

Climate change, a critical new role for educational and developmental psychologists

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Editorial

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Climate change is one of the most important issues of our time. However, despite its central place in the public discourse, very few educational and developmental psychologists have written about the subject in either book or journal article form. This lack of voice may incorrectly imply apathy or a lack of expertise. Increasingly hotter wildfires are a stark reminder that once the balance is tipped, the climate can threaten ways of life we have become comfortable with. While climate science may seem far removed from the field of educational and developmental psychology, those of us working in this field need to seize the chance, perhaps the *only* chance, to make an important difference where we can. A safe climate is only possible through change, and educational and developmental psychologists can be instrumental in this process.

Fact or Fiction

Where we daily accept a myriad of natural world phenomena based on scientific principles we are unable to independently verify, our ability to accept climate change often remains subject to a raft of tendentious personal beliefs. We accept that there is a gravitational force because scientists tell us it so, although we cannot see or necessarily understand it. But on climate change, so deeply intertwined with implications for our economic futures, we often turn away from the science, drawing succour instead from conspiracy theories or dubious studies from the outer margins of the scientific community.

Professor Alan Tilbrook has called for an urgent change in terminology (personal communication, December 17, 2019): the term *climate change* may no longer accurately capture the current emergency that is unfolding, and talking in terms of mere *change* may well misrepresent the immediacy of the danger. The climate has indeed been changing since the planet first emerged; that part is not new and has provided a resource for climate change deniers to argue that there is nothing unusual going on at present. Terms like *climate emergency* or *climate crisis* signal the immediacy of the issue; however, what current terminology of climate change does not emphasise is that it is specifically human activity that is responsible for the current predicament. Anthropogenic climate change or human-induced climate change may thus be a more accurate way to better acknowledge the complex involvement of intrapersonal, interpersonal and contextual factors involved, including attitudes, emotions, cognitions and behaviours that are so imperative to contributing to changes towards proactive climate behaviours and solutions, but also inviting the work of psychologists into the space (Gifford, Kormos, & McIntyre, 2011).

While there remains disagreement about the nature of climate change and how best to respond to it, there is virtually unanimous agreement on all the basic climate science facts. The first is that human activity has exacerbated climate change. The second is that the situation is precarious. The third is that humans have more influence on the climate now than at any other time in human history. And the fourth is that human intervention is the only solution to our climate-based problems (McMichael, 2013; McMichael & Lindgren, 2011).

The ways humans think and behave are fundamental to our work as psychologists. Not only do we have valuable tools for studying and supporting modes of thought and behaviour concerning the climate, but the behavioural dimensions virtually demand that we get involved. We have already taken some promising first steps.

The Australian Psychological Society and 43 other psychological associations worldwide have officially recognised the crisis through an international pledge to apply psychological science to combat global climate change and a suite of resources developed by Dr Susie Burke, Professor Ann Sanson, Emerita Professor Judith Van Hoorn, and others (see <https://www.psychology.org.au/for-the-public/Psychology-topics/Climate-change-psychology>). However, engagement at the institutional level is just the first step. The real work starts when individual psychologists make it a core focus of their work.

What do educational and developmental psychologists have to offer?

Disaster Management and Resiliency

A changing climate means a changing environment. Climate change has increased the frequency and intensity of natural disasters. It has also led to a call for psychologists to become involved in disaster response, planning and prevention (Almazan et al., 2018). Coping behaviours and resilience are essential for managing the trauma caused by natural disasters. We are seeing changing weather patterns, more bushfires, longer droughts, land degradation, rising sea levels and changes in air quality (McMichael, 2013). As a result, resource shortages and geographical displacement are occurring — for the first time in our lifetime people are becoming *climate refugees*. Most people can learn resiliency and coping skills that may better equip them to manage their response to such disasters or to buffer the effects of a traumatic experience (Almazan et al., 2019). Educational and developmental psychologists have a role to play in this process.

