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ORIGINAL ARTICLE

Planetary and mental resilience: healing ourselves to heal the world

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Abstract
Resilience is a concept relating to a system's ability to 'bounce back' from disturbance and can be conceptualised as the boundaries (or thresholds) around an equilibrium state. This paper traces the connection between ecological change and mental health, arguing that both are seeing increasing dysregulation. Climate change, as is occurring under 'business-as-usual conditions', is likely to breach the resilience of the Earth System (ES), tipping the world into 'Hothouse Earth'. Equally, mental health, envisaged also using a resilience (or 'Window of Tolerance') framework, is affected by climate change – tipping people from a steady to dysregulated state of emotionality. These states are borne from both direct climate crisis and indirect 'eco-anxieties' emanating from the mere fact of impending climate change. Societally, our level of current dysregulation and dissociation can be seen from the way we treat the indigenous and natural world. Coping mechanisms like addictions or denial can be easy to seek out to soothe upset feelings, but this paper argues that to truly re-regulate, true emotional expression of grief followed by mindful equipoise would be more desirable, both for healing ourselves and for healing the planet.

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mental health,
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Climate change

The aim of this paper is to draw links between planetary and mental health resilience. Our sense of mental wellness is linked to our perception of the health of our world, and the planet's resilience is linked to us being mentally well enough to address the myriad of cascading issues impacting on it. We currently reside in the 'Holocene' – a gentle, stable

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system of living conditions in which the planet Earth as we know it has been able to thrive for the past 10,000 years. The last 800,000 years of Earth's history has been characterised by a stable cycle of climate oscillations between glacial and inter-glacial periods every 100,000 years or so (Earle, 2019; NOAA, 2020).

The concept of 'Earth system resilience' relates to the capacity of the whole Earth system to continue operating within a dynamic equilibrium. That is, where all the complex and interconnected systems and spheres can continue to interact in a way that maintains the Earth system. This concept of resilience is often conceptualised by the theoretical 'ball in the basin' (*figure 1*). In this conceptualisation, resilience is represented by the system (the ball) always defaulting back to the initial state (the basin) it starts in (due to gravity making it roll into the 'dip' of its original state). That is, until such a threshold is breached (the bounds of resilience) where the ball/ or system defaults and falls into a new state (the ball reaches the zenith of its initial state and defaults into a new one instead).

Climate change is one factor that could be responsible for transgressing the resilience threshold of the Holocene, thereby bringing the Earth system into a new state and is being caused by humankind's continuing and accelerating greenhouse gas (GHG) emissions into our atmosphere. The majority of greenhouse gases in our atmosphere are carbon dioxide-based, and there has been an exponential increase in the billions of tons of CO_2 that have been emitted into the atmosphere since the 1950s (NOAA, 2020).

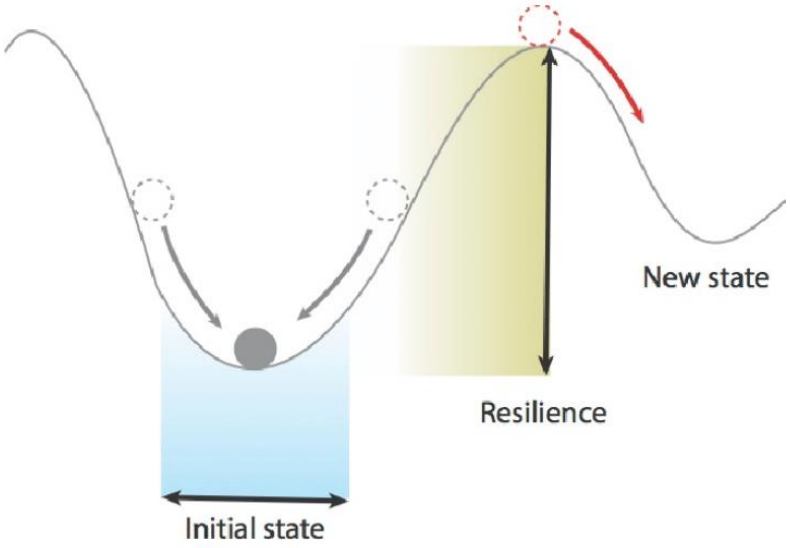

Figure 1: The 'ball in the basin' conceptualisation of resilience. Resilience is represented by the threshold beyond which a new system is triggered (Fiorentino & Montana-Hoyos, 2014).

