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Author(s): Sabaheta Ramcilovic-Suominen

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2 On the illusion of separate self (as root cause of socioecological crises) and radical intraconnectedness (as precondition for healing and transforming)

Sabaheta Ramcilovic-Suominen

Positioning the chapter and the book within the socioecological transformations literature

Owing to the widespread recognition and concern over the interlinked socioecological threats, the centrality of transforming our societies to kind, equitable, and just cannot be overstated. Such threats include, for example, socioecological injustices, poverty, inequality (Hickel 2018; Oxfam 2024), overexploitation and extractivism (Gills et al. 2024), pollution, loss of biological diversity, climate change (IPBES 2019; IPCC 2023), settler colonialism, ethnic cleansings, deliberate mass killing (Khatib et al. 2024), and other crimes against humanity and Life itself. These are, however, only some of the most striking examples of the widespread unrest and violence of the present day.

Against the scale and prevalence of this violence and destruction, an increased awareness, momentum, and a sense of urgency have emerged to change course and shift away from past and present oppressive systems and lifestyles. Much has already been written about socioecological and sustainability transformations. To more fully understand the different approaches and different frameworks, see, for example, Bentz et al. 2022; Feola et al. 2021; Gram-Hanssen et al. 2021; Geels 2020; Leventon et al. 2021; Hamilton & Ramcilovic-Suominen 2023, all of whom propose distinct ways to approach, study, embody, and/or practice transformations. The existing literature emphasizes various aspects of transformations, proposing useful conceptual and analytical frameworks, including those that differentiate between (i) scale (micro/small-scale to macro/societal); (ii) dynamics (incremental to fundamental or radical); (iii) scope (sociotechnical, societal, socioecological); (iv) levels (individual/personal to structural and collective); and (v) means (through social movements, insurgency, resistance, or through policy and institutions).

Most of this literature and the praxis of transformations have focused on altering domains or spheres, which, while more accessible, are less effective in triggering larger collective or societal changes and transformations. Such domains or spheres include the so-called practical (technologies, behavior, and actions) and political (i.e., institutional structures, such as policies, laws, governance,

and decision-making). Both the “practical” and the “political” rest upon a third sphere—the “personal” sphere—which includes individual and collective values, beliefs, worldviews, paradigms, and perceptions about the nature of reality and our own nature, our roles in the world, and the ways in which we are in the world and/or relate (with)in it (O’Brien & Sygna 2013; Sharma 2007; O’Brien 2021). There is a growing recognition of the importance of working within the “personal” sphere for collective change (e.g. Vogel & O’Brien 2022), and an emerging body of literature explores the relations between personal and socioecological or collective change and transformations (O’Brien 2021; Sharma 2017; Wamsler et al. 2021; Woiwode et al. 2021). This chapter contributes to this body of literature, by exploring the notions of the Self and the implications for change and transformations.

In line with the first aim of this book, which is to reclaim the term transformations as actions and responses that address the root causes of socioecological crises, including the ideational, symbolic, and ontological, I focus on the illusion of separate self. Specifically, I argue that such illusion results in the feeling of alienation and human suffering as one of the root causes of socioecological violence and destruction. This illusion is at the core of the materialist-dualist worldview and the associated human-nature divide and other hierarchies, which are discussed in the introductory chapter. While informed by the teachings of Buddhism and Yoga, the illusion of a separate self and the associated suffering have profound implications for modern-day ecological destruction, including the accompanying grief and the desire for change (Loy 2019a, 2019b; Macy 2021; O’Brien-Kop 2023).

