

## Systems Change as “Response-ability”

**By: Karen O’Brien\***

\*Professor, Department of Sociology and Human Geography, University of Oslo

Corresponding author: Karen O’Brien, [karen.obrien@sosgeo.uio.no](mailto:karen.obrien@sosgeo.uio.no)

**Keywords:** agency, political agency, agential realism, participatory realism, quantum social change

### Abstract

“You Matter More Than You Think: Quantum Social Change For A Thriving World” is a new book by Prof. Karen O’Brien, which presents a radically different approach to shifting the cultures and systems that perpetuate complex global problems like climate change. This excerpt from the book explores how our agency and individual and collective capacity to engage with systems change is influenced by our intentions, assumptions, and values. While classical agency views people as separate yet interacting with others and with nature, quantum social science recognizes our inherent oneness. It focuses on our continuous “intra-actions” within one entangled system. Quantum social change draws attention to a quality of agency that contributes to sustainable systems, particularly the importance of actions based on values that apply to the whole, such as equity, dignity, and compassion. Attention to the quality of individual and collective agency is thus critical for sustainably transforming systems.

### Introduction

Agency matters. Transformations to an equitable and sustainable world where all life can thrive will not happen through wishful thinking and hope. On the contrary, agency and action are essential to realizing desired outcomes and impacts. Agency, which can be thought of as conscious actions, intervenes in systems by disrupting or transforming patterns and relationships. From a classical perspective, the agency is perceived and experienced as causal, in the sense that an agent acts upon something else, often to produce an intended result. From the perspective of quantum social science, the agency is about much more than agents and actions (Wendt 2015; Barad 2007).

As Laura Zanotti (2019, 75) describes it, agency exists as a way of life; a reiterative activity of opening or foreclosing different possibilities of materialization of matter, not as a relation push and pull aimed at imposing force on a mass. We are entangled with, constituted, and transformed by the very processes we aim to transform.

As an iterative process, agency expresses a *quality* that materializes in the classical world we perceive and experience daily. This quality of agency can be specifically associated with values that are coherent with – and supportive of – an [I/we] perspective that promotes thriving for all. This represents a subtle yet powerful shift. Through conscious practices, it can generate responses to global challenges that are ‘responsible,’ i.e., based on an awareness and respect for connections and nonlocal entanglements. In contrast to the individualistic and fragmented dualisms of our classical world, the agency in a quantum world acknowledges that [I/we] are [whole/parts] in a dynamic and relational process of being and becoming.

### **A Belief in Agency**

Both agential realism and participatory realism suggest that we are part of the phenomena that we are measuring. Yet, our sense of agency is closely tied to our beliefs about the world and our relationship with it. Beliefs are particularly relevant to gender rights, human rights, labor rights, children’s rights, animal rights, and our understanding of rights in general. They also influence ideologies, or ‘isms,’ including racism. Author Isabel Wilkerson (2020, 184) makes this point effectively in *Caste: The Origins of our Discontents*. When people have lived with assumptions long enough, passed down through the generations as incontrovertible facts, they are accepted as the truths of physics, no longer needing to be spoken. They are as true and unremarkable as water flowing through rivers or the air we breathe.

As discussed earlier, there is good reason to pay attention to our beliefs and assumptions and to reflect not only on how the broader social and cultural context influences them but also on how they influence our sense of agency.

The role of agents and their subjectivity (i.e., the so-called “interior” world of beliefs, emotions, identities, perceptions, etc.) in consciously shaping physical and social worlds has long been a source of tension between realists and idealists. Very generally, realists maintain that there is a world out there that is separate and distinct from humans. As such, they may favor radical empiricism, which holds that reality can only be attributable to that which one can observe. Idealists recognize that ideas, perceptions, and understandings shape the way we experience this world and the world we experience. Transcendental idealism maintains that reality is only accessible to people as an individual or social construction (Baert 2005). These examples highlight extreme views of what is real; however, “in reality,” there are also perspectives and metatheories that transcend realism and idealism, including critical realism and integral theory (Bhaskar 2015).

Each of these philosophical perspectives takes a particular view of the role of subjective beliefs and human agency in relation to the external world. For instance, let’s consider a pure realist perspective, where beliefs are considered a product of our knowledge about the world out there; a world that exists and can be observed. In this case, ‘we believe what we see.’ For example,

measurements of ice velocity, subglacial water pressure, and meteorological variables from the western margin of the Greenland ice sheet tell us that the ice sheet is more vulnerable than previously believed (Doyle et al. 2015). This conclusion is based on measurements and data, and the changing conditions of the Greenland ice sheet are alarming for many reasons. Now let's shift to a pure idealist perspective, where reality is seen as something that is filtered through our subjective experiences, emotions, cultural and social norms, beliefs, assumptions, and expectations. From this perspective, 'we see what we believe.' Suppose one does not believe that human activities are contributing to climate change. In that case, the observed melting of the Greenland ice sheet may be interpreted as part of normal variability or a part of gradual recovery of global temperatures from the Little Ice Age (Mooney 2015).

