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ORIGINAL RESEARCH

A Framework for Deep Resilience in the Anthropocene

Dekila Chungyalpa[1] · **Pilar E. Gauthier**[1] · **Robin I. Goldman**[2] · **M. Vikas**[1] · **Christine D. Wilson-Mendenhall**[1,2]

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Abstract
This paper presents a conceptual framework proposed by the Loka Initiative for building inner, community, and planetary resilience as a unified vision and goal. Titled "A Framework for Deep Resilience in the Anthropocene," the framework emerged from a three-day dialogue with over 40 researchers, academics, community experts, clinical psychologists, and contemplative leaders who participated in the Resilience in the Anthropocene Summit from August 8–10, 2023. We propose that a unified goal of inner, community, and planetary resilience is necessary to subvert and overturn systems built upon the unsustainable extraction and exploitation of natural resources, including humans. We posit that individuals, communities, organizations, Indigenous communities and faith groups, and governments can benefit from considering how they integrate this framework of Deep Resilience as part of their internal, strategic, design, and management decision-making processes.

Keywords Anthropocene · Indigenous knowledge · Interdependence · Justice · Resilience · Systems

Introduction

The Loka Initiative is an interdisciplinary platform that builds capacity and partnerships with faith leaders and culture keepers of Indigenous traditions on environmental and climate issues. It is housed at the Center for Healthy Minds at the University of Wisconsin-Madison and consists of a partnership with seven other schools and institutes on campus. Since its launch in 2019, the Loka Initiative has been in dialogue with, partnered with, and co-created projects and events with diverse faith and Indigenous leaders, community leaders, scientists, scholars and experts from a range of disciplines with one question in mind: how do we transform the systems that devalue and exploit Nature to address the root causes of the envi-

✉ Dekila Chungyalpa
chungyalpa@wisc.edu

[1] The Loka Initiative, Center for Healthy Minds, University of Wisconsin-Madison, Madison, WI, USA

[2] Center for Healthy Minds, University of Wisconsin-Madison, Madison, WI, USA

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ronmental and climate crises and achieve well-being for all? Our conclusion is that we do so by building practices which improve the inner resilience of human beings, boost community resilience, and transform the systems that exploit, extract, and extinguish non-human life and ecological processes that have created this miraculous living planet.

Similar to the principles of humanistic management that identify the individual as being relational and being connected to society through shared values, interests, and service (Pirson and Lawrence 2010), we look to embrace the greater whole through interdependence as the unifying principle between inner, community, and planetary well-being. Loka's Deep Resilience framework emerged from a three-day dialogue that we organizedwith 40 researchers, academics, community experts, clinical psychologists, and contemplative leaders who participated in the online Resilience in the Anthropocene (RITA) Summit in August 2023, which had over 1700 registered participants. Information regarding the freely available summit dialogues and biographical information of summit participants can be found in Supplementary Information. We are very grateful and acknowledge their many contributions to the development of our thinking and the ideas presented in the framework.

Deep Resilience as a Framework

We live in a time where several ecological and climate systems are under imminent threat of collapse and, therefore, a time of deep uncertainty for our species and the continuation of life on our planet as we humans know it. The term "Anthropocene" refers to an unofficial unit of geologic time for the most recent period in Earth's history, during which human activity has had serious negative impacts on the planet's climate and ecosystems.[1] These impacts include an onset of the sixth mass extinction, which refers to the mass decline of 69% of global wildlife populations across the planet since 1970 (Cowie etal. 2022). The current rate of species extinction is 35 times higher than expected background rates (if human impacts did not exist). It goes beyond just species; entire branches (collections of species, genera, families and more) are disappearing (Ceballos and Ehrlich 2023) putting us well on the track where 75% of all species could be eradicated, as per the definition of a mass extinction. Other impacts include the pervasion of microplastics to every corner of the world and every part of our bodies (Jamieson et al. 2019), and the over-extraction and pollution of freshwater sources including underground water reserves, rivers, lakes, and streams that are the source of our drinking water (Gleeson et al. 2020, Vörösmarty et al. 2013). During this period, our dependence on fossil fuels development has led to the emission of unprecedented amounts of carbon dioxide and other greenhouse gasses, so that for the first time in recorded history, global warming has consistently exceeded 1.5 °C (2.7 °F) above pre-industrial levels over a 15-month period currently (Kexin et al. 2023).

