes in order to be fully engaged with the conversation. Due to the fact that my interviews occurred virtually there are some technical challenges such as one subject's recording being challenging to hear.

Transcription Process

I transcribed all of my interviews with the help of the online transcription service Otter.ai. My first step for transcription was to upload the recording to Otter.ai. From there, the service transcribed the interviews. After Otter.ai transcribed the interviews, I returned to the transcripts and listened through all 14 interviews and edited what the service had transcribed. In most cases Otter.ai captured responses accurately but, in some cases, there were errors which I was able to correct. Once I edited a transcription, I exported the file to a word document.

While listening to the interviews during the transcription editing process, I expanded upon notes I had taken and observations I had made during the interviews themselves in order to think about constructing my codebook. After I completed transcribing the interviews, I emailed all interview subjects a copy of their transcribed interview to give them the opportunity confirm that what was written accurately reflected their responses. Beyond some minor corrections such as the misspelling of a name, all transcriptions were set.

Coding Process

Given the volume of my qualitative interview data I decided to code my data using the coding software program NVivo 12. My primary goal of coding was to determine what conclusions I can draw about the connection between eco-anxiety and action for my participants and what further insights about eco-anxiety can be identified through interview content.

This was an iterative process, involving multiple levels and rounds of coding. To begin, I developed a codebook by hand using a mix of both interpretive and descriptive codes to draw out themes in my interview data. After an extensive process of selecting which codes to use I

decided on four high-level codes for my first iteration of coding. I selected these four codes in order to address my primary research question – *does action through involvement with environmental organizations serve as an antidote for climate anxiety and attendant psychological ills among members of the climate generation?* – most effectively. The four codes I selected were *ecological anxiety*, *environmental action*, *responses to ecological anxiety* and *emotional state while participating in organization*.

First Iteration of Coding

I defined *ecological anxiety* in my codebook as an indirect psychological impact of climate change that is a specific form of anxiety relating to the distress caused by our knowledge of environmental changes and can be used to describe the range of emotions and mental states derived from this knowledge. Pihkala (2020) addresses the connection between anxiety, specifically eco-anxiety, and a range of emotions. More specifically, he argues that "tones of ecological effect often include anxiety-like manifestations" (9). Pihkala comes to the conclusion that "as a general term for difficult feelings because of the ecological crisis, eco-anxiety seems to be quite suitable, because so many forms of these feelings have some characteristics of anxiety" (14). This is important for my coding because for the purpose of my research I coded for all possibilities of eco-anxiety manifestation. It is not overly important for me to delineate between tightly related terms and impacts. Related emotions which I coded for as eco-anxiety but will try my best to delineate between for the purpose of deeper understanding include guilt, grief, trauma, despair and anger.

I defined *environmental action* in my codebook as any activity that takes place *within* the organization or group with which each participant is involved. For the purpose of my research *action* is broadly defined and can take on many forms but I narrowed my code to this definition

because it directly connects to my question about the relationship between eco-anxiety and environmental action through these environmental organizations. I am also curious about other types of actions such as personal behavior changes (going vegan, biking rather than driving) or time spent outdoors that participants do in response to their eco-anxiety, but it does not directly answer my question and, therefore, is of secondary importance.

I defined *responses to ecological anxiety* as the way a participant responds either in action or in thinking to their eco-anxiety related to their climate/environmental work

I defined *emotional state while participating in organization as* a participants' discussion of how they feel while participating in their respective environmental organization. This emotional state can be either an *explicit state of emotion* when a participant explicitly says phrases such as *I felt, I feel,* or *It makes me feel* with regard to an action/activity within their respective organization. It can be a *perceived state of emotion* when I as the coder can deduce a participant's emotional state while participating in the activity. For example, a*ttending X was a break from the world* or *X provided a good space to talk*.

Second Iteration of Coding

After going through my first iteration of coding with the four aforementioned codes I came to the conclusion that my codes were not granular enough and were not capturing the essence of the interviews in adequate detail. Therefore, I wrote a second iteration of the code book with more detail and with some adjustments to the first iteration's codes (Appendix 5). With regard to top level codes, I added the code *action as antidote for eco-anxiety* and removed *emotional state while participating in organization*. Most of the data that was coded as *emotional state while participating in organization* was shifted to *action as antidote for eco-anxiety* or to the new sub-code under environmental action *feelings about organization*.

Limitations

My study has some limitations worth acknowledging. First, the population from which I drew my interview subjects – students at UVM who are involved in one of the six environmental organizations included in my study–was a relatively small, non-diverse population. There was no randomization in my selection of participants and any member within the organizations was eligible to be interviewed. This means that my findings are not widely generalizable beyond these organizations and certainly not beyond UVM. More participants or more organizations from which participants were drawn would have expanded the data pool. Second, all interviews were conducted remotely on Microsoft Teams. Although this was a necessity in the context of the COVID-19 pandemic, remote interviews are not ideal especially for this kind of emotionally evocative subject matter. For example, the remote interviews limited my ability as a researcher to notice participant body language and added a kind of emotional barrier which may have led to some discomfort among participants regarding vulnerability. Finally, I drew my study subjects from a highly environmentally knowledgeable population. Eight of the 14 interview subjects are either environmental studies or science majors. This is notable because it impacted the type of conversations around climate change and other environmental issues that were possible.

FINDINGS AND RESULTS

Summary of Findings

Main Findings	

Finding 1	Participants are experiencing eco-anxiety
	• The main sources of eco-anxiety:
	  ○ politics and institutional behavior
	  ○ academics and higher education
	  ○ perceived lack of self-efficacy.
	• The main manifestations of eco-anxiety:
	  ○ existential anxiety
	  ○ grief or sadness
	  ○ guilt.

Finding 2	Participants are motivated to be involved in environmental action for a variety of reasons, but the main reason is a sense of moral duty, obligation or responsibility.
Finding 3	Action through involvement with environmental organizations appears to serve as antidote for eco-anxiety among participants through • the cultivation of a sense of community • the cultivation of efficacy (self and community).
Finding 4	Although some participants have experienced the direct impacts of climate change (wildfires in CA, hurricanes in NY, NJ and FL), the main sources of climate knowledge for all participants are indirect.
Finding 5	Most participants talked about the tension between individual versus institutional responsibility for climate change (going vegan versus holding corporations accountable for their action).

Demographics of Participants

In total, 14 subjects were interviewed for this research. As aforementioned, subjects were drawn from six environmental organizations at UVM (Figure 1.1). The subjects' ages ranged from 18-21 and included first-years (2), sophomores (3), juniors (3) and seniors (6) (Figure 3.1). The vast majority of subjects were studying either environmental studies (6) or environmental science (2) although other majors that were represented among subjects were wildlife and fisheries biology (1), global studies and Spanish (1), community development and applied

economics (CDAE) (2) and political science (1). One subject was undeclared in their major (Figure 3.2).

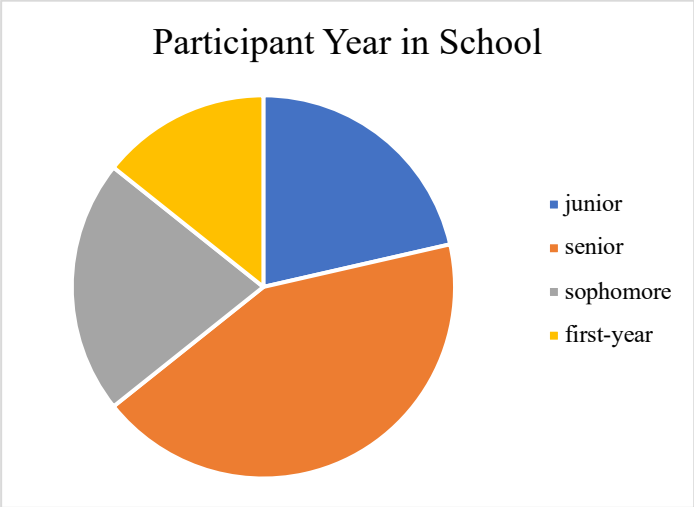

Figure 3.1: Participant Year in School

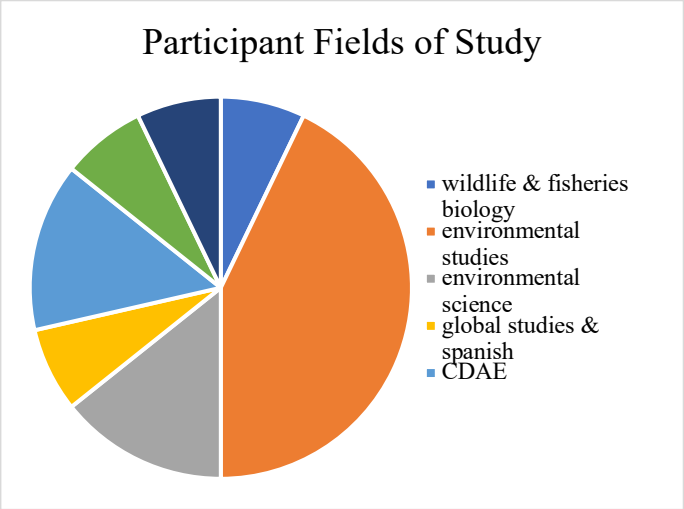

Figure 3.2: Participant Fields of Study

Emotions Survey Results

A wide range of emotions resonated with participants (Figure 3.5).