The result of transgressing the threshold of the Holocene system's resilience is to enter a new and unstable set of conditions colloquially known as 'Hothouse Earth' (*figure 2*). The

threshold of triggering 'Hothouse Earth' is unclear but could be as low as 2°C above preindustrial levels (Steffen et al, 2018). Average world temperatures are already 1°C-1.5°C above pre-industrial levels (Buis, 2010; Our World in Data, 2021) and the International Panel on Climate Change (IPCC) – the world's most esteemed international team of scientists working on this issue – has given Earth until 2030 on our current trajectory of carbon emissions until such a state is triggered. This state will result in runaway temperature rising beyond the capacity of humankind to mitigate, only stabilising at 4-6°C above preindustrial levels *(Figure 2)*.

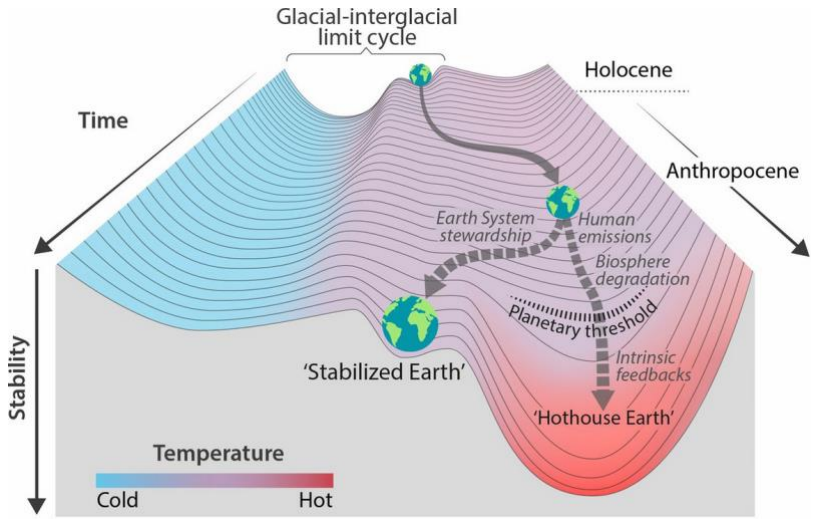

Figure 2: A roadmap of our potential trajectories', dependant on our carbon emission abatements. Either we stabilise before hitting our Planetary threshold and find our way back to 'Stabilised Earth' conditions, or we trigger runaway climate change that will be the catalyst for 'Hothouse Earth' (Steffen et al, 2018).

The terrifying reality is that climate change, by transgressing the thresholds of the Holocene system's resilience, is likely to usher in a whole suite of changes incompatible with the continuation of human systems – and life – as we know them (IPCC Summary Report for Policymakers, 2018; Steffen et al, 2018; Klein, 2014; World Bank, 2018).

These impacts are likely to be felt on land, in the oceans, and at the poles. On land, there will be a greater incidence of hotter days, droughts, heat waves and fires. There will be an increase in the frequency, intensity, and unpredictability of storms and rain events – including tornadoes, hurricanes, and flash flooding. Increasing heat and increasing salinisation will lead to land and soil aridity, erosion, and desertification. In our oceans, a sea rise of >2m is likely to drown the island states of the Maldives, Kiribati, Ecuador, North and East Australia and South and South-East Asia. Our oceans, in sequestering carbon, are likely to acidify. Heating waters will destroy all coral reefs through processes of bleaching. At the Earth's poles, where climate change is set to hit the hardest, ice caps are likely to melt completely. The Arctic and Antarctic are likely to go from reflecting sunlight to emitting

greenhouse gases as permafrost thaws and pockets of methane and ancient diseases are released to the atmosphere.

Mental Health

We can also conceptualise mental wellness as an equilibrium. Mentally, we exist in a steady state of composure that enables us to navigate everyday complexities, plan for the future, learn from the past, and live in the present. Every new knock to the equilibrium can either be absorbed – that is, we can mentally and emotionally 'bounce back' – or it can tip us into a new and dysregulated state. This is conceptualised as a 'Window of Tolerance' (figure 3) by Corrigan et al (2011), who unveils biological and neurological evidence (in the periaqueductal mid-brain region) showing that post-traumatic stress disorder, chronic dysthymic disorders and chronic anxiety disorders can often be the result of violating thresholds of mental tolerance.