The Loka Initiative interprets the Anthropocene as the last 500 years of human history, a period where colonialism, capitalism, militarism, and race-based violence are systemically and structurally intertwined. Our interpretation is built upon the thinking of ecofeminist writers and leaders such as Susan Griffin, Carolyn Merchant, and Vandana Shiva, who have long pointed out that Euro-centric patriarchy deploys mechanisms of objectification,

[1] While this term is contentious among some geographers and geologists who argue that it cannot represent an entire geological epoch, it is now part of everyday parlance across academic disciplines, environmental and climate movements, and mainstream media.

devaluation, and violence toward Nature and applies them to everything associated with Nature—women, people of color, and non-human life (Warren 1997). Therefore, the domination of women and the devastation of Nature are part of the same gendered colonial violence and part of the capitalist and race-based hierarchy of values that include economic growth over sustainability, white people over people of color, men, and masculinity over women, and femininity, and the well-being of the global north over the global south (Mies and Shiva 2023). To achieve justice, ecofeminists argue that we need to transform all systems that devalue and exploit women, people of color, and the environment, including patriarchy, racism, neoliberalism, and class oppression. In humanistic management terms, we cannot achieve universal well-being and protect human dignity and the "unalienable rights to everybody, independent from ethnicity, nationality, social status and gender" (Pirson and Lawrence 2010, p. 554) without doing so.

Resilience is a systems concept (Norberg and Cumming 2008) that begins with the examination of the adaptiveness of complex systems (whether those are of human biology and psychological functioning, of communities and societies, or species and ecosystems) in the face of threats. The Loka Initiative defines *resilience* as the ability of subjects to absorb disturbances and adapt to change while retaining certain stable attributes and gaining certain benefits under specific conditions, without supposing that things must go back to the way things were. This is so for human beings, non-human species, social, political, and economic organizations, societies, ecosystems, and the planet itself. Our vision is that **inner**, **community**, **and planetary resilience are interdependent—we cannot achieve any one of these goals without working on the other two.**

With this in mind, we want to define what we mean by inner, community, and planetary resilience.

Inner Resilience In the context of human health and mental well-being, resilience focuses on capacities for recovery, growth, and positive adaptive responses to challenges and setbacks (Brown et al. 2023). In contrast to early deficit-based models of individuals "bouncing back," inner resilience increasingly considers the strengths, relationships, and resources that enable an individual to grow and thrive (Usher et al. 2021) and to "bounce forward" to face an uncertain future (Sleijpen et al. 2013; Walsh 2002). According to neuroscience research, "neuroplasticity," the brain's ability to change and adapt by reorganizing and forming new neural pathways in response to new stimulation, knowledge, and experiences, underscores this capacity for inner resilience (McEwen 2016). Sources of inner resilience can vary across individuals and may include spiritual and faith teachings and contemplative practices, inherited and learned values, skills and behavior, and family and social networks, all of which underpin our ability to adapt and transform for the better (French et al. 2020; Usher et al. 2021).

Community Resilience According to the Stockholm Resilience Center, social resilience is the ability of human communities to withstand and recover from stresses, whether social, economic, political, or environmental upheavals. In disaster research, resilience is usually described as a combination of different capacities; the capacity to absorb (Vázquez-González et al. 2021), buffer (Speranza, Wiesmann, and Rist 2014), and respond (Bullock et al. 2017; Comfort et al. 2010) so that a hazard is diverted at the point of impact from becoming a disaster (Ladipo et al. 2019). In this context, resilience is used as a counteract-

ing component of vulnerability, where the greater the networking, structural, and economic resilience of social institutions, the lesser the vulnerability of that society and its basic functions. An emerging concept around community resilience is resilience justice, which addresses the relationships between environmental conditions, systemic inequalities, and factors such as poverty, racism, land use patterns, housing insecurities, and more (Arnold and Researchers 2021).