Although realism, naturalism, physicalism, positivism, idealism, interpretivism, and many other "isms" have created interesting debates within the philosophy of science, these perspectives matter; they have consequences for policies and practices, particularly in relation to climate change. For example, when Irene Lorenzoni and Mike Hulme (2009) showed projected future climate scenarios to people in both the United Kingdom and Italy, they found that the scenarios did not really influence people's attitudes about the future. Whether or not people believed them depended on their prior beliefs and their trust in the science of climate change. The results of their study support other research showing that pre-existing beliefs shape perceptions and actions related to climate change (Stoknes 2015; Marshall 2015). Such perceptions influence our actions – or do not take – in response to global challenges. In other words, they influence whether and how we view and express our agency within an entangled quantum system.

### **Agency is Not Neutral**

There is no such thing as a value-neutral response to climate change, and not every response will have an equally positive impact on the whole. In fact, some responses, such as geoengineering of the oceans or atmosphere, could have negative consequences for many people and species (Hamilton 2014). As such, it is crucial to make the underlying values and intentions behind climate responses transparent. Attention to underlying or hidden values is especially critical in an era of 'big data,' where algorithms influence decisions and investments. Cathy O'Neil (2016, 197) points out that "the same models that inflict damage can be used to benefit humanity and that the heart of the problem is almost always the objective." The objective she refers to relates to the intention or purpose for which the data will be used, and these are closely linked to the values that underlie them. For example, in the so-called "carbon economy," carbon trading schemes are tied to pricing algorithms designed to maximize economic efficiency rather than to reduce greenhouse gas emissions (Boyd, Boykoff, and Newell 2011).

Many actions today are expressions of agency based on exclusionary values that favor only a fraction of society. Political economies and financial instruments are concentrating wealth in a few's hands. Rather than creating global peace and prosperity, this wealth has often been used to

finance environmental destruction, ill health, and war (Sharma 2017). The hierarchies of domination and exploitation that some consider necessary to maintain the status quo tend to be tied to worldviews that retain an ‘us versus them’ and ‘humans versus nature’ approach to meaning-making.

Valuing wealth as an entitlement for the privileged often comes at the expense of the well-being of all people, species, ecosystems, and the planet. Not surprisingly, much of society is currently organized to maintain the myth of separation and difference. Paolo Freire (2000) points out that the very idea of unity is considered to be a dangerous concept for those seeking to uphold the status quo. Consequently, actions that promote unity, particularly “unity through diversity,” can be perceived or experienced as threatening by some. When people have been led to believe that a fragmented world is the only possibility and that anything else is simply an illusion or delusional, it is unsurprising that few people dare to speak out and work for so-called ‘impossible’ outcomes that are based on values inherent to [I/we] and [whole/parts].

The sharp contrast between a fragmented world characterized by structural inequality and a deteriorating environment and a diverse and thriving world can be a powerful driver of social change. In fact, concerns about climate change are motivated by a recognition that its severe, widespread, and irreversible impacts will affect all [whole/parts] of the planet. This recognition has mobilized millions of people to take action, as evidenced by the growing number of sustainability initiatives worldwide. Nevertheless, calls for radical transformations are typically met with resistance, especially by those with vested interests in current systems, including many of us. Having a strategy to shift systems and cultures is thus essential, but as leadership development practitioner Monica Sharma (personal communication) reminds us, “do not expect people to clap for you when you rattle the system.” This is why leadership is important to quantum social change.

Leaders may both enable and resist social change. Within the field of international relations, Alexander Wendt discusses the role of leaders in collapsing the state’s wave function into one among many potential outcomes. In relinquishing power to a leader with authority to decide on behalf of the collective, each person in an entangled system momentarily gives up their choice on how to respond. According to Wendt (2015), there are two important implications of transferring agency to a “leader.” Firstly, he recognizes that “the intentions and character of leaders are crucial in determining which policies are realized. Even in highly constrained situations, small differences in leaders can make big differences in what actually happens” (Wendt 2015, 270). This is evident today, where elected leaders of some of the largest countries have enacted policies that fracture society and accelerate environmental change instead of addressing the drivers. Secondly, Wendt (2015) argues that when a leader collapses a state’s potentialities into an actual choice, it has non-local consequences.” The ripple effects of one leader’s words, decisions, and policies regarding climate change and the environment often have significant impacts across time and space. When leaders fail to stand for values that apply to everyone or

show few signs of integrity, the results can be destructive and even disastrous. Leadership, character, and intentions matter much more than we think. Although newly-elected leaders can redirect the course of action, quantum social change recognizes that everyone can shift systems and cultures, no matter their position.