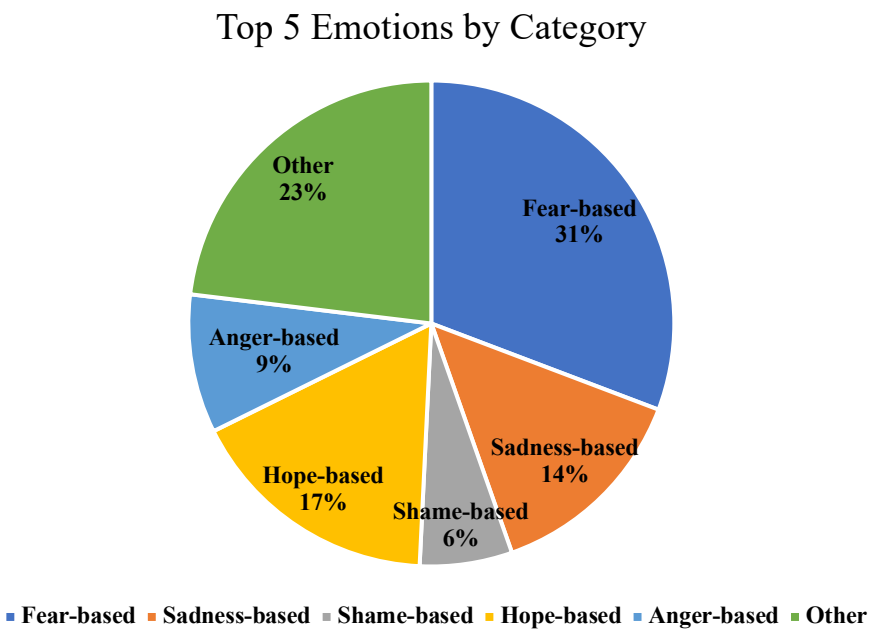

Figure 3.3: Top 5 emotions broken down by category that participants identified in pre-interview survey. Interviewees were asked to highlight the 5 emotions that resonated most strongly with them. Percentages indicate the percentage of total emotions across participants in each category.

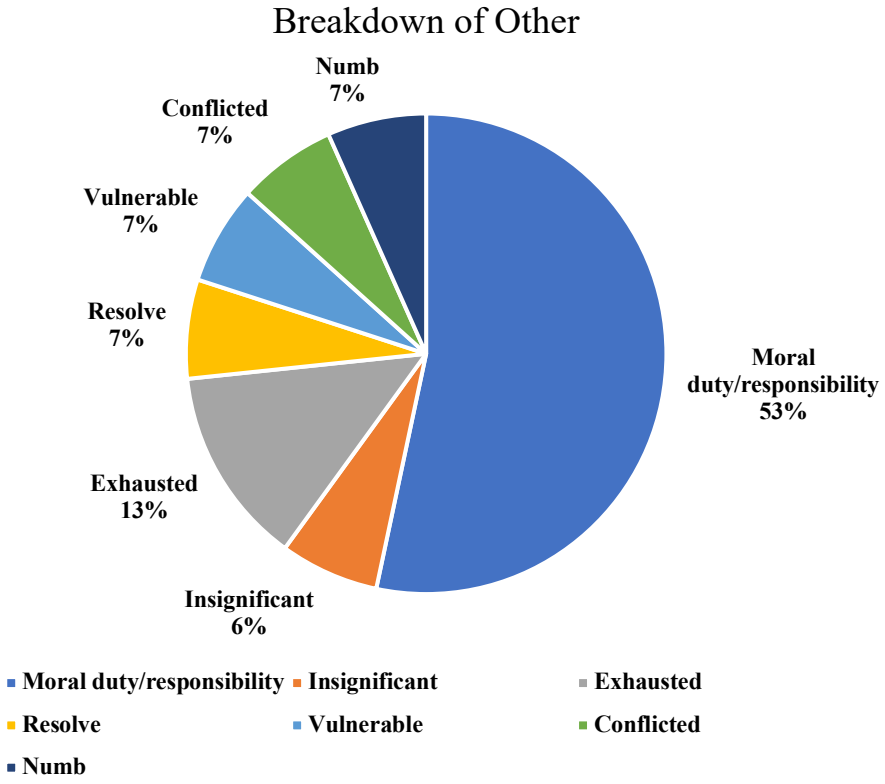

Figure 3.4: Breakdown of the emotions in the "other" category. Percentages indicate the percentage of each emotion across participants.

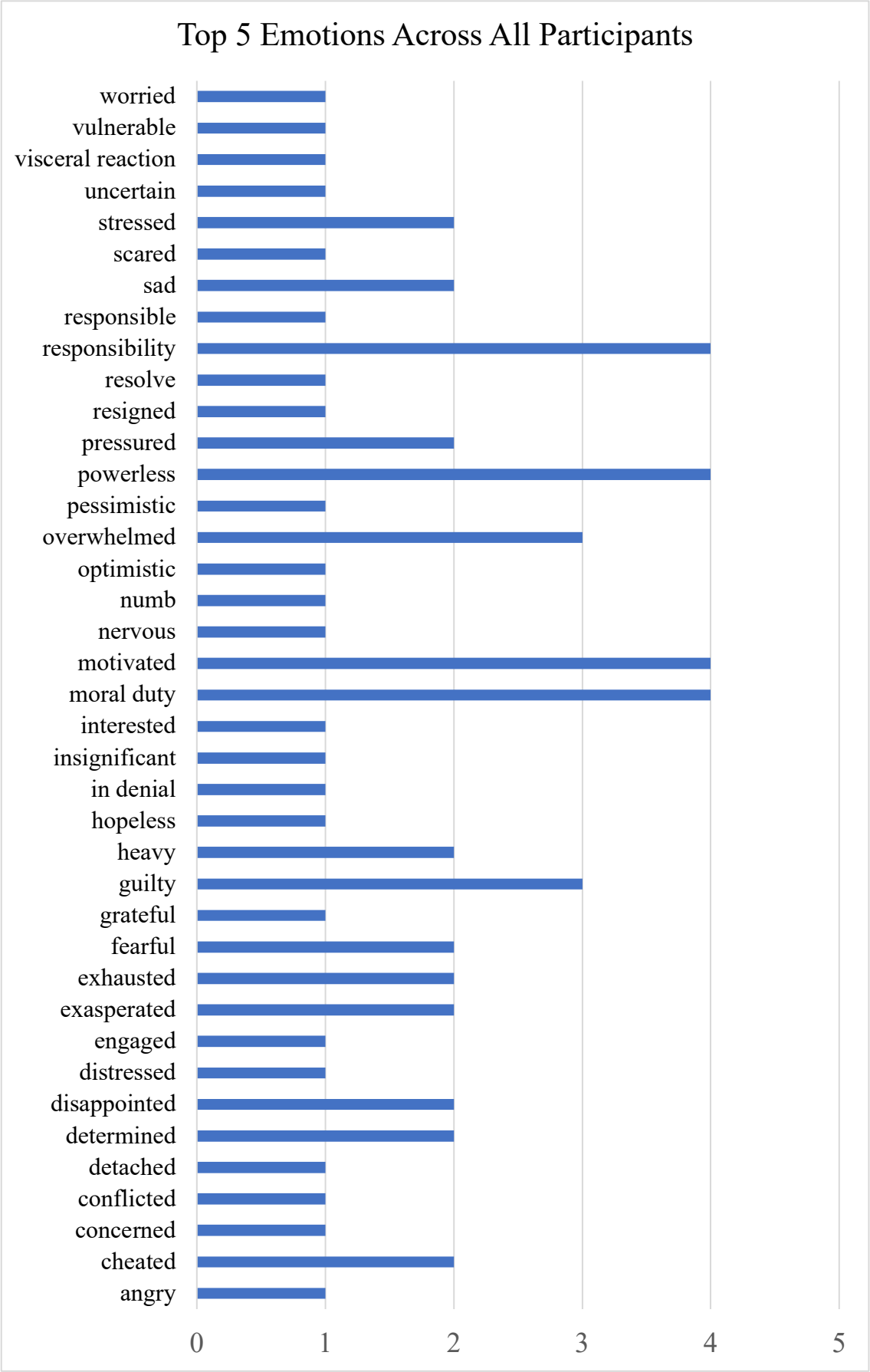

Figure 3.5: Total top 5 emotions selected by participants. Participants were asked to select the 5 emotions that resonated most strongly with them. This figure reflects all participant responses.

As discussed in the methods section, the emotions on the survey were categorized by *emotion type*. Of the top five emotions selected by participants, the breakdown was 31% fear-based, 23% other, 17% hope-based, 14% sadness based, 9% anger based, and 6% shame-based (Figure 3.3). Within the "other" category, moral duty/responsibility comprised 53% of the total responses (Figure 3.4). Participants were asked to select the top five emotions that resonated most strongly with them. The percentages aforementioned refer to the percentage of the aggregate top five emotions across participants.

Interviews

Throughout my interviews I had several goals in mind. First, I wanted to understand how eco-anxiety was manifesting and showing up in my interview subjects' lives. Second, I wanted to understand how, if at all, subjects' participation in their environmental organizations interacted with and, specifically, alleviated any part of their eco-anxiety. Furthermore, if there were other actions contributing to the alleviation of eco-anxiety, I wanted to understand that as well.

Eco-anxiety: sources and manifestations

Given that eco-anxiety is the main focus of this research, I wanted to understand as deeply as possible both *how* eco-anxiety was manifesting in my participants and *what* was causing it to manifest in my participants.