Planetary Resilience Ecological resilience was described in 1973 as "a measure of the persistence of systems and their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables" by Holling (1973, p.14), which continues to be relevant today. One of the most important implications of Holling's work was the understanding that ecosystems have nonlinear dynamics because they are complex and adaptive systems. Natural systems are responsive. As the biosphere shifts—because of climate change, biodiversity loss, water and soil degradation, microplastic or other novel entity contamination, and so on—building planetary resilience in a way that continues to support human and non-human life is essential. It requires a combination of efforts to reduce ongoing global and systemic damage alongside local efforts to mitigate risks and adapt to changes. In total, there are nine planetary boundaries that are necessary to maintain the continuation and resilience of the Earth system as a whole (Richardson et al. 2023). Climate change is one of six planetary boundaries that have been transgressed, thereby crossing the safe operating space for Earth's systems. The other five are: biosphere integrity, freshwater change, land system change, biogeochemical flows, and novel entities.

It is now widely accepted that planetary health cannot be limited to biological systems because it is ultimately, the "interdependent vitality of all natural and anthropogenic ecosystems, social, political and otherwise" (Prescott et al. 2022, p. 3501). There is also a growing understanding that individual and planetary health are interconnected (Brown et al. 2023; Zelenski et al. 2023). Simultaneously, there is increasing consensus that individual and household resilience are interrelated with community resilience (Berkes et al. 2008). Moreover, community development literature recognizes that resilient communities require ecological capital among other kinds of capital, "wherein a healthy ecosystem supports human well-being, and a thriving society is best able to care for its environment" (Berkes and Ross 2013, p. 15). It all comes full circle.

Therefore, acknowledging the interdependence between all three categories of inner, community, and planetary resilience, the Loka Initiative proposes an approach we call Deep Resilience, which allows us to pursue all three resilience goals simultaneously and equally.

Awakening to Our Interdependence with Nature

Loka draws upon two knowledge systems, both pedagogically and experientially, Indigenous Traditional Knowledge specifically from the contiguous land base known as North and Central America (often referred to as Turtle Island) and traditional Tibetan Buddhism from Tibet, the Himalayas, and South Asia. In order to do so, we honor the people from whom we learn such instruction and examine the underlying concepts that exist to maintain them. We distinguish Indigenous ways of knowing and doing to understand the differences between

Indigenous worldviews and western European and other settler worldviews (e.g., cultural, social, spiritual), thus enabling us to find shared values and common pathways across what are otherwise cultural divides. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Indigenous peoples manage, own, use or occupy one quarter of global land area, of which at least 70% has some form of environmental protection and maintains ecological integrity (IPBES, 2019). Indigenous people refer to the pre-existing peoples who lived in a particular place prior to contact with settler populations worldwide, and who often must fight to maintain and retain their sovereignty, their spiritual and cultural knowledge and practices, and language in their original homelands. Therefore, Indigenous ways of knowing and doing refer to the complex and sophisticated teachings that Indigenous peoples receive from previous generations and from all elements in Nature (e.g., all relations) and are rooted in specific places and ecologies (Gauthier 2024).

Tibetan Buddhism emerged in the 7th century when well-known Indian Buddhist masters and scholars were invited to teach in Tibet, eventually resulting in the formation of the Nyingma (oldest) lineage of Tibetan Buddhism (Gyatso 1995). In contrast to other forms of Buddhism, Tibetan Buddhism offers a combination of classical Mahayana teachings and meditation practices (such as Lojong and Madhyamika) and Vajrayana meditation practices, which consists of Buddhist tantric practices (such as Mahamudra and Dzogchen) and the integration of some pre-Buddhist Indigenous practices (such as Bardo rituals). Over the centuries, 4 major and several minor schools or lineages developed in Tibet, which taught diverse forms of contemplative practices that all led to one goal; generating wisdom and compassion in equal measure to gain enlightenment. All of these lineages highlight meditation on interdependence as an entry point to give rise to compassion for all sentient beings (Gyatso 1995).

These two knowledge systems from different parts of the world inform us that interdependence is the unifying principle for building inner, community, and planetary resilience, which is reinforced by science at all levels, especially when analyzing complex systems (Zelenski et al. 2023). In order to operationalize this framework, we look to practices that embody the Indigenous concepts of relationality and kincentrism in Tribal and Indigenous nations across Turtle Island and of interdependence as it is taught in Tibetan Buddhism. There are two major values that emerge for us.