In my previous work on socioecological transformations, I have emphasized the colonial-racial-capitalist system of oppression as the root cause of socioecological crises (e.g. Ramcilovic-Suominen et al. 2023; Ramcilovic-Suominen 2025), arguing that transformations must explicitly be anti-hegemonic; therefore, anti-colonial and anti-capitalist (Hamilton & Ramcilovic-Suominen 2023; Ramcilovic-Suominen 2023; Verhaeghe & Ramcilovic-Suominen 2025). In this chapter and the book at large, I dig deeper to unravel and disentangle the ideational bases that sustain and enable such root causes of socioecological destruction and violence. As argued in the introductory chapter, these ideational bases directly enable the (neo) colonial-racial-capitalist nexus. The myth of the human-nature divide and hierarchies of worth, which were used in defense and perpetuation of the colonial-capitalist project and imperialism (Danewid 2023; Fanon 1952; Ghosh 2021; Krawec 2022; LaDuke 1999; Whyte 2018; Said 1993), are impossible to conceive of without the said illusion of separation, or what Oliver (2020) terms “the self delusion”. Therefore, this contribution complements rather than contradicts the literature that identify the colonial-racial-capitalist nexus as the root cause of socioecological violence and destruction.

In line with the second aim of the book (i.e. to expand the definition of “radical transformations” in terms of root causes of socioecological violence, as well as pathways to transformation), I introduce the concept of “radical intraconnectedness” as a response and a strategy for radical personal and collective transformations. “Radical intrarconnectedness” is defined by the practice and embodiment of the qualities of deep intraconnection, kindness, openness, caring, and loving relations

with the rest of the ‘Self’. In today’s hegemony of violence—both systemic violence and violence as a response to systemic violence—radical intraconnectedness is a much needed truly radical, non-violent, care and solidarity-based response. Embodying such qualities in our daily lives could be essential for personal, collective, and structural change (Fazey et al. 2018; O’Brien 2021; Sharma 2017; Wamsler et al. 2021; Woiwode et al. 2021). This imperative remains, even if scaling transformations between these levels is far from straightforward. As a response and tenet of radical change and transformations, “radical intraconnectedness” questions the strict division between the individual or separate self (with a small “s”, also known as ego, or ego-self) and the whole, pointing to the “intra”, rather than “inter” connectedness. I build on Siegel’s (2022) term of “intraConnected” to emphasize a shift from viewing the self as an isolated individual to a Self that is fundamentally interwoven within all the rest. I frame radical intraconnectedness as a tool for individual and collective change, which relies on and applies reflective activism and “active hope” (Loy 2019b; Macy & Johnstone 2012).

The illusion of separate self as the root of suffering and socioecological violence

The emergencies threatening civilization and the biosphere are products and manifestations of many “things”. The phenomena and events that are unfolding in front of our eyes, from social injustice, inequality, and violence to the destruction of life-supporting biological processes and climatic conditions, are products and manifestations of socioecologically hostile and destructive economic and social policies, institutions, and structures that uphold the colonial-racist-capitalist political and economic system (Fraser 2022; Hickel 2018; Hickel et al. 2021; Patel & Moore 2017). Those institutions and structures are based on and reproduce multiple forms of domination, violences, and extractivism associated with settler colonial and capitalist expansions, including racial, gendered, ecological (land, biosphere, atmosphere) (Danewid 2023; Fanon 1952; Whyte 2018), as well as cognitive violence (also referred to as ontological and/or epistemic) (Mignolo 2011; Quijano 2000). When we start to metaphorically “peel the onion”, piling layers upon layers of underlying reasons and conditions that have brought us to where we currently are, we come to realize that at the center is the illusion of separation.

In the introductory chapter, I discussed the different ontological positions, distinguishing the dualist and materialist, and the non-dualist or monist positions as two extremes of a spectrum. Here, drawing from the philosophy of Yoga Sūtras of Patañjali (Larson 2001; O’Brien-Kop 2021), I outline the notion of the “Self”. In line with Patañjali’s teachings, I approach Yoga as a philosophy based on the ancient Eastern philosophical framework and metaphysics of the Sāṅkhya philosophy (Larson 2001), the teachings of Upanishads (Sharma 2008), as well as, as Yoga as practice. The goal of Yoga is liberation that comes with the knowledge of the nature of the Self; thus, Yoga is essentially a practical and philosophical inquiry into the nature of the Self.

