Widening psychology's frame to address the climate crisis

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As experts in human thought and behaviour, psychologists have much to contribute to the societal changes needed to limit anthropogenic global warming and biodiversity loss. Yet we are still struggling to bend the emissions curve and to conserve nature. Some have interpreted the lack of progress pessimistically, as an indication that human psychology is ill-equipped to respond to the crisis. In this case study, we will examine how widening psychology's frame to consider not just individual decisions and behaviours, but also the systems and structures which can constrain or facilitate those behaviours fosters a more critical perspective and a more hopeful appreciation of how psychology can be applied to help mitigate the climate and biodiversity crisis.

The planetary crisis

The science of climate change is unequivocal. Human activities – primarily the burning of fossil fuels and industrial agriculture – have radically transformed our biosphere, warmed our climate, and caused devastating biodiversity loss. Our collective failure to radically reduce these activities, first and foremost amongst the 10% wealthiest people who are responsible for 50% of all emissions[1], risks triggering planetary tipping points – dramatic shifts in vital earth systems that cannot be undone, irreversibly altering the liveability of the planet, and destabilizing human civilization [2].

Despite the accumulating evidence and increasingly severe warnings from scientists, collectively, we are struggling to take sufficient action to stem global warming and to mitigate the effects of human activity on our biosphere. As the science of human behaviour, psychology has much to contribute to our understanding of what we need to do to and why we are having such difficulty doing it. Since our failure to reduce carbon emissions is so salient, much attention within the psychological literature has focused on the latter, and has sought to identify characteristics of human thought and behaviour that impede our perception of the severity of the climate crisis, or our ability to respond accordingly.

The psychology of climate inaction

A compelling article outlining the psychological "Dragons of Inaction" that can explain the gap between our attitudes (concern about global warming) and behaviour (lack of adequate action) was published in 2011 by the psychological Robert Gifford[3]. The article draws on an appealing idea within evolutionary psychology, which posits a disconnect between the conditions under which our brains (and cognition) evolved and the challenges of our modern world. The idea is that our brains were shaped by evolutionary conditions in which immediacy dominated – our ancestors' concern was for immediate kin (direct family), and for immediate dangers, threats, needs and available resources. Since the "ancient" human brain "has not evolved much in thousands of years," concern for global warming, "which is slow, usually distant, and unrelated to the present welfare of ourselves and our significant others… does not come easily" (p291).

The work of the cognitive psychologists Daniel Kahneman and Amos Tversky also features prominently in consideration of psychological barriers to climate action. Their work on "limited cognition" showed that we often rely on *intuitive judgments* – mental shortcuts known as heuristics that reduce the cognitive load (effort) of the problem and allow us to make decisions quickly. In many situations, this produces decisions or judgments that are adequate, but in some cases, application of these shortcuts

produces systematic biases - decisions or judgments that are inconsistent, suboptimal, or even incorrect. Many of these biases have been enlisted to explain climate inaction - from *present bias* (our tendency to over-value the immediate and de-value the future), *loss aversion* (our greater sensitivity to losses over gains), systematic misperceptions of probability and risk, susceptibility to framing effects (the way things are worded can dramatically alter our choices), and our exquisite sensitivity to the behaviour and judgement of others (social norms and influence). Applied to climate, these cognitive tendencies can help explain why we have difficulty making personal sacrifices now (such as giving up cars or meat) that will translate to future, collective benefits in terms of climate change mitigation. While the research on limited cognition can suggest strategies to promote climate action by overcoming our biases, such as emphasizing the immediate and personal impacts of climate breakdown, it can also lead to bleak conclusions – for example, Daniel Kahneman himself recently said[4], "I am very sorry, but I am deeply pessimistic. I really see no path to success on climate change."

Countering fatalistic conclusions and shifting the paradigm

This fatalistic "psychological barriers explanation" of climate inaction has been particularly appealing to the media – headlines have declared that our brains are simply not "wired" to process or fix climate change. Recently, however, some psychologists have questioned the idea that limited cognition and other features of human psychology render us incapable of responding to the planetary crisis[5,6]. Atkinson and Jacquet (2022), for example, argue that this pessimistic reading of the psychological evidence risks "essentialising" climate inaction – understanding it as a natural and therefore fixed and unavoidable feature of human cognition. Not only does this perspective oversimplify the evidence and overlook the fact that many of these psychological processes have the potential to facilitate as well as impede climate action, it can be used to go beyond *explaining* inaction to *justifying* it – after all, if we're simply not wired to address the climate crisis, why even try? This means that the "psychological barriers explanation" can become a self-fulfilling prophecy – a barrier to action in itself. Potentially more important, framing climate inaction as the result of flawed human cognition neglects to consider the importance of *context*, and the role of the sociocultural, economic, and political structures and systems within which cognition and behaviour takes place. To take a simple example, an individual may be both concerned about climate change and motivated to take action, but their desire to reduce their car use may be impeded by a lack of adequate public transport, safe cycling infrastructure, or access to other structural supports that would enable such a behaviour change.