Centering Mother Earth Through Relationality and Kincentrism

Relational thinking is deeply embedded within Indigenous values systems (Gould et al. 2019). It is activated at the individual level, extends to family and community systems, and is recognized as necessary for human and environmental well-being (Salmón 2000). Indigenous communities understand how to connect to and cultivate a healthy and loving relationship with Mother Earth, whom they view as their most precious matriarch, on which all life and well-being depend. In particular, revering the gendered nature of Mother Earth provides a significant evolution away from the Anthropocene in which gender undergirds patriarchal colonialism. Revering Mother Earth is a core value of Indigenous peoples and provides the basis of their indigeneity, sovereignty, and right to self-determination as well as interpersonal human development and wellness (e.g., engenders love, compassion, and empathy) toward ethical pathways to economy and ecological healing (Child 2013).

'All my relations', a concept widely used by Tribal and Indigenous nations across Turtle Island, refers to the interconnectedness of all creation and that stewardship engenders reciprocity wherein humans are just one part of an extensive system of relationships (i.e., kinship) (Gould et al. 2019). This reciprocity allows Indigenous peoples to see a *kincentric* relationality with all living beings, out of which emerges a powerful commitment to live in ways that are in balance with the Earth's systems. Being a good relative is at the core of all these teachings, and good relations with all beings is the most critical ethical construct. This wisdom is what we most need to survive and thrive in the Anthropocene. Reconnecting with one another, and with the land and water through culturally rooted practices is critically important for Indigenous peoples and communities. Maintaining connection and communication with the land and water improves the health and well-being of Indigenous healing traditions. It is as Kyle X. Hill, Assistant Professor in the Division of Environmental Health Sciences at the University of Minnesota, said at the RITA Summit, "our body is an extension of the Earth."

One way to respect and learn from Indigenous knowledge and practices without appropriating them is to engage in traditions that maintain links with ancestors, in accordance with the traditions of peoples' communities. Cherishing lingering ties with ancestors has been observed by varied communities across the world. In Mexico, people celebrate the Day of the Dead and routinely visit the graves of departed family members, while Hindus in India ceremoniously feed their ancestors rice balls. Although maintaining ties with ancestors is a long-held tradition, it is also true that many of these connections and beliefs have unraveled, especially in the West and in urban areas globally. Sustaining connection to ancestors may also foster a sense of belonging to the land in the context of sacred sites. Greater engagement with natural spaces improves individual mental health through Nature immersion and generates a deeper sense of community through reviving/ maintaining connections with deceased relatives. At the same time, this creates potential for the evolution of ideas that seek to protect those natural landscapes. This belief is encapsulated by Michelle Johnson Jennings, Professor at the University of Washington's School of Social Work and Public Health and Director of Indigenous Environmental Health and Land-based Healing Division, co-Director Indigenous Wellness Research Institute, who said at the RITA Summit, "We have been resilient for thousands of years…. *Oh Chash*! It is our word in Choctaw that we would say to call upon our ancestors for guidance. One way that we do that is to call upon them to help guide us today, by reclaiming our ancestral practices, revitalizing those stories that were taken, the songs that were taken from us. We've learned that we can come together and create new songs, new ways to be on Mother Earth."

Tendrel; The Law of Interdependence

Interdependence is a central tenet that underlies all Buddhist teachings, expressed in the Buddhist canon as "When this exists, that comes to be; with the arising of this, that arises. When this does not exist, that does not come to be; with the cessation of this, that ceases" (Ñāṇamoli and Bodhi 1995, p. 927). This tenet, called *Tendrel* in the Tibetan language, often referred to as the law of dependent origination, holds that nothing exists independently, permanently, or absolutely. Rather, everything—all beings and all phenomena—is the product of limitless play between circumstance and interconnections, and these causes and conditions continue in a process that creates *karma* (causality) anew, moment to moment. His

Holiness the 17th Karmapa, the head of the Karma Kagyu School of Tibetan Buddhism, writes that this state of profound connectedness, interdependence, "is the nature of reality. It is the nature of human life, of all things, and of all situations. We are all linked, and we all serve as conditions affecting each other" (The Seventeenth Karmapa 2014, p. 6).