Sources

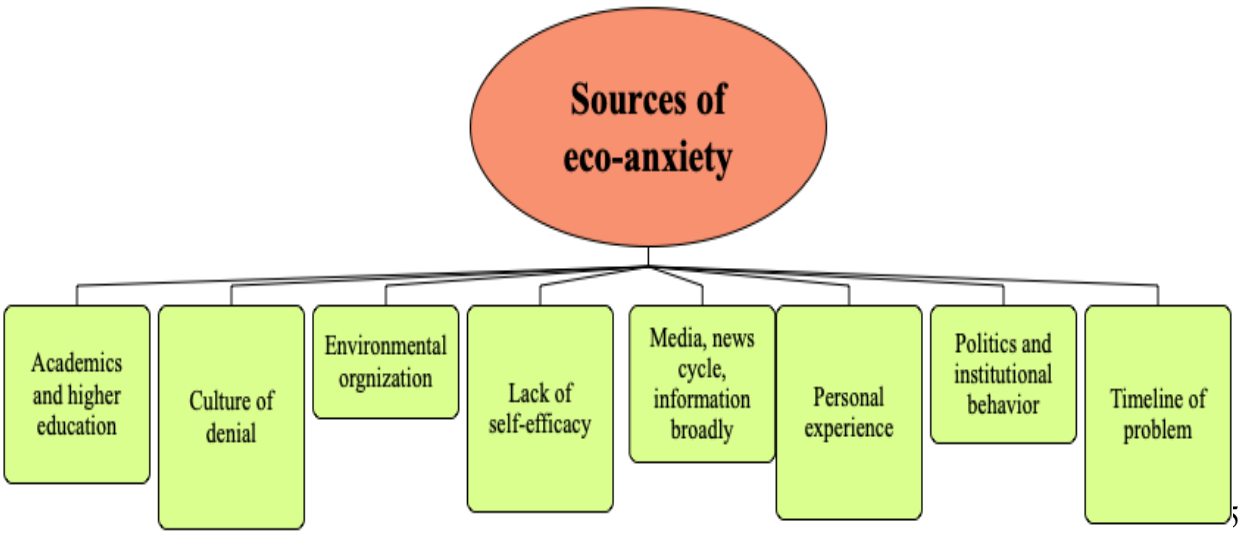

Figure 3.6: Sources of eco-anxiety from my data from participant interviews. These sources of eco-anxiety were most frequented mentioned by participants as revealed through iterative coding.

Academics and higher education

Academics and coursework within the UVM Environmental Program emerged as a reoccurring source of eco-anxiety among interview participants with 9 subjects identifying it as a source of eco-anxiety. Participants articulated feeling overwhelmed by the combination the affective heaviness of the information being presented and the shear amount of this information. Further, many participants articulated feeling as though they were not presented with adequate tools and resources to act on the information presented in the course. Participant A, a junior studying wildlife and fisheries biology spoke candidly about how the overwhelming nature of Environmental Studies 001 led her to switch out of environmental studies as a major:

[A] big part of why I switched it was that I was feeling super overwhelmed by the state of our world and I was kind of thrown into all of this information. Like, I didn't take any classes like this in high school and…wasn't super aware of it. And then I like came to college, and just decided that was going to be my major. And then all of a sudden, all of my classes were just so depressing, and like, so hard to just sit through and like, wrap my head around the fact that that was like the reality that we were living.

Participant A

Culture of denial

Climate deniers and generally people who question the severity of the climate change emerged as a theme as a source of eco-anxiety among participants. Participant D, a junior studying environmental studies, spoke about the tension and resulting anxieties that come from dealing with people questioning the merit and validity of her work –

It's very frustrating to like to have to explain to family members or like, just like close friends, the importance of your work. It's very draining for sure. It's like, it's very hard to feel like, you're going to be successful in a field where like, it's debated whether or not it's even a thing.

Participant D

Environmental organization

For seven participants, their environmental organizations contributed to their eco-anxiety in some ways although not as the main source. In some cases, participants expressed conflicting views about the feelings they experience while working within their organization. When talking about the work she did with Club Organize prior to successfully compelling UVM to divest from fossil fuels during the spring of 2020, Participant C, a junior studying environmental studies, expressed feeling "disappointed" and to some degree "powerless" within her activism because of the amount of effort required to effect institutional change.

> ***I think that like, sometimes in like, settings that are run by students, everyone's like anxiety, and they overwhelm this can kind of like, like contribute to each other, you know, and kind of like, build in a way***
>
> Participant J

Lack of self-efficacy

A lack of or at least a *perceived* lack of self-efficacy emerged as a major source of eco-anxiety among participants. Many participants talked about feeling like they were unable to make a difference or effect change in certain scenarios which led to feelings of helplessness.

> ***I like realize something needs to happen now and then I realize I'm not in a position of policymaking changing power and every time I like, and I realize like I'm not the head of like, Exxon, I'm not like, like, just it like, its hurts a lot that like I, like I see what's happening and I care so much about what's happening, and I am not powerful enough to make a huge systematic change.***
>
> Participant N

Media, news cycle, information broadly

Eight participants talked about different media sources, news and information broadly from a variety of sources – info whelm – as a source of eco-anxiety.

> ***I feel like climate change has such a way of like permeating everybody's lives, even in ways we don't know about, but because we're learning more we're so like, we think about it so much more that it…kind of permeates.***
>
> Participant E

Political and institutional behavior

Political and institutional inaction both within UVM and more broadly in the United States emerged as a reoccurring theme. Specifically, several participants noted the 2016 US election as a source of anxiety. Participant B, a senior studying environmental science, expressed this source of anxiety with regard to politicians and institutions in the United States:

> ***I'd say a big thing for me was obviously the 2016 election. That was just like a huge wake up call to the realities of like politics and big money in politics, and how that, like, how corporations are driving this…existential threat that we're living through now. [S]o yeah, I think as I got older, and dug deeper into all the people at play with this, like, again, the corporations' politicians.***
>
> Participant B

Personal experience – first-hand or second-hand

Although most participants had not personally been impacted by a climate impact such as a wildfire or a flood many of them noted having family or close friends who had experienced an impact of one kind or another which impacted their thinking and emotions about climate change.

I spent some of the summer in Colorado, and there's a ton of wildfires. And I just remember, like, being in the condo, and we were very far away, like, I think two of three hours away from the fire, but it was completely visible, the sky was full of smoke and like, all you could smell was fire and I just remember how sad – I was just like thinking about the increase of wildfires and just how so many people don't have the option to move from those areas. And yeah, I just remember feeling very sad and kind of hopeless.

Participant G

Timeline of problem

Another source of anxiety for participants was the shear timeline of the problem in terms of climate change. Some participants spoke candidly about the "12-year report" from the IPCC while others talked about the time crunch more generally.

Yeah, again, it's like the timeline…crunch feeling of like, not having enough time, it can both be like debilitating and motivational, depending on, I guess like my mental state, but like sometimes I'm like yeah, we have no time, we have to act now, we have to do all of these things. Like it's so important that we're constantly thinking about this. And that's, I think, a majority of the time, but then there's times where it seems a little bit hopeless and a little bit like, there's not much that we can do as like, a 20-year-old who like lives in Vermont. I'm like I don't really know what I can do.

Participant A

Manifestations

Eco-anxiety manifested in participants in a plethora of ways. These manifestations were at times overlapping and conflicting. I will go into more detail beyond the figure below for a handful of the manifestations but not all of them as there are many.

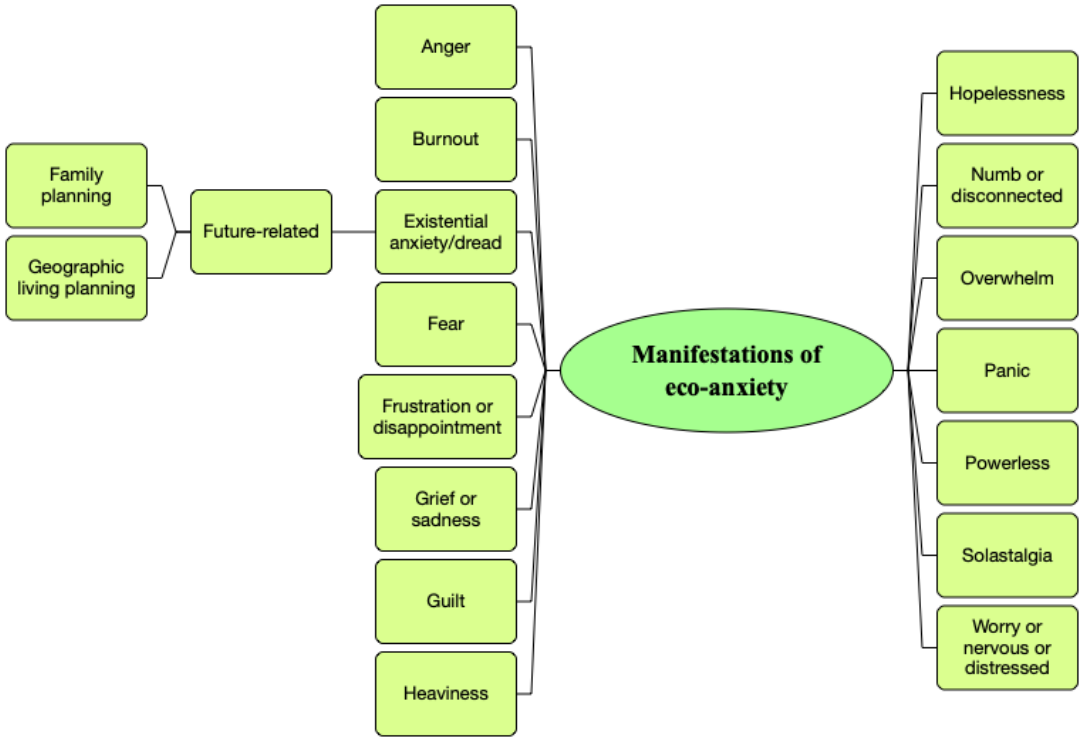

Figure 3.7: Manifestations of eco-anxiety for participants. There is no difference between manifestations listed on the right and left of the center. These manifestations reflect themes drawn from iterative coding.

