Climate change anxiety - a new prominent concept in climate literature, mass media, and political debate

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Abstract. Since climate change is one of the most important contemporary problems, this short note highlights climate change anxiety as a new concept that is increasingly present in political discourse, mass media, and climate literature as well. This note stands as an awareness of climate change emotions, since the resulting impact on the psyche is likely to be traumatic when people lose their homes, and other possessions, jobs, or witness the loss of life.
Key words: climate change, emotions, mental health.

Introduction. Scientific interest in climate change has been steadily growing over the past 30 decades. The study of climate change brings to the fore discussions and analyses about adaptation and mitigation strategies, impact, vulnerability, and, more recently, anxiety. Climate change is not only a burden on global health systems after physical injuries caused by environmental disasters, but also a psychological problem for those affected (Arcanjo 2019). Since climate change is one of the most important contemporary problems, this short note highlights climate change anxiety as a new concept that is increasingly present in political discourse, mass media, and climate literature as well.

Climate change as source of concern: **the red flags in the official documents**. Worldwide: *"Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years"; "Climate change is already affecting every inhabited region across the globe, with human influence contributing to many observed changes in weather and climate extremes"; "Global surface temperature will continue to increase until at least mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO_2 and other greenhouse gas emissions occur in the coming decades."* (IPCC 2021).

In Asia: *"People living in low-lying coastal zones and flood plains are probably most at risk from climate change impacts in Asia. Half of Asia's urban population lives in these areas. Compounding the risk for coastal communities, Asia has more than 90% of the global population exposed to tropical cyclones."* (Hijioka et al 2014).

In Africa: *"In the drought-prone sub-Saharan African countries, the number of undernourished people has increased by 45.6% since 2012 (...) A significant cold spell affected parts of North Africa in mid-January. In Algeria, snow depths reached 55 cm at Souk Ahras, while temperatures fell to between -7°C and -9°C at some sites."* (World Meteorological Organization 2020).

In the US: *"By 2030, the impacts of climate change, other global environmental changes, and socioeconomic changes are projected to adversely affect food availability in the U.S. (...) At CO_2 concentrations expected later in the century, global projections indicated there will be hundreds of millions more people at risk of food insecurity and micronutrient deficiencies."* (National Academies of Sciences, Engineering, and Medicine 2 2021).

In Australia: *"Around 30,000 km of roads across Australia are at risk from a 1.1 meter sea-level rise, with housing and infrastructure at risk valued at more than $226 billion (...) A study of southeast Australia has projected that the number of fire danger days rated at 'very high' and above could double by 2050, under high emission climate scenarios."* (Australian Academy of Science 2021).

In Europe: *"Drought conditions will become less extreme in Boreal and Continental Europe. Total economic losses from drought in Europe would grow from 9.4 €billion/year now to 45 €billion/year with 3°C global warming in 2100."* (European Commission 2020).

Climate change anxiety – the psychological response to climate change. Environmental concerns in general and climate change in particular are legitimate, and can negatively impact mental health (Usher et al 2019). One of the negative emotional consequences of climate change is increased anxiety. There are many terms that define the effects of climate change on emotions and mental health (Innocenti et al 2021), e.g., eco-anxiety (Cossman 2013; Mkono 2020; Panu 2020; Verplanken et al 2020), climate change anxiety (Clayton 2020; Clayton & Karazsia 2020), ecological grief (Cunsolo & Ellis 2018), ecological stress (Helm et al 2018). However, there is little conceptual clarity regarding these concepts (Clayton & Karazsia 2020). Anxiety is just one of the responses to climate change, in addition to depression, grief, and anger (Taylor 2020).

Significant distress over climate change has been reported in populations that are particularly affected over the last 10 years (Perry et al 2010; Lewis 2018; Coffey et al 2021; Innocenti et al 2021; Stanley et al 2021). Clayton (2020) considers that climate anxiety can be an appropriate reaction to a realistic threat or it can be excessive and disproportionate. For the last case, he observed that anxiety is associated with perceptions about climate change, even among people who have not personally experienced any direct impact of it. Climate change anxiety can be described as negative emotional consequences coming from direct experiences (e.g., hurricanes, droughts, or wildfires) or associated simply with perceptions of climate change (Clayton & Karazsia 2020). Bednarek (2019) sees climate change anxiety as "heightened distress in response to the ecological, social, and cultural threats we are facing in relation to changes in our climate system", considering that the term anxiety places human-climate change experiences in a clinical framework. However, Clayton (2020), says that it is important to avoid pathologizing the emotional response to climate change.

This note stands as an awareness of climate change emotions, since the resulting impact on the psyche is likely to be traumatic when people lose their homes, and other possessions, jobs, or witness the loss of life (Arcanjo 2019).