Interdependence is more than a concept in Tibet, the Himalayas, and South Asia; it is the basis for how local collectivist societies have formed and continue to thrive. At the RITA Summit, His Eminence Mingyur Rinpoche, Tibetan Buddhist teacher and best-selling author, said, "In the Himalayan mountains, we have Native peoples, and in many parts of the world, the Native people, the First Nations, and Indigenous people know a lot about environmental interdependence. So, in my hometown (Nubri), you cannot cut trees except branches or dead trees. That is what we believe is good for preventing big fires. In my hometown, we have about 200–300 people, and we all work as a team. We are equal in nature and without hierarchy as in the Western concept, and everybody is interdependent, relying on each other and connecting with each other."

Tibetan Buddhism and Indigenous healing ask that the embodiment of interdependence first begin within. Each one of us interacts with all the causes and conditions of our lives to shape the world as it exists for us. We are world creators and the authors of our own creation stories. Each of us needs to ask ourselves, what does interdependence look like for me, and how can I manifest that experience outside of me? This simple question gives birth to a new intention in the world, an ethic that must be embodied. Tibetan Buddhist teachings often use interdependence as the diving board into compassion and loving-kindness meditations while Indigenous healing considers the individual in relation to their family, community, and the natural world. Once we know, in the genuine sense of knowing, that we are all interdependent, we cannot help but let go of the dualism of self and other and in-group and out-group categories and allow compassion and loving kindness to take their place. This embodiment is the only way we can reverse the polarization that proliferates in our societies today.

Three Pathways to Deep Resilience

Deep resilience is not just a concept, but a tangible outcome that begins with approaching inner, community, and planetary resilience as a combined and coherent whole. Informed by the two values that we discuss earlier, we see three emergent pathways to deep resilience which focus on simultaneously building inner, community and planetary resilience through contemplative practices that build nature-relatedness and a purposeful connection to the land, which then serves as a source through which we can address the complex social and ecological issues that lead to community wellbeing and justice. Centering Indigenous worldviews of interdependence can also help us to transform neoliberal and colonial systems of oppression towards those of kinship and care.

Neuroplasticity Through Contemplative Practices

The severity of the current climate and ecological crises evokes intense emotional responses for many people. Anger, anxiety, despair, exhaustion, fear, frustration, and grief are common feelings that reflect deep concern for our planet and the challenges we face (Pihkala

2022). Learning to validate and regulate our emotions supports better mental health, collective well-being, kinder impulses, values-based decision-making, and can empower people to take proactive steps in addressing environmental and climate issues by channeling energy into meaningful action and solutions (Plonski and Urry 2024; Troy et al. 2023). Neuroplasticity–the brain's capacity to change in response to experiences by reorganizing and forming new neural pathways–underlies developing new habits and transforming behavior to align with core values (Dahl, Wilson-Mendenhall, and Davidson 2020; Davidson and McEwen 2012). Research indicates that intentional mental training can cultivate well-being through neuroplastic changes (Dahl, Wilson-Mendenhall, and Davidson 2020). Learning to reinterpret emotionally challenging events with a constructive, meaning-focused lens can reshape brain pathways to create lasting change that reflects what truly matters (Ma, Moore, and Cleary 2022). Instead of suppressing or invalidating emotions, this learning begins with allowing and orienting to difficult emotions in a constructive and caring way (e.g., Lindsay and Creswell 2019). Our emotions provide important insights for adapting to different circumstances and assessing needs, strengths, and challenges. Believing in the value of emotions and the ability to navigate them encourages exploration of strategies for positive change (Ford and Gross 2018).

There are many techniques and skills that can help us validate and regulate our emotions. In accordance with the theme of this special issue, we pay attention to awareness practices for addressing environmental emotions. Contemplative practices are a form of training that "emphasizes self-awareness, self-regulation, and/or self-inquiry to enact a process of psychological transformation" (Davidson and Dahl 2017, p. 121). These practices can range from meditation and mindfulness exercises, to somatic body movement such as Yoga and Tai Chi, and Nature immersion and Indigenous land-based healing (Harrell 2018)[2]. There is increasing evidence that Buddhist meditation and mindfulness techniques can benefit people, whether it is by training meta-awareness, improving attention and focus, cultivating qualities like compassion, or building insight into ourselves (Dahl, Lutz, and Davidson 2015; Dahl, Wilson-Mendenhall, and Davidson 2020). Such practices can generate a heightened, flexible attentiveness to our environment and internal cues, such as bodily sensations, thoughts, and feelings.