From this Yogic perspective, we can metaphorically differentiate between two intraconnected selves. The Self (*Purusha* in Sanskrit) that is the permanent pure consciousness, the light of awareness, and the self (*Prakriti*) that is the impermanent material world, including the individual mind-heart-body nexus, are referred to here as “ego self”. The two can be equated with Atman and Brahman in Advaita Vedanta, with the difference of how the relation between the two is framed. In Sāṅkhya-based Yoga, the two are seen as separate. Highlighting, however, the complementarity between the two, O’Brien-Kop (2023) refers to the duality between *Purusha* and *Prakriti* as “sacred duality”. We will call this permanent eternal consciousness as true Self (referred to herein as Self, with capital *S*), while the individual mind-heart-body nexus will be referred as the ego self (with a small “s”). The former is irreducible, unchanging, and unaffected by the impermanent ego self, with which it is associated, and which represents the sub-total of all our experiences and action, or karma. Unlike the permanent and unchanging character of the Self, the ego self is in constant fluctuation, change, and is a subject of suffering and pain (*Dukha* in Sanskrit). The ego self can—and that is the very goal of yoga—rid itself of suffering, through the process of contemplation, ethical observances (*yamas* and *niyamas* in Sanskrit), and self-study (*svādhyāya* in Sanskrit), which lead to self-realization (i.e. transcendence of the illusion of separateness). This process can occur through various yogic methods, including the contemporarily best-known method of the “Eight limbs of Yoga” (Ashtanga Yoga), which leads to self-realization, in other words to the true knowledge of the nature of the Self and thus liberation (*Moksha* or *Kaivalya*), which is the ultimate goal of yoga (O’Brien-Kop 2021).

An important concept is the so-called veil of ignorance (*Avidya* in Sanskrit), which is our lack of awareness about the true nature of the Self. The ego self, the body-heart-mind complex, is mistakenly taken as our true nature. To see through this veil of ignorance we need to—through the practice of Yoga—calm our fluctuating mind (*citta vritti* in Sanskrit) to cultivate inner calmness and mental clarity. These activities help one to see through the veil of ignorance to our true nature. Our true nature, the Self that is one with everything, which is not limited to this body and this lifetime but is the representation of the timeless and limitless permanent and pure consciousness (Loy 2019a; Macy 2021; Spira 2017). Realizing that I, you, and all beings embody and manifest the same shared consciousness or light of awareness implies that all beings, human and other-than-human, animals, and plants are reflections and representations of the same pure consciousness. Thus, I/you am/are not separate from the rest of nature and the rest of nature is a reflection and manifestation of my/yourself. Such a perspective promotes kindness, selflessness, love, and a sense of unity with all beings. It promotes non-violence and compassion, which are some of the key values or ethical principles in the teaching of Yoga and other eastern philosophies and traditions, such as Advaita Vedanta, Buddhism, Zen, and Dao/Tao teachings and philosophies (Loy 2019a; Macy 2021; Watts 1960).

Much has been written about the Western human-nature divide and human exceptionalism, especially how it has led to and justified systemic racial and social

violence and socioecological harm and destruction (Mignolo 2011; Quijano 2000; Wa Thiong'o 1998). In the previous chapter, I articulate how the idea of superiority over, and estrangement from the rest of nature and from black and indigenous peoples by white colonial occupiers, have justified the colonial-racial-capitalist nexus. Much in the same way, the illusion of separate self—the idea that we exist as a body-heart-mind nexus, separate individuals placed in a foreign world dominated by other species and beings—that are not us—promotes a lack of trust, motivation for dominance and control, and even hostility (Watts 2012 [1958]). This foreign world, contemporarily framed as our “environment”, cannot be trusted, just as our own nature cannot be trusted (as the “Original Sin” and Christianity teaches, see Watts 2012 [1958]; White 1967; Wilkerson 2020) and therefore it needs to be controlled and conquered. Hence, the best we can do is to protect ourselves and those of our kind from this hostile environment by managing and controlling it (Watts 2012 [1958]). Such perspectives can and have been used to justify control and exploitation of nature, most of more-than-human beings, and human beings from other races with the additional narrative of racism. This may happen consciously or unconsciously, as we internalize and embody these myths from early age, so much so that they become our default way. The teachings of separation and duality have been effectively used and mobilized by the colonial-racial-capitalist patriarchal establishment in the past as present for the accumulation of profit, power, land, energy, and in some cases for the sake of domination alone. These myths are immersed and internalized in the global institutional structures, which represent the more obvious and the better-understood structural causes of socioecological destruction.

