Environmental crises and climate change:

Eco-anxiety among young people and the urgent need for a transformative response

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Source: A. Lammel

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The world faces a threefold environmental crisis: climate change, biodiversity loss, and pollution. Awareness of these crises is growing, as more and more organizations attempt to control harmful human activities. Despite these efforts, the changes made are insufficient. The media delivers alarming news on a daily basis, triggering stress that can turn into eco-anxiety, a chronic fear of environmental catastrophe which in turn can lead to depression and states of anxiety. Climate anxiety, a form of eco-anxiety, is a major threat to mental health in the 21st century. It impacts mental health directly via extreme meteorological events, indirectly via consequences such as famine, and vicariously via the media. Young people are particularly susceptible: 47% of young adults in the US state that it impacts their day-to-day lives. Children are especially vulnerable and may develop eco-anxiety from as young as 8 years old. Tackling this widespread mental health problem, linked to a variety of factors, requires taking action that addresses the root of the problem: education, provision of more green spaces, biophilic design, responsible attitudes, a long-term vision on the part of politicians and businesses, and the transformation of our systems. Governments must protect young people, recognize their fears, and involve them in decision-making. Urgent collective action is essential if we are to protect the mental health of younger generations.

> *"I think there will be lots of storms in France because it has been so hot that the weather will need to catch up and all the water in the sky will fall at once. Perhaps France will become an island. In 30 years from now the planet will be damaged, perhaps there will be no more trees because of all the toxic products, and since they help us breathe we will die without them."*
>
> Julie, age 11, Paris region, 2011

INTRODUCTION

Not a day goes by without alarming new reports in the media about climate change, biodiversity loss, and the ever-growing pollution of water, sea, land, and air. Even if they have no direct personal experience of these phenomena, people are nonetheless affected by them. They feel a sense of cognitive vulnerability in response to the complexity of the problems and an inability to act when faced with their immensity, which triggers powerful negative emotional responses.

Imagine coming home one day to find water damage, a smell of mold, dust everywhere, and an insect invasion. You feel stress – a normal reaction – and use your cognitive capacities to think about how to make your apartment livable again.

But how can we manage stress in the face of a planet that is out-of-balance, threatened, and threatening, and the inertia of human systems in finding effective and lasting solutions? In this case, stress turns into powerful negative emotions, a form of anxiety labelled in 2000 by psychiatrists and psychologists as eco-anxiety.

THE SITUATION TODAY: A THREEFOLD ENVIRONMENTAL CRISIS AND AN INADEQUATE RESPONSE

The world faces a threefold environmental crisis as well as soil degradation:

- climate change: the Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC) published in March 2021 (working group 1), estimated that global warming will reach 1.5°C above the pre-industrial era by the early 2030s, irrespective of future greenhouse gas emissions scenarios;
- biodiversity loss: according to the 2019 Global Assessment Report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), one million plant and animal species currently face extinction;
- pollution: it is estimated that pollution is responsible for 9 million deaths worldwide every year, with pollution-related deaths having risen by 66% over the last two decades.[1]

In addition to this threefold crisis is the issue of soil degradation. In 2022, the United Nations Convention to Combat Desertification (UNCDD) sounded the alarm in a report stating that 40% of land worldwide was now degraded (up from 25% in 2017), a fact that directly impacts half the world's population and threatens half of global GDP.

Awareness of these global crises has grown significantly in recent years. The multiplication of international and national bodies set up to regulate harmful human activities is a perfect illustration of the scale of the problems. However, despite all the efforts and some progress, the signs point to the fact that the changes needed to rebalance the world's biophysical environment are very far from being achieved.

THE PSYCHOLOGICAL IMPACT OF THE ENVIRONMENTAL CRISIS: ECO-ANXIETY

States of anxiety relating to the dangers of pesticide use or the explosion of the Chernobyl reactor have been recognized since the 1960s: they were therefore already linked to environmental risks. The term eco-anxiety, a specific form of anxiety, only appeared post-2000. Eco-anxiety can be described as a persistent sense of anxiousness relating to the degradation of nature and the natural environment. It is a feeling of loss, a sense that the developmental "niche" we were attached to has been altered. The concept of biophilia[2] is often cited since it refers to our affinity to nature, which is threatened by the technological world based on constant increases in production and consumption. There may also be a sense of losing identity and continuity in the line of living beings, free and protected by balanced ecosystems that evolve gradually over millions of years.[3]

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Eco-anxiety is not recognized as a specific pathology by the DSM-5.[4] The American Psychological Association defines it as "chronic fear of environmental doom."[5] This mental state includes excessive worry, anxiety and persistent stress about the devastating potential effects that climate change will have in the future and, naturally, on the young people of today and tomorrow. The scientific literature describes the presence of negative emotions such as fear, pain, sadness, anger, and a sense of guilt as well as frustration. People afflicted with eco-anxiety can feel, for example, that current efforts to cut greenhouse gas emissions are an inadequate response to climate emergency. This form of anxiety can provoke genuine mental health issues: depression, states of anxiety, and stress-related illnesses.