Solastalgia

Solastalgia emerged as a theme of manifestation of eco-anxiety among participants. Some participants spoke about a longing or missing of the way beloved places used to be from childhood.

> ***I have so many memories from my childhood and even pretty recently, of 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.***
>
> Participant B

Existential anxiety

For many participants, existential anxiety manifests based on the shear the immensity of the climate crisis. Participant C spoke candidly about this:

> ***I just am very, I feel a lot of, I guess, like existential dread would be the word because I don't, I'm just very nervous at the thought of our one species ruining everything and its scary, and it would really suck if we just ruined everything.***
>
> Participant C

Future anxiety

Future anxiety as a specific, more concrete manifestation of existential anxiety emerged as a theme specifically around two areas: family planning and geographic living planning.

Family planning

Eight participants mentioned how climate change impacts their thinking about whether or not to have biological children.

> ***I mean, its like, kind of amazing…I'm only 20, so this is so far away, but I'm just like, what kind of future will my kids have if I do have them because like if we keep like, if things don't actually start to get better then like, its gonna affect them a lot more significantly than it'll affect me.***
>
> Participant H

Geographic living planning

Two participants mentioned how climate change impacts their future regarding where they will choose to live. Participant B talked about her dream of moving to the Western United States after graduating from college but is now reconsidering because of the increase in fires –

> ***That has always been my dream to move out west and every time I tell people about it, they're like, 'oh, maybe a bad idea now because of the fires', which is, like, really upsetting to me, because I have always dreamed of doing that. So, I think with everything going on out there has made me kind of question my, like life plans with all that.***
>
> Participant B

Motivation for action

Themes emerged across interviews about what motivates and drives participants to take part in their environmental work. These themes included motivation based on career interests or

opportunities, the unavoidability of the issue of climate change, interest in nature and moral study or responsibility. Moral duty and responsibility were the most frequently discussed motivation.

Moral duty and/or personal responsibility

This idea of "moral duty and responsibility" and "personal obligation" to act was mentioned by nearly every participant in the pre-interview emotions survey and/or in the interview. Participant F talked about this in the context of both his current work in VSTEP and in terms of his role in the future.

> ***I definitely feel like I have a responsibility some time in my life to do environmental work. That isn't exactly valued by you know, American society. I probably won't make a ton of money doing that or whatever, but I feel like I should, I should like it's an obligation for me to do something to help the environment, whether it's a job or whether it's something I do in my free time throughout my life.***
>
> Participant F

Hugeness/Unavoidability of issue

The shear unavoidability of the issue of climate change emerged as another motivating factor for engagement.

> ***I guess, just it's kind of an inescapable thing. I feel like it's at the intersection of all of our institutions, our economy, our culture, and all of that. I just see it really coming back to these core environmental issues.***
>
> Participant B

Action as antidote for eco-anxiety

Action both within and beyond environmental organizations (interpersonal) seemed to serve as an antidote for participants' eco-anxiety in a variety of ways (Figure 3.8).

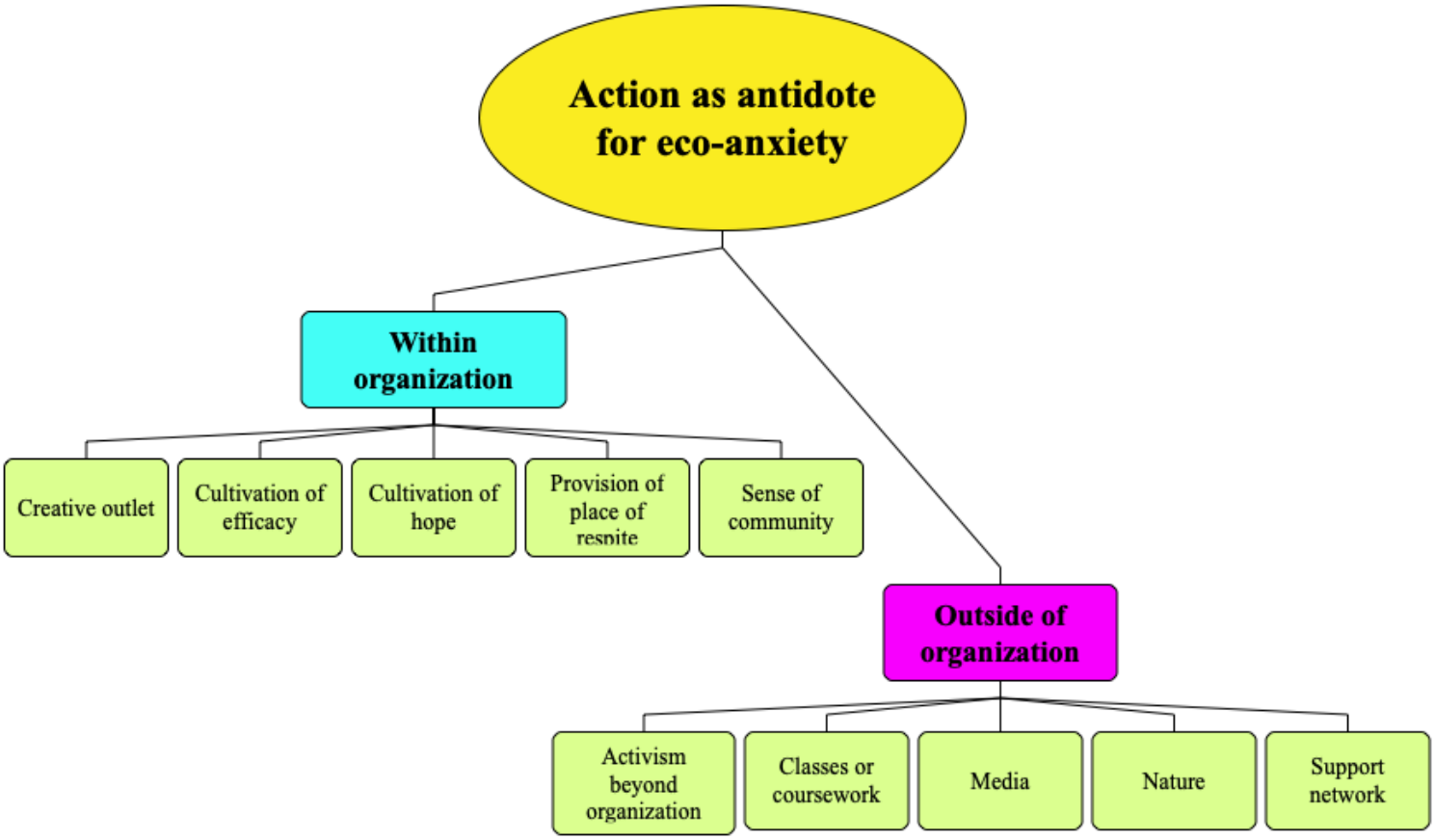

Figure 3.8: Action as antidote for eco-anxiety. This is a breakdown of how action both within and outside of participants' organizations helped relieve their eco-anxiety. This is based on themes drawn out from coding.

Within environmental organizations

Participants spoke about the relationship between eco-anxiety and their participation in their environmental organizations.

Outlet for creativity

Two participants described their environmental activities as being an outlet for creativity that they do not necessarily have in other areas of their life with regard to their environmental work.

> ***I see things in a visual way…so like expressing how I feel about climate through art is like really helpful for me.***
>
> Participant A

Cultivation of community

The cultivation of a sense of community emerged as a large theme about why action serves as an antidote for eco-anxiety. Eleven participants spoke about this either implicitly or explicitly. Participant B expressed that being a part of the environmental publication *Headwaters* as giving her a "sense of purpose and belonging" she described the feeling further saying:

> ***It is cathartic to be with people who are in the same age group who have the same anxieties about all of this, but also the sense of like, duty and care around it also. So, I think it makes me feel happy to be…in a community of … like-minded people who really understand… my millennial/Gen Z experience -- all of this and who are also interested in… contributing in whatever way they can.***
>
> Participant B

Cultivation of efficacy

Several participants talked about how when they are doing working within their organization, they feel good because they are able to tackle the large problem of climate change in a small, manageable way working within their sphere of influence. They talked about their organizations in terms of being very solutions oriented which made them feel like their actions were meaningful and were making a difference even on a small scale.

> ***I feel like I am making a difference environmentally, even if it's not directly like improving climate change, like I do think that like just expanding people's horizons on like, whether that be through a podcast or like some sort of like, speaker coming to campus or whatnot, like I do, like it is fulfilling.***
>
> Participant D

Provision of place of respite

Another way action through involvement in these environmental organizations seemed to serve as an antidote for participants' eco-anxiety was simply through its provision of a safe space of respite to feel, express, process.