When we widen our analysis beyond the individual to consider such structural and systemic factors, a different picture of the root causes of climate inaction, as well as other societal challenges like obesity or addiction, can emerge. Recently, a powerful framework for such an analysis was proposed by behavioural economists Nick Chater and George Loewenstein[7]. Chater and Loewenstein distinguish between the *i-frame* – explanations and interventions that are located at the level of individual cognition and behaviour and the *s-frame* - those that are located at the level of the *system* of sociocultural, economic, and political rules, norms, and institutions. When we identify individual cognitive processes as the root cause of a given societal problem, a natural solution is to "fix" or "enhance" the individual and their cognitions, rather than to change the system within which they operate. As Chater and Loewenstein argue, a research and policy emphasis on the *i-frame* has led to insufficient progress on many societal challenges, including the climate crisis, while distracting attention from more effective s-frame interventions. Such *s-frame* interventions include taxes and regulations that would, for example, incentivise renewable energy and public transport and disincentivise fossil energy.

The authors argue that corporations with an interest in maintaining the status quo (like fossil fuel companies) actively promote an *i-frame* understanding of the problem, because they know that this will deflect attention and support away from more impactful *s-frame* reforms that might affect their business.

The i-frame and the s-frame in action

An analysis of the "carbon footprint" concept provides an example of this process in action. Although ecologist William Rees originally proposed the "ecological footprint" to measure the impact of different populations (from individuals to countries) on the planet, the idea of a personal "carbon footprint" was popularised in a 2004-2006 advertising campaign from the fossil fuel company British Petroleum (BP), which had recently rebranded itself "Beyond Petroleum"[8]. The campaign encouraged people to calculate their individual carbon emissions profile using BP's carbon footprint calculator, and to take action to reduce it by going on a "low-carbon diet." The fact that "carbon footprint" is now an unquestioned feature of our everyday climate lexicon illustrates the success of the campaign at promoting the *i-frame* idea that responsibility for the climate crisis lies with individuals rather than the fossil fuel industry. Chater and Loewenstein identify this as part of a deliberate strategy by the fossil fuel industry to cast the climate crisis as an *i-frame* problem. This framing focuses research and policy attention on explanations and interventions that operate at the level of individual cognition and behaviour, which are often ineffective or low-impact. It shifts the blame for the climate crisis onto individuals and their faulty cognition, while diverting attention from *s-frame* policies that have much greater capacity for meaningful emissions reductions because they change the "rules of the game" within which individuals behave and make decisions. This, in turn, upholds the status quo of continued fossil fuel dependency and high emissions.

It should now be clear why it is important to critically evaluate the idea that climate inaction is an unavoidable consequence of flawed human cognition. We now know that the BP's campaign was just of many public relations, marketing, and lobbying strategies[9] employed by the fossil fuel industry to redirect responsibility, to undermine and spread doubt about the science of climate change, and to distract from and delay the systems-level changes required to mitigate the climate crisis. Acknowledging and questioning the ability of powerful groups and entities (e.g., corporations) to influence both research and policy in their favour is another benefit of applying an *i-frame/s-frame* analysis. Such strategies are now recognised as part of a wider pattern of industry actions and practices that are associated with "ill health, planetary damage, and social and health inequity," termed the "commercial determinants of health"[10].

The psychology of climate action

What does this mean for psychology's approach to the climate and biodiversity crisis? Does it mean that an understanding of individual cognition and behaviour is not relevant to mitigating the global warming? Does it mean that individuals bear no responsibility for addressing our planetary crisis? These would be the wrong lessons to take away. While the locus of responsibility has been imbalanced toward individuals and *the i-frame*, rather than the *s-frame*, and individual behaviour change alone is *insufficient* to enable a transition to a sustainable world, it is also true that behaviour change at the level of individuals and households is a *necessary* part of that transition. Chater and Loewenstein emphasise that "upstream" systems and structures have their effects through interactions with "downstream" individual cognition and behaviour - psychologists therefore have a substantial role in the design of

systems reforms to ensure they are effective and supported by the public. In a critical analysis of how psychology can help limit climate change, Nielsen and colleagues[11] suggest that it is important to see ourselves not only as individuals (e.g., consumers), but also as members of organisations (e.g., school, work), communities (e.g., social, cultural, religious groups), and as citizens, with agency, power, and influence to effect change in each of these roles, particularly by acting collectively with others. Our actions as a citizen have considerable potential for impact – using our voice to demand and support system change, and to vote for political candidates who are committed to policies and regulation aimed at justly and equitably reducing societal dependence on fossil fuels (e.g., by facilitating the transition to renewables, supporting building retrofits, and expanding public transport) are two of the most consequential ways in which an individual can participate in collective action.