1 UNEP. (2024). How science-policy bodies are driving solutions to planetary crises. https://www.unep.org/news-and-stories/story/how-science-policy-bodies-are-driving-solutions-planetary-crises.

2 Wilson, E. O. (1986). Biophilia. Harvard University Press.

3 Passmore, H. A., Lutz, P. K., & Howell, A. J. (2023). Eco-anxiety: A cascade of fundamental existential anxieties. Journal of Constructivist Psychology, 36(2), 138-153.

4 Fifth and most recent edition of the Diagnostic and Statistical Manual of Mental Disorders published by the American Psychiatric Association.

5 APA and ecoAmerica, 2017.

Source: A. Lammel

A SPECIFIC FORM OF ECO-ANXIETY: CLIMATE ANXIETY

According to an article in The Lancet, "climate change could be the biggest global mental health threat of the 21st century."[6] In this article we will focus on a specific form of eco-anxiety: climate anxiety.

Climate changes can impact mental health in three manners: directly, indirectly and vicariously.[7]

- Directly: the experience of extreme meteorological events can trigger post-traumatic syndromes, depression and anxiety, even thoughts of suicide.
- Indirectly: indirect effects include consequences of climate change such as famine related to droughts, migration, and property loss. These increase cognitive vulnerability and open the door to anxiety and depression.
- Vicariously: even where individuals are not directly or indirectly impacted by climate change, their mental health can still be compromised. In this case we talk of proxy effects: media coverage means people are aware of the changes already happening and often exposed to catastrophic predictions for the future, and they can develop eco-anxiety as a result.

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The literature distinguishes between different states of mental health linked to climate crises, but also to the two other crises cited in the introduction (biodiversity loss and pollution). Ecological grief refers to a mental state characterized by sadness and pain triggered by changes to ecosystems. Another similar psychological phenomenon is known as "solastalgia", a form of painful nostalgia caused by the loss of untouched nature. These forms of climate anxiety are linked to humans' innate need to belong to a healthy world. The concept generally evokes a feeling that is omnipresent among indigenous and local peoples, now identified by western scientists as the "One Health" concept, a single health that encompasses all living beings and ecosystems. Human health can no longer be seen as distinct from the health of other life forms and balanced ecosystems.

Psychologists are currently working on tools for identifying climate anxiety. Clayton and Karazsai[8] have, for example, published a method to measure it. A five-point Likert questionnaire[9] offers 13 suggestions, along the lines of "I have nightmares about climate change." This tool has been validated for the American population and is adapted for use in other countries. These sorts of scales of climate anxiety make it possible to identify the extent of the phenomenon.

CLIMATE ANXIETY: A GROWING THREAT TO THE MENTAL HEALTH OF YOUNG PEOPLE AND CHILDREN

A study in the USA shows that 68% of respondents feel at least a little eco-anxiety in relation to climate change. Young adults aged 18 to 34 are particularly concerned, with 47% of them declaring that climate change-related stress impacts their daily lives. Climate anxiety knows no borders when it comes to children and young people. A study in 10 countries involving 10,000 children and young people aged 16 to 25[10] shows how widespread the problem is. A large majority of the young people questioned stated that they are very or extremely worried by the effects of climate change ***(Figure 1)***. Respondents often cited the same negative emotions as adults: sadness, anxiety, anger, powerlessness, and guilt. Over 45% of respondents declared that climate change was a source of chronic stress for them.

Young people are thus very worried about the future and feel a sense of despair and betrayal toward adults and governments. The study suggests that lack of government action in the face of climate change contributes to psychological stress among children and young people, as well as to a sense of moral injustice.

6 Costello, A., Abbas, M., Allen, A., Ball, S., Bell, S., Bellamy, R., ... & Patterson, C. (2009). Managing the health effects of climate change: The Lancet and University College London Institute for Global Health Commission. The Lancet, 373(9676), 1693-1733.

7 Berry, H., Bowen, K., & Kjellstrom, T. (2010). Climate change and mental health: A causal pathways framework. International Journal of Public Health, 55(2), 123–132. https://doi.org/10.1007/s00038-009-0112-0.