References

Arcanjo M., 2019 Eco-anxiety: mental health impacts of environmental disasters and climate change. Washington DC: A Climate Institute Publication. Preuzeto, 6, 2019.

Australian Academy of Science, 2021 What are the impacts of climate change? Available at: https://www.science.org.au/learning/general-audience/science-climate-change/7-what-are-impacts-of-climate-change. Accessed: April, 2021.

Bednarek S., 2019 Is there a therapy for climate-change anxiety. Therapy Today, June 2019, pp. 36-39.

Clayton S., 2020 Climate anxiety: psychological responses to climate change. Journal of Anxiety Disorders 74:102263.

Clayton S., Karazsia B. T., 2020 Development and validation of a measure of climate change anxiety. Journal of Environmental Psychology 69:101434.

Coffey Y., Bhullar N., Durkin J., Islam M. S., Usher K., 2021 Understanding eco-anxiety: a systematic scoping review of current literature and identified knowledge gaps. The Journal of Climate Change and Health 3:100047.
Cossman B., 2013 Anxiety governance. Law and Social Inquiry 38(4):892-919.
Cunsolo A., Ellis N. R., 2018 Ecological grief as a mental health response to climate change-related loss. Nature Climate Change 8(4):275-281.
European Commission, 2020 Projection of economic impacts of the climate change in sectors of the EU based on bottom-up analyses (PESETA). Available at: https://ec.europa.eu/jrc/en/peseta-iv/droughts. Accessed: August, 2021.
Helm S. V., Pollitt A., Barnett M. A., Curran M. A., Craig Z. R., 2018 Differentiating environmental concern in the context of psychological adaption to climate change. Global Environmental Change 48:158-167.
Hijioka Y., Lin E., Pereira J. J., Corlett R. T., Cui X., Insarov G. E., Lasco R. D., Lindgren E., Surjan A., 2014 Asia. In: Climate change 2014: impacts, adaptation, and vulnerability. Part B: regional aspects. Barros V. R., Field C. B., Dokken D. J., Mastrandrea M. D., Mach K. J., Bilir T. E., Chatterjee M., Ebi K. L., Estrada Y. O., Genova R. C., Girma B., Kissel E. S., Levy A. N., MacCracken S., Mastrandrea P. R., White L. L. (eds). Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, pp. 1327-1370.
Innocenti M., Santarelli G., Faggi V., Castellini G., Manelli I., Magrini G., Galassi F., Ricca V., 2021 Psychometric properties of the Italian version of the Climate Change Anxiety Scale. The Journal of Climate Change and Health 3:100080.
IPCC, 2021 Climate Change 2021. The Physical Science Basis Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (Summary for Policymakers). Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf. Accessed: August, 2021.
Lewis J., 2018 In the room with climate anxiety. Psychiatric Times 35(11):1-2.
Mkono M., 2020 Eco-anxiety and the flight shaming movement: implications for tourism. Journal of Tourism Futures 6(3):223-226.
National Academies of Sciences, Engineering, and Medicine 2, 2021 Global change research needs and opportunities for 2022-2031. Washington, DC: The National Academies Press, 122 pp.
Panu P., 2020 Anxiety and the ecological crisis: an analysis of eco-anxiety and climate anxiety. Sustainability 12(19):7836.
Perry R. I., Ommer R. E., Barange M., Werner F., 2010 The challenge of adapting marine social-ecological systems to the additional stress of climate change. Current Opinion in Environmental Sustainability 2(5-6):356-363.
Stanley S. K., Hogg T. L., Leviston Z., Walker I., 2021 From anger to action: differential impacts of eco-anxiety, eco-depression, and eco-anger on climate action and wellbeing. The Journal of Climate Change and Health 1:100003.
Taylor S., 2020 Anxiety disorders, climate change, and the challenges ahead: introduction to the special issue. Journal of Anxiety Disorders 76:102313.
Usher K., Durkin J., Bhullar N., 2019 Eco-anxiety: how thinking about climate change-related environmental decline is affecting our mental health. International Journal of Mental Health Nursing 28(6):1233-1234.
Verplanken B., Marks E., Dobromir A. I., 2020 On the nature of eco-anxiety: how constructive or unconstructive is habitual worry about global warming? Journal of Environmental Psychology 72:101528.
World Meteorological Organization, 2020 State of the climate in Africa 2019. World Meteorological Organization, No. 1253, 34 pp.

Received: 17 October 2021. Accepted: 21 November 2021. Published online: 17 December 2021.
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How to cite this article:
Petrescu-Mag I. V., Proorocu M., 2021 Climate change anxiety - a new prominent concept in climate literature, mass media, and political debate. AES Bioflux 13(2):79-82.