Coping with a Changing Climate

The difficulties in coping with the quotidian reality of a changing climate have recently come to the fore. One study found the vast majority of young Australians (96%) consider climate change to be a serious issue (Chiw & Ling, 2019). Young people must learn to cope with their issues, concerns and fears (Frydenberg, Deans, & O'Brien, 2012), many of which are focused on a changing climate. Well-founded concerns include frustration at the torpor of governmental responses, community negligence, differing world views, conflicting opinions, feelings of hopelessness and disempowerment, and fears for the future. In 1996, educational and developmental psychologists Associate Professor Erica Frydenberg and Professor Emeritus Ramon Lewis (1996) wrote about adolescent perceptions of global war and the nuclear threat, and the importance of developing coping skills in a world that felt like it might end at the push of a button. More recently, work by Maria Ojala (2012) has demonstrated the importance of assisting children in developing meaning-focused rather than problem-focused coping strategies in the face of the climate crisis in order to preserve positivity and well-being, and initiate climate action. However, despite the 20-year gap, the concluding remarks of Frydenberg and Lewis (1996) still ring true: educators and educational psychologists have an important role to play in assisting young people to explore and develop different forms of constructive coping strategies.

Supporting Youth in the Major Changes Ahead

Educational and developmental psychologists have already played important roles in changing the teaching of climate change in schools. While many young people are aware of climate change, many also misunderstand its underlying mechanisms (Thacker & Sinatra, 2019). The complexities of human-induced climate change mean there is no simple catch-all solution for resolving this problem (Lombardi, Sinatra, & Nussbaum, 2013). However, educational psychologists have already contributed widely. These contributions include the development of mental models of climate change using online simulation (Thacker & Sinatra, 2019); examining the role of epistemic beliefs and emotions (Muis et al., 2015); investigating the role of plausibility judgement in climate change beliefs (Lombardi & Sinatra, 2012; Lombardi, Seyranian, & Sinatra, 2014); considering students' evaluations about climate change (Lombardi, Brandt, Bickel, & Burg, 2016);

understanding people's willingness to take action (Sinatra, Kardash, Taasobshirazi, & Lombardi, 2012); and emphasising the importance of professional development for those who work with students (Beck, Sinatra, & Lombardi, 2013). Parents and teachers have a responsibility to not only create a dialogue with their children and students about climate change, but also provide space and opportunity to act (Sanson, Hoorne, & Burke, 2019). Studies such as those identified above can guide proactive, productive conversations on adaptive coping, pro-environmental behaviours, and tolerance towards others and their perspectives on climate change.

A Call to Action

Climate change literacy is necessary for developing science-informed social attitudes and behaviours that can respond to the challenges (Lombardi et al., 2013). Attitudes towards climate change, public opinion and social values are at the core of psychologists' work in understanding human behaviour and our complex, unique interactions with the environment. However, climate change transcends all academic disciplines and is therefore fertile ground for psychologists to engage in collaborative and transdisciplinary work. The human-induced climate crisis calls for a human-induced response and psychologists are equipped to examine the social and psychological influences that contribute to climate impacts and to work towards designing appropriate responses (Gifford et al., 2011; Swim et al., 2011). Educational and developmental psychologists not only have a moral responsibility towards supporting youth in this critical time, but are also in important positions to drive change. The contributions that have already been made by educational and developmental psychology have been wide-ranging and important, but there is further work to be done for educational and developmental psychologists in this space. While there is currently incredible work being produced in the field of educational and developmental psychology, I invite future research to respond to the unprecedented challenges before us (Alloway & Carpenter, 2020; Furlonger et al., 2020; Gindidis et al., 2020; Satici, 2020; Slaten et al., 2020; Spadafora et al., 2020; Zamora et al., 2020; Miller & Berger 2020; Deadman 2020; Frydenberg 2020a; Wilkerson 2020; Frydenberg 2020b). While educational and developmental psychologists are uniquely positioned to help children and young people to cope with stressors and challenges, there is a role for educational and developmental psychologists as a profession to do much more. After all, if we are not passing on an inhabitable planet to our next generation, the good work we do in supporting the psychological and emotional needs is futile.