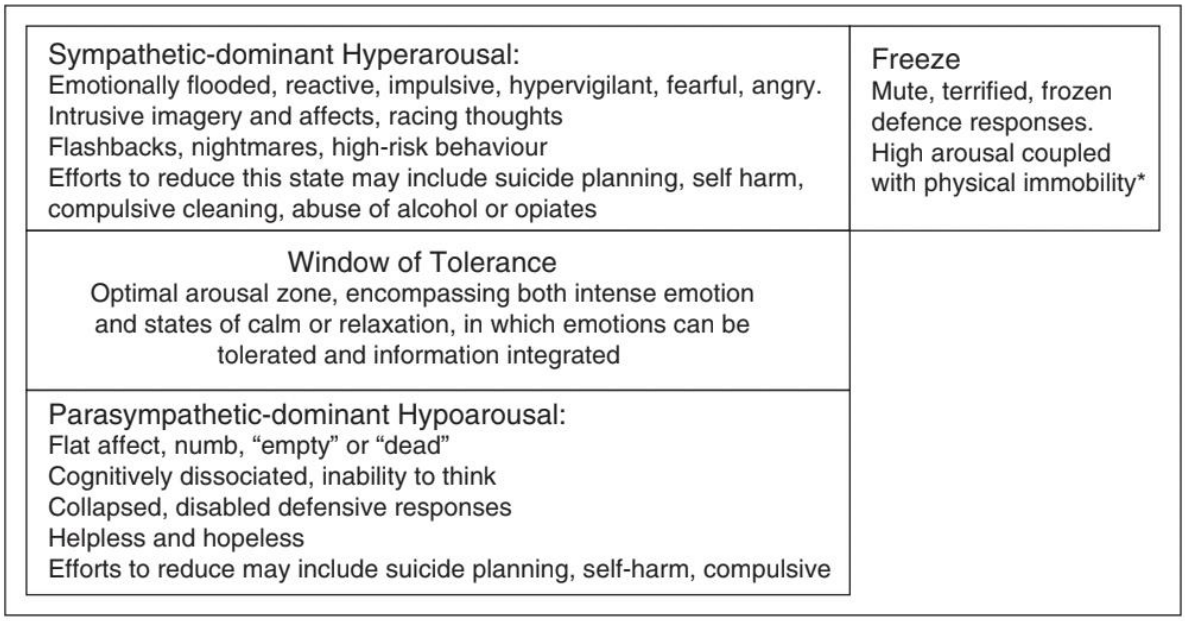

Figure 3: the 'Window of Tolerance' model – a conceptualisation of a resilience range, beyond who's thresholds exist either hyper or hypo arousal of the Central Nervous System (CNS) (Corrigan et al, 2011).

A resilience narrative looks at the intersections between individual mental health and surrounding societal conditions. In doing this, we can get a clearer picture of how surrounding circumstances impact an individual's mental health. For example, both Ciaconi et al, and Marazziti et al in studies conducted in 2020 and 2021, found direct and indirect relationships with mental health and the impacts of climate change and the rise of Covid-19 in society. These impacts ranged from minimal distress to full-blown clinical disorders – including anxiety, insomnia, depression, and post-traumatic stress disorder (PTSD). Tentative hypotheses attribute this growing trend of mental illnesses and environmental

destruction as an inability to protect ourselves from pollutants and the spill-over of viruses from animal to human populations (Marazziti et al, 2021).

But what if there is a, excuse the term, *mental* component to our response to climate change as well? It is far less difficult to quantify the relationship between the rise of societal mental health disorders and our growing awareness of the future impacts of climate change. 'Eco-anxiety' has emerged as a colloquial term that has achieved increasingly common usage since the 1990s, coinciding with an increase in knowledge, media coverage, and science regarding climate change (Cambourne, 2020; Agoston et al, 2022; Ojala et al, 2021). As someone suffering from lived experience of mental health issues myself, I can attest to the fact that my eco-anxiety over the destruction of the Great Barrier Reef from the building of an adjoining coal mine spiked in 2012/2013. I lost faith in my government and suffered prolonged bouts of anxiety during this time.

How did we get here?

This set of conditions has been shaped by growing societal and environmental inequalities, occurring, and intensifying since the 'Great Acceleration' in the 1950s (Steffen et al, 2015). Our culture has had similar impact on other cultures too. The last 200 years have been filled with both the physical and ideological colonisation by European nations over the rest of the world, with inter-generational trauma impacting Indigenous communities to this day (Calman et al, 2021).

I would also argue there is a type of mental malaise playing itself out in the meta-power structures of society. For example, there is something deeply dissociative about the way multi-national organisations function within the communities and environments they are within. Dissociation is defined as the 'disconnection and lack of continuity between thoughts, memories, surroundings, actions, and identity' (American Psychiatric Association, 2022). When we truly look at our society, the tendency towards assimilating, displacing, or destroying local cultures and languages and the way resources are extracted – all speak of a system that has lost touch with real and felt human connection, of a system suffering *profoundly* from dissociation.