The philosophies that teach unity and an inherent oneness with everything around us, the whole Universe (Loy 2019b; Kumar 2002; Macy 2021; O'Brien-Kop 2021; Wallace 2010; Watts 1960), demote socioecological violence, destruction, and domination. Experiencing ourselves and our existence beyond our bodies and as part-wholes of the rest of life (our “external environment”) promotes nurturing and caring for that “external environment” because *it is One* and the same with us. This is not too dissimilar from the indigenous teaching of coexistence in relation with the rest of nature. For example, such an understanding and framing of the Self resonates with the indigenous views and concepts, including the idea of fluid identities, where the boundaries between us as individuals and others are permeable (*Viveiros de Castro 2014*). In both cases, seeing ourselves as one with the “environment” dismantles the ideas of domination and mistreatment that have led to socioecological violence and destruction. It is, of course, clear that these ontologies and philosophies do not directly translate into specific desirable actions and behaviors. Rather, their embodiment, manifestation, and practice depend on several “things”, including our mindset and interpretation, our experiences, past and present action, as well as our socially-constructed institutions, which represent the better-understood structural aspects of transformations (see Chapter 13 by Ramcilovic-Suominen and Chapter 14 by Verhaeghe).

Deconstructing the illusion of separate self through “radical intraconnectedness”

According to Karl Jung (1966, 2014), the illusion of a separate self develops in early childhood as we grow to become capable of survival on our own and is further strengthened through social norms and conditioning (Jung 2014). As Jung argues, this is crucial to developing a strong sense of self, yet it is at the cost of suffering and a feeling of incompleteness or a sense of isolation, which can only be abated by integration of ego with the whole (Jung 1966, 2014; Loy 2019a, 2019b). This resonates with an innate veil of ignorance that prevents us from seeing the inherent oneness of the Self, which is also discussed in Yogic traditions as elaborated earlier. While psychologically conditioned, the illusion of a separate self is further learned and strengthened passively or actively by force. Passively, this happens through the socialization process, which is the social and cultural interactions within family and community, in formal education, and popular culture, among other places. These processes are certainly stronger in some societies and countries than in others. Actively, this happens using force and onto-epistemic imposition, as in the case of colonialism (Escobar 2018; Quijano 2000; Wa Thiong’o 1998).

It is this difference, that is, the psychological and passive, versus the forced and active imposition of the illusion of a separate self, that provides the analytical prism for differentiating between the “radical interdependence”, as proposed by Latin American scholar, Arturo Escobar, and the here proposed “radical intraconnectedness”, based on Eastern philosophies and spiritual teachings (see Sections 2 and 3.1, see also Kumar 2002). Namely, the former is concerned with the forced imposition of separation through modernity/coloniality, while the latter—with the veil of ignorance and the psychological origins of the illusion of separation, as described by Karl Jung (Jung 1966, 2014).

Acknowledging the importance of the different contexts in which separation occurs and develops, including internalizing and taking for granted the duality between us and the world around us leads to a feeling of estrangement from the rest of nature and the world at large, which is a source of dissatisfaction, lost connection, depression, anxiety, and the general feeling of lacking (Kureethadam 2018; Loy 2019b; Macy 2021; Topa & Narvaez 2022; Watts 2012 [1958]). This in turn leads to an obsession with, and desire to cling to things, material objects, possessions, pleasant experiences, and/or to people who make us feel happy, worthy, whole, loved, and connected (Loy 2019b). Relatedly then, the separation from the rest is also a source of greed, selfishness, desire, as well as a feeling of entitlement to own and use the rest of nature and misuse or dominate others for individual self-gain (Watts 2012 [1958]), with whom we do not share loving or caring relations or relations of community (Macy 2021). This provides a fertile ground for a mindset and a lifestyle that brew conflict, exploitation, and extractivism of those whom we see as “others”. This is clearly shown through the example of colonial-racial-capitalism (Danewid 2023; Wa Thiong’o 1998).