Traditional Tibetan Buddhism offers meditation practices specifically tailored to individual practitioners; hence there is an emphasis on teacher-student relationships, a diversity of lineages, and even a variety of sequential meditation practices within and across lineages. The main goal of all these practices is to increase compassion for all beings, effortlessly generate loving-kindness, and develop wisdom and equanimity; in short, to awaken to what is understood as our innate *Buddha-nature* and eventually achieve enlightenment. Inner resilience is not the goal but a positive byproduct of these practices. Various Tibetan Buddhist texts describe five known cognitive techniques: settling, centering, awareness, attention, and concentration, often taught and practiced sequentially (Rapgay, Rinpoche, and Jessum 2000). In this context, awareness practice occurs when consciousness becomes the object of meditation, and the practitioner maintains awareness of what their mind generates without becoming attached to their thoughts and feelings. If the practitioner is *realized* enough, an

[2] We are explicitly refraining from discussing Indigenous land-based healing practices given the current discourse around the growing cultural appropriation of these practices which should be learned within Indigenous community contexts and guided by Indigenous experts.

awareness practice can lead to experiencing the nature of the mind as both spacious and temporary.

Training in awareness during these meditation practices can increase what is called "meta-awareness," or becoming aware of what is happening in your mind while meditating. One way to connect us to community and Nature through meditation could be to ground our practice by contemplating our interdependence with Nature, in which our attention, when it drifts away, is drawn back to the examination of this relationship. An example of Nature-based contemplative practices consists of examining our dependence on clean air, clean water, food, medicine, shelter and the many other necessities that we require to exist. Over time, as we observe the thoughts and feelings that arise in our mind as a result of this grounding practice, we can gain meta-awareness of the impact such as feelings of gratitude or grief or compassion and more. In keeping with non-dual styles of meditative practices, conscious awareness that naturally arises during the practice could persist over time even after the object-focused meditation itself stops (Dunne, Thompson, and Schooler 2019). Therefore, we can also assume that nature-based contemplative practices may result in a deeper connection with Nature, often referred to as nature-relatedness. Research shows that people with higher nature-relatedness—which encompasses emotions, experiences, and an understanding of human interconnectedness with all other living things—are generally happier and more resilient (Olivos and Clayton 2017). We suggest that this approach to awareness meditation is invaluable for generating pro-environmental attitudes and behavior change, especially if combined with the other two pathways.

Community, Connection, and Justice as the Means and the End

The current environmental and climate crisis is complex and intertwined with systemic issues that permeate all facets of life across the globe. Factors such as systemic oppression, racism, and inequality directly impact, exacerbate, and impede our ability to address environmental challenges. It is impossible to separate the symptoms of the Anthropocene—the deleterious impacts on social fabric, economic arrangements, and political systems—from historical and present-day structural injustices. The "development" of the global north was fueled by the direct extraction of wealth, natural resources, and labor from the global south to fund and buttress European empires (Chakrabarti and Patnaik 2018).[3] Racist hierarchies were institutionalized in this period that continue to cause devastating damage to people, especially in the global south and among Black, Indigenous, and other communities of color in the global north (Cowie etal. 2022). The very fact that most developed countries have not taken adequate action to mitigate climate change or to provide compensation to the global south (which has contributed least to the problem and disproportionately bears the impacts) demonstrates how racism can function insidiously and systemically to subvert justice. Within this global order, entire communities have been destroyed around the world and relationships within communities have been systematically broken up, resulting in growing individualism in collectivist societies.

Connectivity is the basis for life on Earth. Whether it is the synapses between our nerve cells, familial relationships, or the mycorrhizal network of hyphae, which connects individual trees and plants to transfer water, nitrogen, carbon, and other minerals, life on earth is

[3] Some scholars have calculated that between 1765 and 1938 (Britain's colonization ended in August 1947), Britain extracted approximately $45 trillion from colonial India—ten times United Kingdom's GDP in 2015.

predicated upon connection. The mutation of capitalism into neoliberalism–an extreme form of free market capitalism which requires deregulation, globalization and mass privatization–has continued the harm done by colonialism and patriarchy. By destroying communities, and therefore the centrality of interdependence, kinship, and relationality, neoliberalism weakens both individual wellbeing and the basis for building solidarity, resistance, and collective resilience against environmental and climate impacts. Community-led collective action that calls for historical and present-day justice is necessary to strengthen social and relational capital and ensure belonging, and to initiate the structural transformation that can rebalance our governance, economic, and political systems as well as the Earth's ecological systems.