> ***[H]earing about how dedicated people were, and about how much of a movement they built, definitely gave me hope for the potential of our club and…you know, knowing that the, you know, economic, like the economy is so different now than it was then. That also gave me hope. So, I think just learning about how you can build a movement here, how it's been done in the past, and I guess just how…willing to throw down for climate people are really at the end of the day is what inspired me just knowing people have their heads in the same place.***
>
> Participant C

Outside of environmental organizations

The actions (broadly defined) that participants take beyond the confines of each participant's environmental organization seemed to serve as an antidote for their eco-anxiety as well. The primary themes that emerged were engagement with classes or coursework, various forms of media, nature and, most predominantly, engagement with one's support network.

Support network

Several participants talked about how talking to their friends and family about their eco-anxiety helps them feel better.

> ***I talk to my parents a lot about it and friends and I am very, very lucky to have a lot of very, like environmentally conscious people in my life who have also experienced that feeling of powerlessness and talking about that with people is really, really helpful and sort of getting a validation that no, you can't do anything in this moment but maybe you can in the future and keep trying.***
>
> Participant N

Sources of climate change knowledge

Although some participants have experienced the direct impacts of climate change (wildfires in California, hurricanes on Long Island/New Jersey, hurricanes in Florida), the main sources of climate knowledge for all participants are indirect. Indirect climate change knowledge refers to a source that does not come from a direct climate impact. Examples of indirect sources of knowledge mentioned by participants include reading a news source or watching a film.

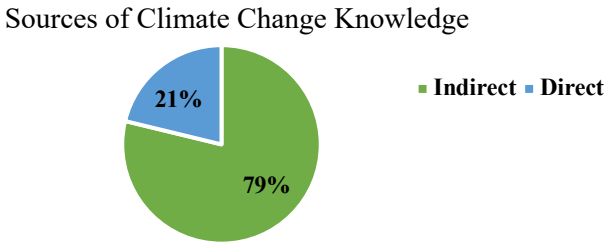

Figure 3.9: Sources of climate change knowledge: indirect versus direct. Out of all of the mentions of sources of eco-anxiety in interviews 21% of the mentions were direct while 79% were indirect. This information came from coding.

Personal versus institutional responsibility for climate change

Most (12/14) participants talked to some degree about the tension between individual versus institutional responsibility for climate change (such as switching to a vegan diet versus holding corporations accountable for their actions).

We don't really talk a lot about how, like big institutions are really responsible for this and like, I remember seeing a tweet from like, ExxonMobil, or something that was like, what are you doing to lower your like, greenhouse gas emissions or something like that? And it's like, what are you doing? Like, you're a huge company, like, you should be responsible for this, like, obviously, like individuals have responsibility to like, live sustainably as well. But I think like, just having more access to like resources that are just talking about, like, how important it is, and like, how much change like these big industries can make, if we get everyone on board and like, have a change in mentality and like, from a corporate like governmental level instead of like, individual?

Participant D

DISCUSSION

Introduction

My findings suggest that there is a relationship between action and the alleviation of eco-anxiety among members of the Climate Generation who are involved in environmental organizations at UVM. These findings support a dominant narrative found in existing literature that action helps individuals and communities confront their affective responses to climate change adaptively (Doherty, 2011; Clayton et. al. 2017; Lewis, 2018; Lertzman 2019; Hiser and Lynch 2020; Jaquette Ray 2020). For a variety of reasons, meaningful engagement in work with others through an environmental organization, seems to make subjects feel better. It appears that the cultivation of emotional resilience both personally and within communities is a prominent component of this narrative around action and eco-anxiety. Further, the recognition of one's capacity to act within their spheres of influence is a significant factor in both anxiety relief and the cultivation of resiliency.

As is often the case with qualitative research of this kind with a small sample size, the findings are many and it can be challenging to delineate a clear consensus about their larger meaning. That being said, through this discussion I will highlight several key and interrelated findings that I believe offer valuable insights into broader trends in the field of the affective dimension of climate change.

Manifestations of eco-anxiety

There is no debating the existence of eco-anxiety among participants in this study. Eco-anxiety manifested in a wide variety of ways which lands well in the literature about how eco-anxiety can take on many forms (Doherty, 2011; Castello, 2018; Pihkala 2018; Usher et., al, 2019; Pihkala, 2019 Pihkala 2020; Clayton 2020). While some participants spoke explicitly and

candidly about feeling anxious in the face of climate change, most talked about their eco-anxiety through a range of related emotions.

Pihkala (2020) highlights the connection between anxiety and a range of emotions. My participants expressed emotional states ranging from anger to guilt to powerlessness. Pihkala (2020) acknowledges how all of these emotional states are connected to eco-anxiety. Further, Pihkala writes "sometimes people consciously name the ecological crisis or climate crisis as a major—sometimes the major—source of their anxiety, and sometimes it is a factor which affects them unconsciously" (10). My findings about how eco-anxiety manifests in young people lands well in this context.

Academics as a source of eco-anxiety: lack of efficacy and overwhelm

Existing scholarship shows that climate change knowledge can be distressing. Furthering this distress is the feeling that nothing can be done about it which can lead to maladaptive responses such as denial or disavowal (Doherty, 2011; Lewis 2019). Academics emerged as a major source of eco-anxiety among my subjects. Further, the differences that many subjects discussed between their affective state while learning about climate change in academics versus while engaging with their organizations highlight the importance of a) not feeding into "crisis narratives" as described by Jaquette Ray (2020) and, relatedly, "infowhelm", as described by Houser (2020) and b) framing environmental problems in terms of solutions and acknowledging feasible leverage points within spheres of influence. This dichotomy presents an opportunity for transformative adaptation of environmental studies curriculum to help students feel efficacious rather than overwhelmed and hopeless.

My findings suggest that academics and higher education is a major source of eco-anxiety because it is largely *systems oriented* with messages of doom and gloom with few

avenues for meaningful engagement. The academic realm exposes students to a plethora of information about climate change and related environmental challenges that can be overwhelming. In fact, the introductory course to environmental studies at the University of Vermont, ENVS 001, is centered around grand environmental challenges. The amount of information can lead to anxiety and feelings of being overwhelmed in students. Although the intent among professors is to present students with a systems-thinking perspective for environmental challenges, the reality it seems is that many students do not have the capacity to absorb this information productively. As a result, the information appears to be problem-oriented environment which can be overwhelming especially for first-year students who may not have had this kind of education previously.

As demonstrated by the content of my interviews, people do not response well to "crisis narratives," as coined by Jaquette Ray. Participant G talked about how during her first year she took Environmental Studies 001 and was quickly overwhelmed by the information she was receiving, resulting in a complete lack of efficacy in the classroom. She said "it was just really overwhelming to just be shown all of these issues, but then to be told that there hasn't really been a solution established for these" problems. Participant B described her experience in the classroom as being very "Doomsday." She said she felt a kind of "panic" when confronted with very "daunting" "raw facts and figures." Participant A also spoke to this as well saying that she even switched her course of study because she was "super overwhelmed" after being "thrown into all this information" where the narrative was so depressing. This speaks to the existing narrative about the ineffectiveness of the "crisis narrative" and "infowhelm" when it comes to talking about climate change.

Environmental organizations: spheres of influence

Alternatively, environmental organizations are *solutions-oriented* and do not appear to elicit the same panic, overwhelm and anxiety that the classroom can bring about. Unlike the academic setting where the "crisis narrative" is seemingly prevalent, organizations – like the ones my interview subjects are engaged with – offer what I am going to call a solutions narrative.

The use of a "solutions" narrative to discuss the end goal for environmental challenges is somewhat contentious, limiting, and problematic. Climate change and the myriad interconnected environmental challenges of today do not have clear solutions. Rather, environmentalists within academia and beyond are in search of a path forward that lessens the impact of climate change and prepares humanity for the changes and challenges that are likely to occur in the near and distant future. For this reason, I am not suggesting that there is a clear-cut binary between academics and environmental organizations. However, for the purpose of understanding some significant differences in students' emotional states when navigating difference environmental spaces, it is useful.

It appears that many students turn to environmental organizations as a way to apply and make sense of their learning. Through their organizations, students are able to understand a) their spheres of influence, b) their capacity to act within their spheres of influence and c) what is beyond their sphere of influence (Figure 4.1). In this study, participants primarily talked about their environmental organizations being primarily solutions-oriented thus providing students with the tools they need to confront and address the knowledge they receive in the classroom. Participant N talked about feeling less overwhelmed while working in an organization and Participant E spoke explicitly about the solutions orientated nature of environmental organizations –

[O]rganizations are so solutions oriented. That's where it kind of gives me a little bit of like relief. I'm not really learning about you know…how we got 12 more years before we can't make any changes, but I'm learning about Bill McKibben and what he's up to and how he's saving the world and …we're making SCF proposal to try to make a difference on our campus.

As aforementioned, this "saving the world" narrative that Participant E speaks to does not convey the entire story of the intent and impact of environmental action. However, by talking about Bill McKibben "saving the world" Participant E suggests that seeing McKibben act within his own sphere of influence is motivating and encouraging. It is less about believing that the world is really going to be saved and more about how witnessing action at various levels and spheres is validating and motivating for continued action within one's sphere of influence.