Adopting a more critical *i-frame*/*s-frame* perspective means that the concept of the individual carbon footprint does not need to be jettisoned either. However, as Nielsen and colleagues emphasise, it is important to focus on frequently performed, high impact behaviours – like what we eat and how we get around (i.e., transitioning to a plant-based diet and car-free transport), which have the potential for substantial emissions reductions, particularly if adopted by large parts of the population. Large-scale changes in such high-impact behaviours require supportive and fair systems-level policies and reforms – psychological research and theory is essential to informing such "upstream" structural reforms. A psychological understanding of the role of social norms and influence in spreading high-impact behaviours is also important. Research shows that, worldwide, we underestimate other people's concern about climate and support for climate action[12] - by talking about and modelling climate action and behaviour change, each of us can influence other people's perceptions and behaviours, which can foster social contagion and contribute to the reshaping of behavioural norms for a sustainable future.

Conclusion

Psychological insights are key to mitigating the climate and biodiversity crisis. Widening psychology's frame to include the landscape of structural and systemic influences that shape individual decisions and behaviours offers a more critical and balanced understanding of the locus of responsibility for action, and a more holistic and hopeful understanding of human psychology that can fostering meaningful and just action.

References

1. World Inequality Database. 2021. Climate change & the global inequality of carbon emissions. Available at: https://wid.world/news-article/climate-change-the-global-inequality-of-carbon-emissions/ (Accessed 24 January 2025).
2. Lenton, T.M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W. and Schellnhuber, H.J., 2019. Climate tipping points—too risky to bet against. *Nature*, *575*(7784), pp.592-595. https://doi.org/10.1038/d41586-019-03595-0
3. Gifford, R., 2011. The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation. *American psychologist*, *66*(4), p.290. https://doi.org/10.1037/a0023566
4. Marshall, G. 2014. Understand faulty thinking to tackle climate change. New Scientist. Available at: https://www.newscientist.com/article/mg22329820-200-understand-faulty-thinking-to-tackle-climate-change/ (Accessed 24 January 2025).

5. Schmitt, M.T., Neufeld, S.D., Mackay, C.M. and Dys-Steenbergen, O., 2020. The perils of explaining climate inaction in terms of psychological barriers. *Journal of Social Issues*, *76*(1), pp.123-135. https://doi.org/10.1111/josi.12360
6. Atkinson, Q.D. and Jacquet, J., 2022. Challenging the idea that humans are not designed to solve climate change. *Perspectives on Psychological Science*, *17*(3), pp.619-630. https://doi.org/10.1177/17456916211018454
7. Chater, N. and Loewenstein, G., 2023. The i-frame and the s-frame: How focusing on individual-level solutions has led behavioral public policy astray. *Behavioral and Brain Sciences*, *46*, p.e147. https://doi.org/10.1017/S0140525X22002023
8. Yoder, K. 2020. Footprint Fantasy. Grist. Available at: https://grist.org/energy/footprint-fantasy/ (Accessed 24 January 2025).
9. Supran, G. and Oreskes, N. 2021. The forgotten oil ads that told us climate change was nothing. The Guardian. Available at: https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing (Accessed 24 January 2025).
10. Gilmore, A.B., Fabbri, A., Baum, F., Bertscher, A., Bondy, K., Chang, H.J., Demaio, S., Erzse, A., Freudenberg, N., Friel, S. and Hofman, K.J., 2023. Defining and conceptualising the commercial determinants of health. *The Lancet*, *401*(10383), pp.1194-1213. https://doi.org/10.1016/S0140-6736(23)00013-2
11. Nielsen, K.S., Clayton, S., Stern, P.C., Dietz, T., Capstick, S. and Whitmarsh, L., 2021. How psychology can help limit climate change. *American Psychologist*, *76*(1), p.130. https://doi.org/10.1037/amp0000624
12. Andre, P., Boneva, T., Chopra, F. and Falk, A., 2024. Globally representative evidence on the actual and perceived support for climate action. *Nature Climate Change*, *14*(3), pp.253-259. https://doi.org/10.1038/s41558-024-01925-3