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References

- Almazan, J.U., Cruz, J.P., Alamri, M.S., Alotaibi, J.S. M., Albougami, A.S. B., Gravoso, R., . . . Bishwajit, G. (2018). Predicting patterns of disaster-related resiliency among older adult Typhoon Haiyan survivors. *Geriatric Nursing*, 39, 629–634.
- Almazan, J.U., Albougami, A.S., Alamri, M.S., Colet, P.C., Adolfo, C.S., Allen, K., . . . Boyle, C. (2019). Disaster-related resiliency theory among

- older adults who survived Typhoon Haiyan. *International Journal of Disaster Risk Reduction*, 35, 101070.
- Alloway, T., & Carpenter, R.** (2020). The relationship among children's learning disabilities, working memory, and problem behaviours in a classroom setting: Three case studies. *The Educational and Developmental Psychologist*, 1–7. doi:10.1017/edp.2020.1
- Beck, A., Sinatra, G.M., & Lombardi, D.** (2013). Leveraging higher-education instructors in the climate literacy effort: Factors related to university faculty's propensity to teach climate change. *The International Journal of Climate Change: Impacts and Responses*, 4, 1–17.
- Chiw, A., & Ling, H.S.** (2019). Young people of Australia and climate change: Perceptions and concerns. A report for Millennium Kids. <https://www.millenniumkids.com.au/wp-content/uploads/2019/02/Young-People-and-Climate-Change.pdf>
- Deadman, L., & McKenzie, V.** (2020). More than play: The impact of play-group participation on culturally and linguistically diverse parents' and carers' degree of social support, connectedness and self-efficacy. *The Educational and Developmental Psychologist*, 1–8. doi: 10.1017/edp.2020.8
- Frydenberg, E., & Lewis, R.** (1996). Social issues: What concerns young people and how do they cope? *Peace and Conflict*, 2, 271–283
- Frydenberg, E., Deans, J., & O'Brien, K.A.** (2012). *Developing children's coping in the early years: Strategies for dealing with stress, change and anxiety*. London, UK: Bloomsbury.
- Frydenberg, E.** (2020a). My journey in coping research and practice: The impetus and the relevance. *The Educational and Developmental Psychologist*, 1–8. doi: 10.1017/edp.2020.9
- Frydenberg, E.** (2020b). Visible Learning: Feedback - J. Hattie, & S. Clarke (2019). Visible Learning: Feedback. Routledge, 176, pp. 48.99 (AU Paperback) (ISBN: 978113859989). 221.00 (AU Hardcover). The Educational and Developmental Psychologist, 1–1. doi: 10.1017/edp.2020.10
- Furlonger, B., Chung, J., Ostojic, M., Busacca, M., Moore, D., Anderson, A., ... D'Souza, L.** (2020). Ways in which school psychologists can identify suitable apps for supporting the self-management of asthma by students. *The Educational and Developmental Psychologist*, 1–9. doi:10.1017/edp.2020.3
- Gifford, R., Kormos, C., & McIntyre, A.** (2011). Behavioral dimensions of climate change: drivers, responses, barriers, and interventions. *Wiley Interdisciplinary Reviews: Climate Change*, 2, 801–827.
- Gindidis, S., Stewart, S., & Roodenburg, J.** (2019). Adolescent experiences of app-integrated therapy. *The Educational and Developmental Psychologist*, 1–10. doi:10.1017/edp.2019.18
- Lombardi, D., & Sinatra, G.M.** (2012). College students' perceptions about the plausibility of human-induced climate change. *Research in Science Education*, 42, 201–217.
- Lombardi, D., Brandt, C.B., Bickel, E.S., & Burg, C.** (2016). Students' evaluations about climate change. *International Journal of Science Education*, 38, 1392–1414.