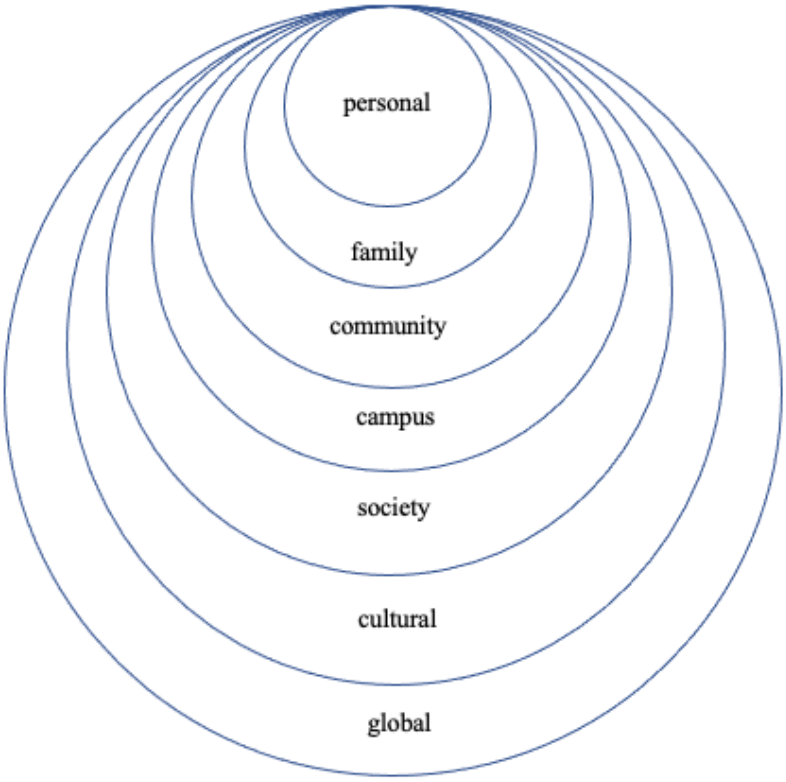

Figure 4.1: Spheres of influence. Adapted from Sarah Jaquette Ray (2020)

Action as an antidote for eco-anxiety: cultivation of efficacy

My data contributes to an existing narrative within the literature that involvement in environmental organizations is helpful in alleviating eco-anxiety because it cultivates a sense of self and collective efficacy. Furthermore, this efficacy is cultivated through working in a community of mutual understanding where one's actions feel impactful and significant. It appears that feeling efficacious within one's self or one's community comes, at least in part, from recognition of capacity to act within one's spheres of influence.

Clayton et. al. (2017) describes self-efficacy as one's belief in their own ability to succeed in a situation or to accomplish a task and Jaquette Ray (2020) emphasizes the importance of recognizing one's sphere of influence when it comes to one's personal capacity to act on climate change. Van Susteren (2020) expands on this concept arguing that "becoming an agent of change also dials down your emotional inflammation because the positive ripple effects of being proactive offset the feeling of helplessness" (194).

Twelve out of fourteen participants alluded to the idea that involvement in their organization led to feelings of efficacy and eleven out of fourteen alluded to the significance of community within their organizations. Jaquette Ray writes "our sense of efficacy in the face of seemingly insurmountable obstacles rests on redefining what we think of as meaningful actions in the world, and what we think of as our role in that work" (59). Participant C articulated feeling like her work is meaningful in part because of her ability to make "tangible changes" within her organization i.e., her community sphere of influence. Participant D describes feeling like her work is fulfilling as she is "making a difference environmentally," even if her actions alone are not directly solving the problem of climate change. Participant F spoke about feeling like although her actions "may seem like really small" in the grand scheme she is contributing to a

larger goal. These testimonies demonstrate a recognition of one's sphere of influence which seems to relieve some anxieties about never being able to do enough to act on climate.

Action as an antidote for eco-anxiety: cultivation of community

Furthermore, as discussed by Buttigieg and Pace (2013) collective efficacy is cultivated as a result of working together in community on a common goal. Relatedly, Jaquette Ray (2020) emphasizes that "not feeling alone is probably the most important prescription for long-term resilience" (72). My interview subjects reflected the idea that collective efficacy and not feeling alone within their community is incredibly important for dealing with climate change-related emotions. Participant N talked about how once she became involved with her organization, she realized she was not alone in her efforts to effect environmental change. She articulated that "sitting in a room full of people who are doing the work that needs to happen, just flips my disappointment to hope because there's going to be very different leaders in our future and…I'm sitting in a room full of them." Participant C talked about feeling "a lot of unity" through her involvement. Through environmental involvement Participant A said, "I find it helpful because it makes me feel not alone." Participant G spoke about the community within their organization in terms of "knowing that there's a bunch of other people that are passionate about the same issues as me and are, like actively trying to make a difference – that's very inspiring." On this Jaquette Ray (2020) writes "if we think of ourselves as acting alone, we feel that there's not time to step out of the fray to recharge ourselves. If we recognize that we are a collective – a choir of voices – we know that the song will continue while we are recovering our breath" (133). Community appears to stand out as a reason for why participating in environmental organizations helps to relieve eco-anxiety.

Cultivating Resilience

It is exceedingly important to note that action alone is not a silver bullet to relieving young people from the weight of eco-anxiety. In fact, it appears that action cannot serve as a real antidote to eco-anxiety unless long-term emotional resiliency is cultivated. Resiliency is the key to long-term engagement with heavy content such as climate change (Jaquette Ray 2020; Doherty 2018; Doppelt, 2016).

Emotional resiliency is defined as an individual's ability to produce positive emotions in the face of negative emotional stimulation, and to recover quickly from negative emotional experiences (Scholes, 2013). Relatedly, psychological resilience is the ability of an individual to withstand stressors in the face of adversity (Rutter, 2006). Jaquette Ray (2020) emphasizes that "resilience is the key to staying the course and remaining effective agents of change in the long term" (57). Further, Doppelt (2016) argues that there are three main components to consider when thinking about climate disruption the third of which has to do with building individual and collective resiliency. Pihkala (2018) highlights the importance of hope for cultivating resilience.

Participant E talked about how in some ways his involvement in CCALL feels like "group therapy" and "a vibe of decompression and mindfulness" which speaks to what Jaquette Ray (2020) and Kelsey (2020) are talking about with regard to the connection between mindfulness and resilience. In this space, CCALL provided Participant E with a combination of action and mindfulness which appears to have helped him cultivate a kind of personal resiliency to continue this work despite the heaviness of the content.

Personal versus institutional responsibility for climate change

The ability or lack thereof to grapple with and come to peace with – or at least understand with a critical lens -- the tension between institutional and personal responsibility for climate change appears to be important with regard to the amount of and impact of eco-anxiety

one feels (Figure 4.1). Those who are able to shift from thinking about climate change as a personal burden to thinking about it in all its complexity, and specifically from the perspective of institutional responsibility, take an important step towards cultivating resiliency.

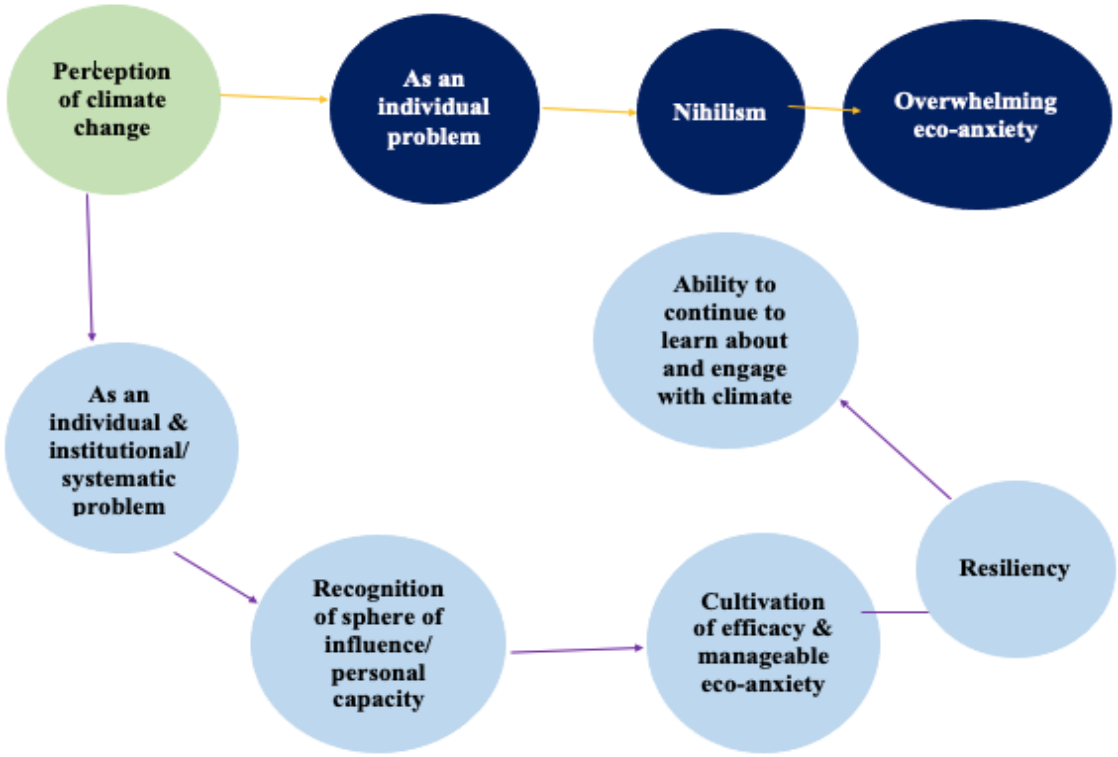

Figure 4.2: Relationship between individual versus institutional thinking about climate change and resiliency. Those with the ability to understand climate change as both an institutional and individual challenge appear to be better able to develop resilience. Those who only see climate change as an individual challenge seem to get stuck in nihilism and overwhelming anxiety.