If we wish to adopt a truly radical (note again that radical comes from the Latin word *radicalis* meaning root) approach to transformations, we should be ready to collectively revisit and let go of the myth of our supposed separateness from the rest of nature and the world at large. This letting go opens new avenues for personal as well as collective transformations. It challenges selfish, narcissistic, competitive, and domination-driven values and engagements and allows for co-creating and developing new ways of intra-acting (Barad 2007), including cooperating with other human and more-than-human beings and agencies (Haraway 2016). Letting go of the notion of a separate self deconstructs the idea of competition as a survival strategy, which is among the key drivers of the seemingly endless wars for land, resources, and the will to dominate others. It essentially deconstructs the notion that there is a world to win, a world to lead, and land and resources to capture and own. It provides renewed enthusiasm for working on collective wellbeing of the Self, which is based on the principle of inherent oneness (Loy 2019a) encompasses everything and everyone in the Universe (Watts 1960, 2012 [1958]).

When we realize and experience that rather than individual selves existing independently from the rest, we are one—as the eastern nonduality traditions of Zen, Dao/Tao, Advaita Vedanta, and others teach (Loy 20019a). The modern sciences have also started to recognize this oneness, expressed as being part-wholes of one cosmic mind (Carr 2003; Faggin 2019; Kastrup 2021). Once this shift in perspective occurs (in Eastern spiritual teachings, this is often called “awakening”), we are ready to move from the ego-centric individualist view to a view of inherent oneness. In indigenous science, this is expressed through ideas of kinship (Krawec 2022; Laduke 1999; Topa & Narvaez 2022), where everything exists in relation with the rest and has a role to play in maintaining and manifesting life on planet Earth. In Buddhism, among others, this is reflected in the idea of a life of service, referred also as *Bodhisattva*, meaning a life of service to the wellbeing and awakening of all beings, not only one’s own spiritual growth and liberation (Loy 2019b; Wallace 2010).

As the name suggests, **radical intraconnectedness** is a way of seeing reality and you/me/us/them as unique manifestations of all life, part-wholes of one living conscious “organism”, that is our planet and the whole Universe. I borrow the term intraconnected from Siegel (2022), rather than interconnected, to emphasize that the concept is about unity and mutual (co)becoming, rather than co-dependence needed for survival and influenced by semantics in the field of psychology. Radical intraconnectedness and unity in this sense is not about erasing individuality but about recognizing that our differences are manifestations of the same fundamental essence or Source. This balance of unity and diversity is central in Eastern spiritual and philosophical understandings of the nature of reality and existence. It recognizes the importance of the notion of individual self or ego in keeping us safe, protected, and continuously learning the art of becoming, but it emphasizes that this is only one among many “dimensions” of ourselves. This resonates with the analytical idealism (Kastrup (2014, 2021), which postulates the existence of a larger

cosmic mind or intelligence that is interconnected and entangled in a quantum-like ways and principles (see also Carr 2003; Faggin 2019; Penrose 1998). Again, the inherent oneness assumed in radical intraconnectedness does not negate diversity; instead, it provides the foundation for it. Diversity is seen as diverse expressions and manifestations of the same underlying Self. To think about this more concretely, consider the ocean and the waves, the trunk and the branches of the tree, and the gold and the golden ornaments; just because the wave is a wave it does not mean that it is not water. Radical intraconnectedness opens new motivations and pathways to prevent injustice and respond to the ongoing injustice in other ways than direct violence, as every violence is a violence against some aspects and forms of our own being and existence.

In line with our new perspective and experience of the Self, new ways emerge for preventing the overexploitation and destruction of “nature and environment” (i.e. the Self) along with new strategies for dealing with the ongoing destruction, and the associated pain, fear, sorrow, and grief. It is then when we can start to imagine what would it look like to live on Earth as if it was a living being, a loving mother of all life, as indigenous scholars write (Kimmerer 2013; Topa & Narvaez 2022). Similarly, as Joanna Macy notes, “*until we can grieve our planet, we cannot love it*” (Macy 2021), we take care of and protect the “things” that we love. Just as we grieve the loss of a loved one, we can and should grieve and normalize grieving the loss of part-wholes of ourselves, that is, the different manifestations of the Self, which modern human refers as the “environment” and “biodiversity”. While grief in and of itself does not translate into action, it can inspire positive action and active hope (Macy & Johnstone 2012). Shifting our perspectives can lead to the changes in day-to-day life, as we start to internalize and embody this new truth of living as a distinct manifestation of the Self. This new approach and understanding starts to show in the ways we live and interact and has a potential to scale to collective, societal, and/or systemic transformations.