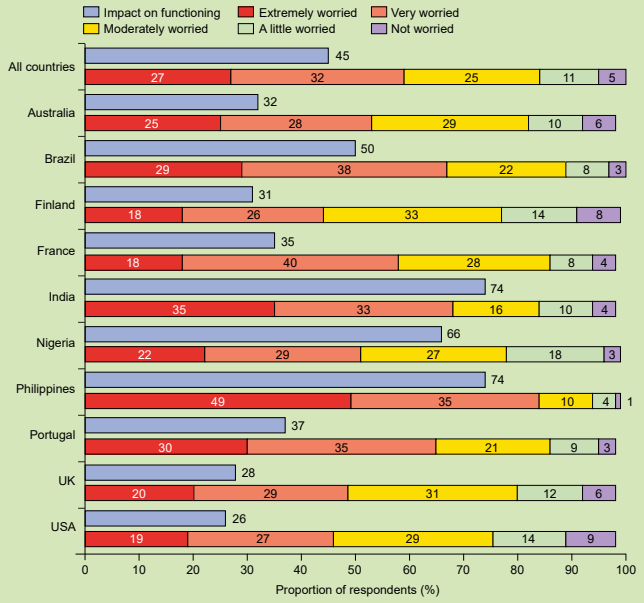
8 Clayton, S., & Karazsia, B. T. (2020). Development and validation of a measure of climate change anxiety. Journal of environmental psychology, 69, 101434.

9 Likert scale questions generally comprise five points (totally disagree, disagree, neutral, agree, totally agree).

10 Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., ... & Van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet Planetary Health, 5(12), e863-e873.

Figure 1 also shows that the children and young people most exposed to climate risks, such as in the Philippines, India, or Portugal (because of forest fires), are more worried than those who live under more favorable climatic conditions and in countries that offer greater economic protection, such as Finland.

Figure 1: **Proportion sample reporting a negative impact on functioning due to their feelings about climate change and various levels of worry about it. Data for the whole sample (n=10,000) and by country (n=1,000 per country).**



Source: Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., ... & Van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet Planetary Health, 5(12), e863-e873. Figure 1.

The specific nature of eco-anxiety among younger children has been observed and studied from the age of 8.[11] Children spontaneously develop an environmental moral judgement that is mostly biocentric, meaning they believe the living world, not just humans, enjoys the same rights as people.[12] This concept is close to the notion of biophilia. With growing urban sprawl and the globalization of the virtual world, children have less and less contact with green spaces and water, despite the fact they are acknowledged as necessary for mental health. The absence of such contact can trigger nature-deficit disorders. These vulnerable children are then confronted with the dangers of climate change and the threat of environmental collapse directly, indirectly or vicariously.

A qualitative study was carried out in 2011 as part of the ACOCLI project (Cognitive Adaptation to Climate Change) which I coordinated and was supported by the French National Research Agency (ANR). The study questioned 80 children and teenagers in the Paris region aged from 11 to 14. Analysis of the data showed that already 13 years ago, children from the age of 11 experienced strong negative emotions when facing problems related to climate change (***see Figure 2***). During semi-structured individual interviews, the children expressed signs of anxiety, fear of the future, and a pessimistic outlook. The increasing seriousness of the climate crisis sadly bears out the truth of these predictions: temperatures have risen, flooding and extreme events are more frequent and widespread, species are disappearing, and the world is being unsettled by new diseases. The idea that life on earth will be extinguished emerges in children's imagination, threatening the construction of their identity. However, similar to what we are seeing with narratives of the climate crisis, a glimmer of hope and a desire to act are also emerging. The data corroborates recent studies cited above, clearly indicating that eco-anxiety is prevalent among children and young people, and that this is not a recent phenomenon.

Figure 2: **Topics raised concerning perceptions and predictions about climate change in semi-structured interviews with children aged 11 to 14 (n=80) in the Paris region in 2011 (ACOCLI project, ANR).**

1. **Observation of change:** children notice signs of global warming such as unusual temperatures and extreme meteorological phenomena.
2. **Impact on daily life:** they anticipate there will be changes in their daily life, such as more frequent storms or the transformation/disappearance of their environment.
3. **Fear of species loss:** some children mention melting icebergs and the disappearance of polar bears, indicating fears about the loss of animal species.
4. **Anxiety about the future:** children express concerns about the planet's future and are anxious about how the planet will look in 30 or 100 years' time, fearing extinction.
5. **Concerns about health and the environment:** they are worried about the impacts that climate change will have on human health and the environment, such as water shortages and an increasing number of illnesses.
6. **Frustration and sense of urgency:** they feel frustration and a sense of urgency, they want immediate action to be taken to combat global warming.
7. **Feelings of powerlessness and sadness:** some children express a feeling of powerlessness in the face of the scale of the problem, with little sense of what to do to remedy it.
8. **Mixture of pessimism and optimism:** the children oscillate between pessimism about the current situation and cautious optimism about the possibility of a better future if appropriate measures are put in place.
9. **Impact on behavior:** some children modify their behavior in response to their anxieties, by recycling, walking rather than taking powered transport, or by expressing a desire to work in fields that relate to the environment.
10. **Desire to act:** despite their anxiety, some children show a desire to act and help fight climate change, either through individual actions or by calling for collective actions.