This relationship of exploitation can be seen in our deforestation, mining, drilling, fracking, trawling, nuclear waste dumping, porous plastic waste systems, land-fill, toxic chemicals pumped into our atmosphere – all of these practices reflect an innate and institutional lack of care and concern by some parties on for their impacts on our environments.
Therefore, could our relationships towards our environment and other cultures simply be a symptom of a feedback cycle between dysregulated emotions and dissociation? Are we driven to destroy the world because connecting with a dying planet is too hard? Does the historical trauma of Indigenous people present us a clue that we are suffering from

dissociation as a civilisation? Does this dissociation create an inability to experience the world holistically, instead being stuck where lived experience of the world gets reduced and rationalised into metrics of efficiencies?

Societal coping strategies

The level of existential threat that climate change represents is profoundly confronting. As a result, it is a difficult issue to begin and maintain thinking about. Following through thoughts about environmental destruction can easily lead to unpalatable conclusions regarding our ability to out-manoeuvre the imminent challenges facing the planet. Our ability to care for things we have no power over can act to deplete the range of personal mental resilience. A natural coping response is to tune out.

It is easy to look away. We are primed to be addicted to social media, our phones, games, streaming, alcohol, drugs, pornography – whatever easily reached for anaesthetic we might choose. As a result of our reluctance to engage with climate change, much reporting on it is framed in such a way that emphasizes our personal agency. Eat less meat! Catch public transport! Go solar! Climate change is presented in a light or neutral tone, and the real scope of the threat it poses is skimmed lightly over in recognition of an individual's potential inability to swallow such a scope of sorrow.

Sorrow for what we are losing is a natural and very human response, particularly in people who 'retain a close relationship with the natural environment' (Comtesse et al, 2021). Solastalgia is a profoundly felt word for feeling homesick for a place that has changed so much you no longer recognise it. But to really look at what confronts us as a species and emotionally process the damage that is and has already been done is critical. It helps us to integrate painful truths and to respond to them while there is still time. Kessler and Kübler-Ross's framework of the 'Five Stages of Grief', including denial, anger, bargaining, depression, and acceptance, articulate the trajectory that such grief can take, each stage followed by the next). The last stage is acceptance – and it is this acceptance that allows us to utilise a fully objective and informed lens – unclouded by blocked emotional trauma – to the world around us.

Healing

Mentally, our social conditioning has taught us to be in our mind and to operate with speed throughout our lives, maximising efficiencies and moving at such velocities that we never get the time or mental space for real and deep reflection. As Curtis White puts it: *'to live a life substantially mediated by technology is to live in a world that has no endurance, that is constantly 'disappearing'. The images on the TV do not linger; they disappear. The world*

outside your car window does not linger; it vanishes. It is the opposite of what Buddhist's call "meditative equipoise." One does not live in the moment; one is being slung into a constantly accelerating future.'

Coronavirus spreading through the world from 2020 onward has been calamitous for mental health. Many people have lost lives, jobs, and many more people have also found they have lost track of time. COVID-19 has undermined individual resilience in a number of key-ways. People no longer have access to the support of their communities, financial stability (both personal and economic) has been jeopardised, and the ability to strive for life goals, for the time during which society entered lockdown, had effectively been put on hold. I see it as a blessing in disguise. A gift of slowness. A slowness that involves staying in the moment and observing thoughts, sensations, and feelings as they arise. We have been given a rare opportunity to take the time to learn new skills that help us to build up the thresholds of our mental resilience. Ball and Picot (2021) describe techniques of 'coexisting in the same experience' which help to 'evaporate' a psychotic episode – techniques which involve inhabiting the present moment without fear, favour, or any type of judgement at all.

Ruminating over the past and the future are traps that take us out of the moment. Hope for a desired outcome or fear towards an imminent consequence do the same thing. Mindful living, as accessed through modes of meditation, can help to build new skills of radical acceptance, presence, and mindful attention to thoughts and feelings as they come up. All of that with which we have been seeking distraction, we can face into – and learn the skills of true mental toughness.

From such perspectives, as we exit lockdown and snap back into old realities, we can observe our internal and external habits and internal events, slow them down, and re-contextualise them. From such perspectives, we can view COVID-19 as a mental and emotional detox from a societal trajectory that has brought humanity and everything else on the planet to the brink of destruction (though we can continue to mourn the high human cost of such a reprieve from a Business as Usual).

From such a perspective, we can re-localise our economies, recognise the innate value of the environment, broaden our individual skill sets, bring nature into our cities, restore relations with indigenous peoples, and restore the natural equilibrium of our planet. If we restore our own resiliencies, what can stop us from shoring up planetary resilience?
The alternative is to become numb again, dissociated, and live in a constant state of egoic greed for more. But if we can reset our habits of mind and the need to avoid, numb, to disassociate, we can not only build our own resilience; we can save the planet.

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