On the final day of the RITA Summit, Diana Liverman, Regents Professor at the School of Geography, Development and Environment, University of Arizona, centered justice as an important component of resilience, not just for psychological considerations but even within the context of planetary boundaries. Emphasizing the key issue of equity and reparative justice at a systemic scale, she said, "What would happen if we gave everybody basic access to energy, water, food, housing, and mobility; what would that mean in terms of pressure on earth systems if we didn't change anything else? So, if we just brought the millions of people up to a basic level without, for example, reallocating the consumption of the rich to allow those people space for access". She concluded that the only way we can address the multiple crises we currently face is to apply principles of justice that result in environmental and climate reparations.

The means is the end. One of the most accessible ways to create just processes and systems is through community organizing and collective action, the process of building power through the collective instead of through a small number of wealthy and powerful individuals. We contextualize Loka's Deep Resilience framework within the reality of ongoing conflict and genocide, systemic oppression, financial inequity, and structural racism that many individuals and groups of people must face as an everyday reality which means we must go beyond the framing of resilience as a "bounce back" or even, "bounce forward," but move into what Devin Atallah and others have named as "centering at the margins" (Atallah et al. 2021, p. 875). Our work must, therefore, "avoid the reinforcement of social hierarchies and interlocking systems of oppression" in whatever we attempt (Atallah 2021, p. 875). Tamara Toles O'Laughlin, the founder of Climate Critical, said at the RITA Summit, "The scope of solutions we need is the reason why community is our answer. Because community is the smartest, biggest organism for resolving conflict, that removes it from the fallacy of interpersonal and personal capacity." Community organization and collective action can remedy and reform systemic issues on multiple levels, including corruption and bad governance. They require identifying problems that community members share and solutions that a majority desires, as well as a process that embodies the will and the power of that constituency because we are interdependent. A deep resilience framework allows us to meet our fear with courage, accept impermanence while understanding deathlessness, and work as if our individual wellbeing lies in the wellbeing of the collective because it does.

Downscaling Growth to Reach Systems Coherence

The environmental and climate crises have enormous consequences for businesses, societies, governing bodies, and leadership across all of these institutions and systems. The International Climate Fund concluded recently that under a "business as usual" scenario

with high greenhouse gas emissions, at least 53 million Americans in disadvantaged communities will be exposed annually to health threatening extreme heat in the next 15 years (Bruzgul et al. 2024). The numbers are much higher globally, especially in developing and vulnerable countries (Adom 2024). As global warming rates continue to rise (Banholzer et al. 2014; Van Aalst 2006), climate-related natural disasters are predicted to increase in both frequency and intensity (Summers et al. 2022), which will naturally spill over into political, economic, and social realms[4].

The dominance of neoliberalism as a development paradigm, "which posits that "economic growth is the sole avenue to development and social progress," has brought us to this precipice, and must come to an end given the rapid intensification of environmental and climate constraints (Macnaughton 2018, p. 45). Systemic transformation is necessary. Green growth, the solution offered up by neoliberalism which refers to practices that use low carbon and sustainable development approaches as a path to sustainability to mitigate the environmental and climate crisis, has not worked at scale. Despite its dominance in national and international policies, especially within the sectors of agriculture and food production, energy, industry, and waste management, green growth's premise that continuous economic growth is compatible with sustainability through technological innovation (OECD and The World Bank 2012) appears false. Our planet cannot sustain it. According to the Global Footprint Network, we transgressed the Earth's annual biocapacity to provide resources that humans need on August 1, 2024. Known as Earth Overshoot Day, this date marks the date in the year after which we are in deficit, using up the Earth's savings of ecological resources.