People who hold a deep personal responsibility for climate change seem to be more anxious and overwhelmed although the relationship is complicated. For many participants, entering college marked a shift in this thinking. The ability to think about the issue more systematically, although overwhelming in its own right, allowed participants to let go of some of that personal burden. The "I'm never doing enough" mentality is debilitating whereas the ability to recognize one's own capacity for influence builds resilience. Participant M talked about his experience thinking about climate change as a systemic issue and how that has helped him feel less anxious and overwhelmed about the crisis from the standpoint as an individual.

There seems to be two important things happening with regard to the shift from individual thinking to institutional/systemic thinking. First, this ability to mindset thinking relieves anxiety and to some degree cultivates resilience by allowing participants to get away from obsessive thinking about their individual impact (i.e., going zero waste, going vegan). Many participants talked about how upon first learning about the enormity of climate change they immediately felt a need to take huge personal actions. Participant D spoke candidly about this, saying that in high school she went vegan and tryed to be zero waste after taking on "a lot of personal responsibility for climate change."

However, once one is able to look at the bigger picture and realize the burden to tackle climate change is not solely the responsibility of individual people, more clarity emerges and the emotional reaction to climate change is less overwhelming. Participant D went on to describe a shift that occurred when she started college when she realized it was not necessarily the role of an individual to tackle climate change alone but rather, we should be holding big institutions accountable for their actions.

Furthermore, systems thinking allows people to avoid the trap of eco-nihilism, a term Jaquette Ray (2020) describes as "the notion that we should just erase ourselves because we are so bad for the planet" (40). Second, it allows people to understand their positionality in terms of the climate crisis (i.e., level of privilege). Furthermore, and very importantly, it allows people to understand how the effects of climate change are products of colonialism and capitalism and are, therefore, intrinsically racist and unequally distributed. By recognizing this positionality, Jaquette Ray goes on to say that "cultivating existential resilience is a *necessity for* – not a *distraction from* – the work changing the social structures that create these myriad forms of interlinked oppression" (28). There is a difference between simply recognizing this tension and

embracing what that tension means for one's personal understanding of and emotional reaction to climate change.

The ability to take stock, step back and recognize the limitations of one's own capacity to contribute to the work seems like a sign of resiliency as described by Doherty (2018). Rather than forging onward on the same path without change of course or acknowledgement of one's emotions, being able to adapt and change course shows resiliency. Participant A talked about how she was able to take stock of how her education was negatively impacting her mental state and shift direction by joining the Sunrise Movement. This ability to adapt exemplifies resiliency.

CONCLUSION

This research sought to address the question: does action through involvement with environmental organizations serve as an antidote for ecological anxiety and its attendant psychological ills among members of the climate generation? My findings through interview testimony from 14 UVM students who are involved in various environmental organizations suggest that environmental organizations do serve as an antidote for ecological anxiety and its attendant psychological ills among members of the climate generation. To conclude, I wish to highlight several intellectual and practical takeaways from this research. Further, I will offer some insight into possible for future avenues of study beyond this research.

I offer four intellectual takeaways. First, eco-anxiety is a real and pervasive issue that can and does impact people – especially young people who are knowledgeable about environmental challenges such as climate change.

Second, there are many sources of eco-anxiety. The main sources of eco-anxiety among my participants are politics and institutional behavior, academics and higher education, and perceived lack of self-efficacy.

Third, involvement with environmental organizations appears to help alleviate eco-anxiety to some degree. The primary driver of this relationship appears to be the way involvement in organizations help young people feel efficacious within a community where they are able to act appropriately within a sphere of influence.

Fourth, there seems to be a relationship between efficacy – perceived or real – and resiliency which ultimately allows people to continue their involvement and activism amidst eco-anxiety and other challenges. To navigate today's world is to face challenge, resistance, polarization and grief. However, there is also joy, softness, humor and love to be found – through connection, community, and engagement. My research suggests that engagement in activities that foster connection, community and engagement is vital to people's well-being.

I offer two practical takeaways. First, the way we talk, teach, and communicate information about climate change matters. It has serious implications for how the next generation of leaders and thinkers perceives environmental challenges and their efficacy in addressing said challenges. It has been demonstrated in the literature on eco-anxiety and through this research that a barrage of data, charts and information about how the world is on fire and we are all doomed is at best not motivating for action and at worst completely debilitating and damaging. To frame environmental challenges in terms of individual burden is not only damaging to individuals in terms of their perceived efficacy to effect change but it is also insensitive to the various forms of inequity and injustice that exist when it comes to access to resources. There is great potential to tap into what is happening in the micro-ecosystems that are

environmental organizations – community, creativity, connection, and validation – when it comes to other environments whether that be the classroom or in other spaces where humans come together.

Second, the affective dimension of climate change is equally as important as any other dimension. To ignore or dismiss the emotions that come up around climate change is harmful both to the individual and the movement at large. It is important to honor all emotions – good and bad – that come up around the topic of climate change. Our grief, despair and anxiety are all rooted in love and as we continue to confront the climate crisis we must attend to these emotions.

This research serves as a case study within a framework of the affective dimension of climate change and there are many avenues for future inquiry. I offer two primary suggestions. First, future work on this topic might seek to understand how eco-anxiety differs across demographics whether they be racial, geographic, socioeconomic, educational or otherwise as my population was small and not diverse. Climate change and eco-anxiety impact populations differently and, therefore, inquiry into these differences is not only interesting intellectually but necessary in order to forge a path ahead that is equitable and inclusive.

Second, more research is needed to understand the relationship between environmental action and resilience. Resilience appears to be the key to long-term engagement with climate change. Whether that resilience can be cultivated in a classroom, at a climate strike, through conversation with friends and family or through a combination or some other means is important to understand.

The way ahead will require not just the science of climate, but the science of emotions, to help us balance apathy, fear and despair with efficacy, compassion and desire.

Sarah Jaquette Ray

Appendices

Appendix 1: Emotions Survey

Instructions:

1. Read through the list of emotions and highlight using yellow **all** emotions that resonate with you feeling about climate change
2. Read through your highlighted emotions again and highlight the top **five** in light blue

FEAR	ANGER	SADNESS	SHAME	HOPE	OTHER
in denial powerless trepidatious uncertain apprehensive speechless helpless detached dumb worried unsure mystified skeptical nervous stressed concerned alarmed pressured fearful shocked overwhelmed scared terrified	it sucks irritated cheated distrustful annoyed exasperated distressed frustrated angry	Heavy disappointed pessimistic sad terrible depressed resigned discouraged dampered heartbroken devastated hopeless bereft despairing disconsolate	Ashamed Dumb ignorant embarrassed guilty cringing gross shame visceral reaction nauseous mortified	Humble grateful empathetic interested engaged curious intellectual curiosity opinionated knowledgeable enlightened excited concerned motivated inspired creative confident reassured responsible empowered determined optimistic hopeful	Awe Amazed Enthralled Fascinated Elation surprise Responsibility Moral duty Resolve Insignificant Misunderstood Vulnerable Bewildered Horrified Triggered Stifled Conflicted Complacent Exhausted Tired numb

Appendix 2: Research Subject Recruitment Email

Dear X,

My name is Isabel Coppola and I am a fourth-year undergraduate student at the University of Vermont pursuing degrees in Environmental Studies and Political Science. I am conducting an honors thesis about climate anxiety among young people at UVM who are involved with environmental organizations on campus. I am seeking interview subjects for this project and am wondering if you and other members of [ ] would be interested in being participant(s). Some sample questions I may ask you are:

- How do you feel about the work you are doing in your organization?
- How does your knowledge of climate change make you feel?
- Have you ever experienced activist burnout out? Can you talk about that experience a little bit? What led to the burnout and how did you respond to/deal with it?

If this seems like something you would be interested in, please let me know so that we can schedule an interview over zoom! Further, I would be happy to talk to your organization at one of your weekly meetings to introduce myself and talk about my work a little more!

Attached is a document containing deeper information about my research procedures!

Thank you for your consideration!

Isabel Coppola (she/her)

Senator, Committee on the Environment
University of Vermont '21
College of Arts and Sciences
Political Science B.A
Environmental Studies B.A
(603) 313-2254

Appendix 3: Research Information Sheet

Research Information Sheet

Title of Study: Eco-Anxiety in "the Climate Generation": Is Action an Antidote?

Principal Investigator (PI): Isabel G. Coppola

Faculty Sponsor: Rachelle K. Gould

Funder: Internal Funding, College

Introduction
You are being invited to take part in this research study because you are a member of an environmental organization at the University of Vermont and are over the age of 18. This study is being conducted by Isabel G. Coppola at the University of Vermont.

Purpose
This study is being conducted in order to better understand if and how action through participation in environmental organizations relieves climate anxiety among members of "the climate generation." This study is also being conducted to partially fulfil degree requirements for a BA in Environmental Studies at UVM.

Study Procedures
If you take part in the study, you will be asked to answer a series of semi-structured questions about your experience as a member of an environmental organization and how that engagement interacts with any worry or anxiety you may have surrounding the environment.

As a participant in this research study, you will first be asked to fill out a short survey about the emotions you feel about the environment and climate change. Then, you will be asked to participate in an approximately hour long interview with Isabel Coppola, the Principle Investigator. The interview will be conducted via Microsoft Teams due to COVID-19 health regulations and will be recorded. Following the interview, I will be transcribing the interview responses for analysis and coding later on.