- Lombardi, D., Seyranian, V., & Sinatra, G.M.** (2014). Source effects and plausibility judgments when reading about climate change. *Discourse Processes*, 51, 75–92,
- Lombardi, D., Sinatra, G.M., & Nussbaum, E.M.** (2013). Plausibility reappraisals and shifts in middle school students' climate change conceptions. *Learning and Instruction*, 27, 50–62.
- McMichael, A.J.** (2013). Globalization, climate change, and human health. *New England Journal of Medicine*, 368, 1335–1343.
- Miller, J., & Berger, E.** (2020). A review of school trauma-informed practice for Aboriginal and Torres Strait Islander children and youth. *The Educational and Developmental Psychologist*, 1–8. doi: 10.1017/edp.2020.2
- McMichael, A.J., & Lindgren, E.** (2011). Climate change: Present and future risks to health, and necessary responses. *Journal of Internal Medicine*, 270, 401–413.
- Muis, K.R., Pekrun, R., Sinatra, G.M., Azevedo, R., Trevors, G., Meier, E., & Heddy, B.C.** (2015). The curious case of climate change: Epistemic emotions mediate relations between epistemic beliefs, learning strategies and learning outcomes. *Learning and Instruction*, 39, 168–183.
- Ojala, M.** (2012). How do children cope with global climate change? Coping strategies, engagement, and well-being. *Journal of Environmental Psychology*, 32, 225–233.
- Sanson, A.V., Van Hoorn, J., & Burke, S.E.** (2019). Responding to the impacts of the climate crisis on children and youth. *Child Development Perspectives*, 13, 201–207.
- Satici, B.** (2020). Social exclusion and adolescent wellbeing: Stress, school satisfaction, and academic self-efficacy as multiple mediators. *The Educational and Developmental Psychologist*, 1–8. doi:10.1017/edp.2020.7
- Sinatra, G.M., Kardash, C.M., Taasoobshirazi, G., & Lombardi, D.** (2012). Promoting attitude change and expressed willingness to take action toward climate change in college students. *Instructional Science*, 40, 1–17.
- Slaten, C., Ferguson, J., Hughes, H., & Scalise, D.** (2020). 'Some people treat you like an alien': Understanding the female athlete experience of belonging on campus. *The Educational and Developmental Psychologist*, 1–9. doi:10.1017/edp.2020.5
- Spadafora, N., Frijters, J., Molnar, D., & Volk, A.** (2020). Do little annoyances relate to bullying? The links between personality, attitudes towards classroom incivility, and bullying. *The Educational and Developmental Psychologist*, 1–9. doi:10.1017/edp.2019.20
- Swim, J.K., Stern, P.C., Doherty, T.J., Clayton, S., Reser, J.P., Weber, E.U., ... Howard, G.S.** (2011). Psychology's contributions to understanding and addressing global climate change. *American Psychologist*, 66, 241.
- Thacker, I., & Sinatra, G.M.** (2019). Visualizing the greenhouse effect: Restructuring mental models of climate change through a guided online simulation. *Education Sciences*, 9, 14.
- Wilkerson, C.** (2020). Visible Learning: Feedback - J. Hattie, & S. Clarke (2019). Visible Learning: Feedback. Routledge, 176, pp. 48.99 (AU Paperback) (ISBN: 978113859989), 221.00 (AU Hardcover), (ISBN: 9781138599888). The Educational and Developmental Psychologist, 1–1. doi: 10.1017/edp.2019.13
- Zamora, E., Vernucci, S., Del Valle, M., Introzzi, I., & Richard's, M.** (2020). Assessing cognitive inhibition in emotional and neutral contexts in children. *The Educational and Developmental Psychologist*, 1–11. doi:10.1017/edp.2020.4