***Radical intraconnectedness and radical interdependence:
similarities and differences***

From the way the concept of radical intraconnectedness is described above, we can observe obvious similarities and differences with the concept of “radical interdependence” developed by Arturo Escobar (2018). Their differences relate to the different contexts in which they are embedded in and/or emerge from, which then shape their distinct motivations and foci. Radical interdependence (Escobar 2018) is embedded within the struggle of oppressed indigenous peoples against the European colonizer. This encompasses the struggle for their self-determination and defense of their cosmologies, ideas, and worldviews, which are threatened and brought to the brink of extermination by an external oppressor. It relates to the historic struggle and also the contemporary revival of indigenous cosmologies (Kimmerer & Artelle 2024) and emerges as a response of an attempted assimilation and

erasure of different Worlds (and worldviews) by the dominant imposed One World of coloniality/modernity (Mignolo 2011; Quijano 2000, 2007). At the heart of radical interdependence is the fight for preserving and defending the many-worlds and many ways of worlding while honoring plurality of ways of being and knowing (Blaser 2014; de la Cadena & Blaser 2018; Escobar 2018, 2020). Radical interdependence emphasizes the interconnectedness with “Mother Earth” and the interdependence between human and nature, as well as all beings—past, present, and future—including spiritual beings.

Radical intraconnectedness, on the other hand, is situated in and concerned with the innate lack of awareness of unity and the feeling of separation, the veil of ignorance (*Avidya*) (O’Brien-Kop 2021), which may relate to our limited sensory potentials (Kastrup 2014, 2021) and/or psychological predisposition (Jung 1966, 2014). Obviously Yogic teachings do not use Kastrup’s and Jung’s contributions to explain the reasons for *avidya* but are my own additions. While it cannot be stressed enough that different societies and cultures face different degrees of inner struggle related to separateness, the ancient traditions and teachings suggest that the veil of ignorance about the true nature of the Self has bothered our ancestors for millennia (Gough 2013; Loy 2019a; O’Brien-Kop 2021) and can originate outside the realm of external imposition and colonization. These traditions and teachings include, Upanishads, Early Buddhism, Dao or Tao, and Yoga, some of which are over 6,000 years old.

Finally, the term interdependence suggests a biophysical dependency, or the dependency of humans on other species for survival and thus the responsibility for respect and reciprocal relations are prominent themes. The radical intraconnectedness suggests a higher order of non-separateness, an inherent oneness that transcends conscious calculations, motivations, and reasons (Gough 2013; Larson 2001; Loy 2019a, 2019b; Sharma 2008; Watts 1960; Wallace 2010).

Linking the inner/personal and the societal/collective change: fractal approach to transformations

In addition to the Eastern and indigenous (Deloria et al. 2012; Kimmerer 2013; Krawec 2022) philosophies and cosmologies, the illusion of separateness is also increasingly recognized by the emerging scientific inquiries in the metaphysical and the nature of reality. Some prominent examples include (i) analytical idealism (Kastrup 2021), which postulates that all beings are part of one universal “mind” (where the mind does not mean brain or cognition), which are deeply interconnected part-wholes of One; (ii) quantum social science (Wendt 2015; Barad 2007; O’Brien 2021), which emphasizes the entanglements and superposition and how they may influence the nature of reality, thinking and acting for social change; (iii) evolutionary biology (Heft 2001; Oliver 2020) and quantum biology (McFadden & Al-Khalili 2016), which empirically show not only human embeddedness and dependence on numerous varieties of bacteria and even viruses for breathing, digesting, and the general functioning of our bodies, but also the ways in which other

species function and coexist as part-wholes of the same system and cooperate for maintenance of Life. To link individual and the collective change and transformations, I will draw on the proposal for a quantum social change (O'Brien 2021) and the idea of fractal scaling of transformations (Adnan 2021; Jensen 2007; Sharma 2017; O'Brien et al. 2023).