All questions, aside from demographic questions, will be open-ended and participants can choose to skip or not answer any question they choose. An example of a question I may ask is: How does your knowledge of/experience with learning about climate change and other ecological problems impact you emotionally/mentally? A participant may choose to withdraw themselves from the study at any point in time for any reason.

The active participation of the subject will be approximately one hour for the interview. However, I will allow and encourage participants to read any analyses I do of their responses in order to ensure I am accurately portraying them as participants.

Benefits
As a participant in this research study, there may not direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks
We will do our best to protect the information we collect from you and avoid any potential risk for an accidental breach of confidentiality.

Costs
There will be no costs to you for participation in this research study.

Compensation
You will not be paid for taking part in this study.

Confidentiality
All information collected about you during the course of this study will be stored with a code name or number so that we are able to match you to your answers.

I, as the Primary Investigator, will be the only individual with access to the interview recordings which will be saved to a folder on my laptop that is password protected. I will use your name if you indicate wanting to have your name attached but otherwise you will be listed as "Participant X, Member of X, Age X." Interviews will be recorded using Microsoft Teams' recording feature. Following transcription, these recordings will be permanently deleted from my desktop. Participant names will be kept separate from interview responses and will only be attached if the participant wishes to have their first name included in the report of this research. No last names will be included.

Voluntary Participation/Withdrawal
Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study.

Questions
If you have any questions about this study now or in the future, you may contact me Isabel Coppola at the following phone number (603) 313-254. If you have questions or concerns about your rights as a research participant, then you may contact the Director of the Research Protections Office at (802) 656-5040.

It is recommended you print this information sheet for your records before continuing.

Appendix 4: Interview Questions

Background:

1. Name:
2. Pronouns:
3. Age:
4. Year at University:
5. Major/Primary Field of Study:
6. Race:

Activity/Action:

1. Can you describe (fill in the blank organization or group) generally? What is the nature of the work?
    a. And more specifically how would you describe your role in (fill in the blank organization or group)?
    b. Can you talk specifically about some of the events/projects you work on with (fill in the blank organization)?
    c. How long have you been involved with this group? How often do you meet with (fill in the blank organization or group) for meetings or other events?
2. How did you get involved with (fill in the blank organization or group)? Is there anything in particular that led to your involvement?
3. Why are you drawn to environmental work more generally and what causes you to continue doing the work? What life experiences, if any, led you to your involvement with (fill in the blank organization or group)?
4. When you are participating in (fill in the blank organization or group) how do you feel?
    a. What is meaningful to you about your work? Why is this meaningful? (meaningfulness of work)
5. Can you give me an example of a time when you felt particularly empowered (try to use their own words) by your work with (fill in the blank organization or group)?
    a. What was it about this event or situation that felt particularly meaningful or important?
        i. Why?
    b. Make sure to have them describe.
6. Have you ever experienced activist or environmentalist burnout? Can you talk about that experience a little bit? What led to the burnout and how did you respond to/deal with it?
    a. Does participating in (fill in the blank organization or group) help with these feelings or contribute to this?

Climate/Eco Anxiety:

1. Do you remember the first time you learned about climate change? Can you talk about that experience? Do you remember how it made you feel?
    a. Since that moment or experience how, if at all, have your emotions about climate change changed/evolved?

2. Describe your experience with climate change impacts. More generally how has climate change impacted your life? Have you directly experienced a climate-related event like a flood or a wildfire? If not, how have you received your understanding of climate events?
    i. What physical effects have you noticed?
    ii. What thoughts or ideas have impacted your relationship with climate change?
3. You indicated on the pre-survey that climate change makes you feel (blank negative emotion). Can you tell me more about that?
    a. What makes you feel this way? Is it general or more specific?
    b. Can you give me a specific memory or example of when you felt particularly (blank negative emotion)?
    c. When you feel (blank negative emotion), how do you respond? Do you have coping mechanisms?
        i. If you do, can you talk about them? What are they, how did they develop?
        ii. If you do not, can you tell me a little more about why?
4. Does your involvement with (fill in the blank organization or group) interact with these feelings, if at all? Does it contribute to these feelings? Make them go away? Explain.
5. How does climate change impact your thinking about the future?
6. Academics vs organizational involvement – how are your emotions different?

Conclusion

1. What does a climate resilient, sustainable future look like to you?
    a. Do you see yourself as playing a role in the creation of this climate resilient world?
    b. If you do see yourself playing a role what does that look like?
    c. If you do not see yourself playing a role, why not?
2. Is there anything else you would like to talk about or go deeper on that we did not get to?

(end of interview)

Appendix 5: Codebook

Codebook

Nodes

Name	Description	Files	References
Action as antidote for eco-anxiety		13	82
Outside of organization	action taken beyond confines of environmental organization that serves as an antidote for eco-anxiety	9	23
Classes or course work		1	3
Media	activity related to some media form (video games, movies, music etc.) that serves as an antidote for eco-anxiety	3	3
Nature	activity occurring in nature (hiking, biking, camping etc.) that serves as antidote for eco-anxiety	2	3
Support network	activity related to interacting with one's support network beyond environmental organization (family member, roommate, friend etc.) that serves as an antidote for eco-anxiety	6	10
Within organization	action taken within environmental organization	13	66
Creative outlet	action within environmental organization serving as an antidote for eco-anxiety through creativity (art making etc.)	2	2
Cultivation of efficacy	action within environmental organization serving as an antidote for eco-anxiety through creating feelings of efficacy	12	32
Cultivation of hope	action within environmental organization serving as an antidote for eco-anxiety through creating feelings of hope or hopefulness	2	4
Provision of place of respite, safe space	when a participant talks generally about how involvement in their organization provides a place to relax, take a break etc.	4	9
Sense of community	action within environmental organization serving as an antidote for eco-anxiety through creating a sense of community,	11	25

Name	Description	Files	References
	belonging and purpose		
COVID	refers to a participant mentioning the COVID-19 pandemic	5	8
Eco-anxiety	any reference to the wide array of emotions and feelings around the climate and ecological crisis	14	125
Manifestations of eco-anxiety	how eco-anxiety is showing up in participants	14	81
Anger		3	3
Burnout	when a participant talks explicitly about feeling burned out about climate change	5	9
Existential anxiety	expression of eco-anxiety with reference to the hugeness of environmental problems	10	19
Future anxiety	anxiety related to thinking about the future	9	12
Family planning	future anxiety specifically related to thinking about family planning (whether or not to have children etc.)	8	8
Geographic planning	future anxiety specifically related to thinking about where to live geographically due to climate-related concerns	2	2
Fear	when a participant explicitly talks about being fearful or scared with regard to climate change	4	6
Frustration or disappointment	when a participant explicitly talks about frustration or disappointment	2	3
Grief or sadness	when a participant talks explicitly about feeling grief or sadness around climate change	6	7
Guilt	expression of feelings of guilt surrounding climate crisis	5	6
Heaviness	when a participant talks explicitly about feeling heaviness around climate change	1	1
Hopelessness	when a participant talks explicitly about feeling hopeless around climate change	2	2
Numb or disconnected	when a participant explicitly talks about feeling numb or disconnected with regard to climate change	2	3
Overwhelm	when a participant explicitly says that they felt overwhelmed in relation to climate change	4	6
Panic	When a participant explicitly states saying	1	2

Name	Description	Files	References
	they feel panic with regard to feelings about climate change		
Powerless	when a participant talks explicitly about feeling powerless with regard to climate change	1	1
Solastalgia	expression of mourning, grief etc. about place-based changes (sea level rise, dying ecosystems)	3	4
Worry or nervous or distressed	when a participant explicitly talks about being worried with regard to climate change	4	6
Sources of eco-anxiety	what is causing eco-anxiety in participants	14	90
Academics and higher education	expression of academics/higher education being the source of eco-anxiety (intensity of content etc.)	9	19
Culture of denial	eco-anxiety that is caused by doubters/deniers of the severity/existence of the climate crisis	3	3
Environmental organization	when participant talks about their environmental organization being a source of eco-anxiety (as defined in the context of this study)	7	12
Lack of self-efficacy		9	13
Media, news cycle, information broadly	reference to the media or news cycle causing eco-anxiety (info overload, 12-year report etc.)	8	13
Personal experience with climate event	whether directly or indirectly having a climate event cause eco-anxiety	5	7
Politics and institutional behavior	anything relating to the failure of politicians and institutions to take climate crisis seriously causing eco-anxiety	11	24
Timeline of problem		4	4
Environmental Action	any action taken within environmental organization	14	70
Feelings about organization	refers to a participants' discussion of their feelings about their environmental organization and the work they do within said organization broadly	13	41
Motivation or reason for action	what causes participant to take action	14	51
Career or opportunity-driven	action taken due to career ambitions or personal opportunities	4	5

Name	Description	Files	References
Hugeness and unavoidability of problem	action take because of the apparent unavoidability of problem	6	9
Interest in nature	action taken because of interest in nature or outdoors broadly	2	2
Moral duty or responsibility	action taken as a result of feeling it is one's moral duty or personal responsibility	8	18
Other		10	20
Personal versus institutional responsibility for climate change	when participants discuss anything related to thinking about who bears responsibility for climate change	12	35
Responses to ecological anxiety	how a participant responds either affectively or physically to their eco-anxiety	12	26
Sources of climate change knowledge		14	31
Direct	when a participant talks about a direct climate impact informing their knowledge on climate change	6	7
Indirect	when a participant talks about learning about climate change indirectly i.e., through media, academics or some other source; could also refer to getting secondary knowledge about climate change from a family member or friend who has experienced a direct impact	14	26

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