In response, degrowth, meaning the downscaling of economies to use less of the world's resources, has gained broader institutional and scalar support, including its first mentions in the 2022 Intergovernmental Panel on Climate Change Climate Report (Intergovernmental Panel On Climate Change (IPCC) 2023). While making a case for humanistic management as a paradigm, Pirson and Lawrence (2010) argued that capitalism is "at a crossroad and scholars, practitioners, and policymakers are called to rethink business strategy in light of major external changes" (p. 553). A systems approach encourages an examination of resilience as a process rather than a product, where the resilience of systems is not only predictable or deterministic but also able to connect, adapt, and self-organize (Birdsey et al. 2017; Dobson et al. 2019; Hahn and Nykvist 2017; Heylighen 2001). Being in disorder or disrepair does not negate the possibility of emerging order and repair. In fact, most resilience theories emphasize responsiveness and transformability as key characteristics. If institutions want to be adaptive to the ecological and climate crises and build deep resilience, *and* also be profitable, they must have a coherent systems approach that genuinely invests in all points of a resilience-building process instead of jumping to language around the desired outcome. One way to do so across an institution or system is to prioritize other kinds of growth over economic growth, including better health, happiness, and environment, and apply them to metrics that measure their success, moving towards circular or degrowth approaches. Doughnut economics, for example, is one such systems-level degrowth approach, created by Oxford economist Kate Raworth (Raworth 2017). It allows policymakers and managers to have strong regulatory oversight and to prioritize public spending that improves community well-being and shifts away from resource-extractive and inequitable solutions. Far from being just a theory, doughnut economics has been applied across several scales, with

[4] A recent study in *Nature* predicted that more frequent and extreme weather will cause $38 trillion of destruction annually in the next 15 years (Kotz et al. 2024).

Amsterdam being the best example of how cities can adopt it successfully (Khmara and Kronenberg 2023).

Systems coherence refers to the consistency of values, policies, and practices so that all parts of an institutional vision, mission, procedures, and practices are functionally aligned. Applying a planetary systems view requires that institutions practice coherence and integrate, as appropriate, climate adaptation and mitigation, disaster preparedness and reduction, while recognizing that economic growth cannot be the primary metrics of success for development and social progress. Dr. Elizabeth Sawin, the founder of the Multisolving Institute, explained in the RITA Summit that we can navigate a chaotic and unpredictable decade by prioritizing coherence in our organizations, strategies, and investments. A systems view that connects inner, community, and planetary resilience can transform how we live, build and manage businesses, create resilient economies, and walk us back from the brink of ecological and climate collapse. It emphasizes connection and community and calls for coherence as a systems principle. And, one has to practice awareness continuously in order to be successful at it.

Conclusion

The Anthropocene refers to an era of deep uncertainty and potential collapse, which demands that we prepare for this reality immediately and at all scales across the individual, societal, business, governance, and global levels and invest in building inner, community, and ecological resilience simultaneously and equally. Loka's Deep Resilience Framework offers a unified approach that allows us to maintain what is necessary for us to survive and even thrive in this period of growing environmental, social and economic turbulence, and pathways that can bring us back from the precipice of enormous climate and ecological disasters. Deep resilience invites us to lean into the principle of interdependence and learn from Indigenous ways of knowing and doing and Tibetan Buddhist teachings that embody and translate this principle into practice. We offer three pathways to Deep Resilience at the individual, community, and planetary scales; working with contemplative practices towards positive neuroplasticity among individuals, investing in connection, community, and justice in our societies, and downscaling growth to reach systems coherence at the institutional level.

Deep resilience requires us to act on inner, community, and planetary levels with a full awareness of their interdependence[5] and do it now when we still have time to adapt our behavior and minimize environmental and climate damage done to the planet and to ourselves. The Anthropocene is often described in fatalistic terms, but there is no reason why

[5] A resource that may be helpful to readers is a 4-course certificate program, *Psychology of Deep Resilience*, created by the *Loka Initiative* and our partners, the *Center for Healthy Minds*, *Nelson Institute for Environmental Studies*, and *Continuing Studies* through edX's University of Wisconsin-Madison platform. The course is designed to help participants meet the Anthropocene with courage, determination, and a fierce reclamation of communal joy. All content is available for free. The program integrates 15 contemplative practices, and has research embedded within the course to understand better how we can all nurture deep resilience. In the future, the Loka Initiative will be examining and testing various indicators for further operationalizing this framework, and we invite readers to contribute their own thinking and work to strengthen how we build resilience for ourselves and our communities.

it cannot refer to a time when humanity reverses its actions to protect all life on Earth and builds inner, community, and planetary resilience instead.

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Declarations

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