Inspired by the metaphor of fractals and their scalability in mathematics and nature (e.g., spirals and beehives), social scientists have used the idea of fractals and fractal-like patterns to propose concepts like fractal sociology (Jensen 2007), fractal politics (Adnan 2021), and social fractals (Sharma 2017). Drawing on this body of research, O'Brien (2021) and O'Brien et al. (2023) propose a "fractal approach" to sustainability transformations. O'Brien places particular attention to personal transformations and how they scale out, up, and deep to enable and support deep structural or systemic transformations.

Fractal approach places attention on values, agency, and scale. It proposes that values, which in turn shape our action and behavior, produce context-specific or unique patterns that can be understood as "fractals". Yet, while context-specific, such fractals or patterns scale and replicate upwards and outwards from personal and small-scale to collective and large-scale systems and structures of society (O'Brien 2021; O'Brien et al. 2023). In other words, the ideas, values, principles, behavior, and actions at an individual or personal level form patterns or fractals that scale out, for instance, to specific sector or policy domain, triggering community, societal, and collective change that occurs without concentrated or centralized agency (Adnan 2021, cited in O'Brien et al. 2023). Such a position is inspired and justified by the evidence of non-locality, superpositions, and complementarity in quantum physics (Bohm 1952).

In the context of social sciences and the macroscopic world, it is argued that such patterns scale when and if they are based on a set of "universal values" that apply to and are shared across human and more-than-human communities, such as safety, nurturing, dignity, care, and love. Thus, central to the fractal approach to scaling transformations is the role of agency (the capacity to create change) and the qualities of that agency (i.e., specific expression or qualitative characteristics of agency that are based on a universal value system and interconnectedness with all). As O'Brien et al. (2023, 1450) put it:

The potential to consciously generate new patterns is associated with individuals and their entangled and reflective agency. To realize an equitable and sustainable world that benefits all requires qualities of agency that are grounded in oneness and a sense of responsibility for the whole.

Thus, a fractal approach to scaling relies on *entangled agency* to generate patterns that are based on *universal values* and that *scale out* as they apply to all. This prescribes key importance to individuals to act for societal change. By noting the need to shift our personal values and actions towards a universally shared set of values that reflect the intraconnected nature of all (as emphasized by the

quality of agency), this approach attempts to establish the missing link between the personal change and transformations and the collective, structural, or systemic change.

In summary, a fractal approach to scaling relies on generating a coherent universal value system, which is different from the type of universality promoted by Western liberal thought and United Nations (UN) declarations (O'Brien 2021; O'Brien et al. 2023). Here, universal values are grounded in the intraconnectedness of humans and other-than-humans. These values are emergent, dynamic, and rooted in relationality between all forms of life, rather than static and human centered. There is a recognition of the relevance of context and the linkages between individual and community focusing on both individual and collective change rather than a predefined and one-size-fits-all value approach. By embracing and acting upon universal values, we (i.e., the agency) generate “patterns” that replicate—like the repeating patterns in mathematics and nature, called fractals (e.g., beehives). This replication leads to their applications and adaptations at higher societal levels, which triggers societal or collective change and transformations.

Reflecting and responding to some of the critiques on scaling transformations and quantum social change

The fractal approach resonates with the Eastern teachings of nonduality, even if it uses different terminology to establish the ideas of the entangled and intraconnected Self. Both are based on non-dualist thinking and approaches and emphasize similar values, such as those of unity, dignity, equity, compassion, and love (termed as “universal values” in the fractal approach to transformations). Both are also deconstructing the illusion of separation, linking the inner or personal level (i.e., the ego self) and the collective level (i.e., the Self that encompasses all). Both argue for inseparability and entanglements that defy the rules of locality and objectivity of Newtonian classic physics, proposing an entangled state of the world, in line with the idea of the world as a quantum field, with unlimited potentiality and unlimited potential outcomes.