11 Léger-Goodes, T., Malboeuf-Hurtubise, C., Mastine, T., Généreux, M., Paradis, P. O., & Camden, C. (2022). Eco-anxiety in children: A scoping review of the mental health impacts of the awareness of climate change. Frontiers in Psychology, 13, 872544.

12 Lesenecal, A., & Lammel, A. (2023). Comparative study of environmental moral judgment with and without education about sustainable development. In Psychological Applications and trends. inScience Press.

Eco-anxiety can be more pronounced among children than among adults. If we return to the analogy of discovering a house that has been temporarily abandoned, is contaminated and polluted, we recognize that children alone cannot restore it to a good condition. Faced with global environmental threats, they are even more vulnerable than adults since they are still developing and have high levels of cognitive vulnerability,[13] often characterized by naive and mistaken ideas in their understanding of the complex interactions between climate and human systems. This means they need support from adults. But how do they perceive this support?

CHILDREN AND YOUNG PEOPLE FACED WITH THE ADULT WORLD: THE URGENT NEED FOR TRANSFORMATIVE ACTION

Research tells us that there is a very strong correlation between eco-anxiety and the inaction of governments and businesses in response to environmental crises. The ever-widening chasm between "pro-environmental" messaging and concrete action reveals an absence of climate ethics that is a threat to future generations. This disconnect is not limited to the worlds of politics, finance and economics; it also applies to adult lifestyles and behaviors, further exacerbating the crisis of confidence experienced by young people and children.

The scientific literature describes this disconnect as a cognitive bias with deep cultural roots, characterized by the inability to align actions with rational and ethical principles. Climate ethics, which includes inter-species, inter-regional and inter-generational dimensions, is essential to responding to climate emergencies.[14] However, young people perceive this absence of environmental morality as a betrayal, amplifying their feelings of despair and anger and limiting their capacity to imagine solutions and deal with the problems.

Recent research shows that anger can be a key emotional driver for committing to the fight against the climate crisis.[15] However, without truly transformative action on the part of political and economic leaders, this anger risks turning into violence that would compromise any efforts to solve the crisis. A response that is systemic, global and ethical —radically different from the current model—is essential for successfully combating environmental crises and thus eco-anxiety.

While we wait for this necessary transformation to occur, the fast-developing field of environmental education can play a crucial role. It helps young people achieve a better understanding of climate challenges and to channel their energy into positive collective actions. The growing number of non-profits and initiatives encouraging young people to take action collectively is a sign that their voice is increasingly being taken seriously.

Eco-anxiety among young people is a warning signal that needs to be addressed as a matter of urgency. Restoring confidence and giving young people the wherewithal to make an active contribution to fighting environmental crises, particularly climate change, demands immediate, systemic, and profoundly ethical action. We need to take account of their views and fully incorporate them into decision-making processes if we are to build a sustainable future for the generations to come.

CONCLUSION

Eco-anxiety and climate anxiety are a major mental health problem among adults, young people and children worldwide, connected to factors that are psychosocial, environmental, cultural, economic, ethical, legal, and, of course, political.

The scientific literature has demonstrated that climate anxiety is a form of chronic stress that can have long-term negative implications for mental health and the ability to function in day-to-day life. Psychologists and psychiatrists, although always ready to address their patients' difficulties, cannot by themselves deal with this public health problem whose origins lie in multiple factors. Although their work is crucial, their efforts are equivalent to trying to put out a forest fire by tackling it tree by tree.

Action on a wider scale is required, attacking the root cause of the problem: through education, more green spaces, the incorporation of biophilic design, responsible attitudes, and a long-term vision on the part of politicians and businesses. The behavior of adults and human systems must undergo transformation in order to restore environmental health and, thereby, ensure that people enjoy good mental health. Governments have the power to act by acknowledging the fears of children and young people and making them central to policymaking. At this moment in time, urgent collective action is needed to protect the mental health of younger generations.

13 Lammel, A., Dugas, E., & Guillen, G. E. (2012). The contribution of cognitive psychology to studies of adaptation to climate change: the notion of cognitive vulnerability. VertigO, the electronic review for environmental sciences, 12(1).

14 Jones, R.N., A. Patwardhan, S.J. Cohen, S. Dessai, A. Lammel, R.J. Lempert, M.M.Q. Mirza, and H. von Storch, (2014). Foundations for decision making. In Climate Change 2014: Impacts, Adaptation, and Vulnerability. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 195-228.

15 Diffey, J., Wright, S., Uchendu, J. O., Masithi, S., Olude, A., Juma, D. O., ... & Lawrance, E. (2022). "Not about us without us" – the feelings and hopes of climate-concerned young people around the world. International Review of Psychiatry, 34(5), 499-509.


climate emergency
climate crisis
eco-anxiety
extinction