The fractal approach certainly is a refreshing proposition with relevant and demanding questions. It asks, what if we adopted new assumptions and accordingly new models of reality that go beyond causality of the Newtonian physics in social sciences, economy, and international relations (Wendt 2015; O'Brien 2021)? What if we developed new models that postulate different ways in which we perceive and experience ourselves and our roles and potentiality to generate change based on quantum physics properties (Barad 2007; O'Brien 2021; Wendt 2015)? Yet, scholars have critiqued the quantum physics application in social sciences and the fractal change to transformations (Yttredal et al. 2024).

First, the fractal approach, much as the concept of radical intraconnectedness, positions all people and nations on the same footing, with the risk of appearing as an ahistoric and apolitical approach that flattens the historical and present-day injustices. This would include flattening (neo)colonial and imperial violence, and dispossession, and its resulting inequalities in power and wealth between world

regions and nations. While those elements can be better integrated in fractal scaling and quantum change more broadly, the historic and concurrent inequalities and injustices are far from denied. The fractal approach goes beyond the polarities and focuses on peoples and individuals across the historically and concurrently different geographies and contexts, who are equally challenging the same sets of injustices in their different contexts and in different ways. It focuses on the unifying aspects and proposes one movement that challenges the same hegemony and violence it reproduces in different places. A movement that is connected, despite being “worlds apart”. Such movement building defies the logic of cause-effect and the principle of locality, relying on the quantum concepts of nonlocality, quantum entanglement and the relation between subjects and objects. It theorizes their connection and points to the potential for the birth of a different emancipatory politics in a quantum world.

Second, there is a concern about the scalability of transformations from the personal to collective to structural levels, which host various other related concerns and challenges. While we are certain in the double-sided, cause-effect relation between structure and agency (i.e., the institutional feedback) (Giddens 1984), the direct link between the two is not straightforward or linear. We know from Fraser (2013) and others that structural change is often resisted by dominant classes and interests, complicating the scale-up and out process. Patel and Moore (2017) illustrate how capitalism’s inherent power asymmetries often inhibit attempts at systemic change, canceling the effects of personal transformations on the structural. This further relates to the concern of overemphasizing personal agency at the cost of underestimating the structural and material, and the associated difficulty to materialize change in practice. The proponents of quantum social change and fractal approaches do not reject those challenges. Wendt (2015) acknowledges that while individuals have agency, this agency is often constrained by systemic structures and institutions. O’Brien et al. (2023) acknowledge the importance of institutional reforms that occur simultaneously with personal change. The argument here is very similar to the argument I am making throughout this book—we do not need to forgo other responses and efforts for transformations, including those on the institutional and political fronts, as well as direct action and social mobilization. They remain important, but as such can only be strengthened with the additional attention on potentiality, agency, quality of agency, and revisiting of our mindsets and worldviews.

The third and final critique relates to the concept of “universal values”. Post-colonial and feminist scholars have long argued that imposing “universal” values often marginalizes local, context-specific practices. For example, Spivak (1988) emphasize how so-called universal/ity tends to exclude or silence the subaltern and other marginalized voices. Feminist theory also critiques this approach, as seen in the works of Mohanty (1988), who emphasizes how “universalism” can replicate colonial power dynamics. At first sight, this argument appears to be in sharp contrast to the “universal values” proposed in fractal transformations approach (O’Brien 2021; Sharma 2017). In this context, it is important to remember, as noted earlier, that (i) the universal value system as proposed in the fractal transformations

approach is different from the static, human-centered “universal values” promoted by the UN and the Western liberal school of thought (which are the ones that are rightly criticized by postcolonial, feminist and other scholarship); and (ii) that it is not about defining a certain set of value that should now be *imposed* onto others. The universal values outlined in the fractal transformations approach include love, compassion, dignity, and equity that inherently apply to all beings (O’Brien 2021; Sharma 2017). Such values are guiding principles for us to relate with others, rather than for us to impose on others. The fractal approach applies universal values in a way that recognizes diversity and relationality and fosters a certain quality of agency that is based on the shared oneness as essential for addressing shared existential challenges, such as climate change and climate-related vulnerabilities.

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