### **The Quality of Agency**

It is thus not only a belief in agency that matters but also the *quality* of agency that contributes to quantum social change. This quality is related to the values that we stand for, both for ourselves and others. Henry Stapp (2011, 5) emphasizes that values are ultimately tied to the beliefs about one's relationship to the rest of the universe, and "what we value depends on what we believe, and what we believe is strongly influenced by science." This may be true for Stapp, a physicist, but many people's beliefs are currently not influenced by science. Values, however, can create a strong bridge between science and culture. In a study of climate responses among Andean farmers, human geographer Morgan Scoville-Simonds (2018) found that values and beliefs were embedded within "entangled narratives" of both climatic and cultural change.

Relating to the world as a quantum system calls for actions sourced from values such as integrity or wholeness. Referring to the quantum Zeno effect, psychotherapist Ton Baggerman (2019, 47) emphasizes that awareness of our values can significantly influence how we co-create our reality. In each moment, we are both passively and actively co-creating structures and systems that support or inhibit a thriving world. Agency – or our actions – provides us with feedback, information, and knowledge that we can use to update our beliefs and change our "bets" on the future. Sustainability is no longer a normative goal but a potential that can be realized here and now. As political scientist Karin Fierke (2017, 153) writes:

"The physical basis of our conceptualizations provided by quantum physics transforms ethics from a purely normative enterprise focused on what should be – which goes against the grain of what is – to an enterprise focused on potentialities. In turn, this opens a space for agency."

Values that express integrity, or the state of being whole, undivided, and coherent, are powerful in generating social change. Expanding the definition of "value" to include more than economic interests makes it possible to embed relational qualities, such as equity and integrity, within all aspects of sustainability research, policy, and practices. For example, human geographer Milda Nordbø Rosenberg (2021) found that values of togetherness, care, dignity, and faith transformed coffee production systems in Burundi, with profound impacts on lives and livelihoods. In *Radical Transformational Leadership: Strategic Action for Change Agents*, Monica Sharma (2017) refers to values inherent to all humans (and arguably to non-humans as well) as universal values. Many of these universal values have been directly acknowledged in the 1948 *Universal Declaration of Human Rights*, which recognizes the inherent dignity and equal rights of all

members of the human family as the foundation of freedom, justice, and peace in the world (UN, 1948). Expressing agency based on these deep and innate values allows us to access a shared context and a space of entanglement that can generate non-local change.

### **Agency as Responsibility**

There is an enormous difference between talking about values and embodying them when it comes to agency. Monica Sharma (2017) writes that we create impact when we embody and express our inner space of oneness as we act from moment to moment. When the actions of individuals consistently embody universal values of equity, dignity, fairness, and compassion for all, new patterns can be created within communities, cities, nations, and global institutions. Responses grounded in values that apply to [whole/ parts] dissolve discrepancies between short- and long-term goals and between the well-being of current and future generations. Whether about the development of renewable energy resources, regenerative agriculture, a circular economy, a sharing economy, or respect for each other and all species, our actions now create nonlocal effects across space and time. The climate system is responsive to human actions, which means that with awareness, attention, and intention, every instant has the potential to contribute to sustainability, not just as a normative goal but as a way of being.

Deliberately transforming political, economic, social, technological, and cultural systems and structures requires the perception and activation of free will. Henry Stapp (2011, 153) describes free will as “the capacity of mental intent to influence physical behavior.” Alexander Wendt (2015, 174) also identifies “will” as being critical to agency: “Will is the essence of agency, a power to animate and move the body – and the mind, in the form of attention – from the essentially passive stance of Cognition to active, purposeful engagement with the world.” Whenever we willfully intend to generate sustainability, social justice, and peace, we direct both intention and attention toward this. Success often involves breaking with habitual patterns of thoughts and beliefs. For Laura Zanotti (2019, 66), this includes “the [materialist] conviction that humans can master and shape social transformations according to the design of planning rationalities.” Such rationalities, though well-intentioned, are often based on a dualistic, deterministic, and fragmented view of the world.

The ability to transform systems calls for a new way of conceptualizing our relationship to political change. Political agency, as Zanotti (2019, 75) describes it, “is rooted in ambiguity and performativity – i.e., on the making and remaking of meaning, subjects, power and political spaces in the context of intra-active relations.” Her practice-based approach to political agency draws on Karen Barad’s (2007) concept of “agential realism,” which recognizes humans as “agencies of observation” who participate within nature and thus are constitutive of reality. Barad (2007, 338) considers space, time, and matter to be dynamically generated through intra-actions; she considers *phenomena* to be the most minor units of relation that come to “matter” through ongoing and entangled intra-activity: “[p]henomena are constitutive of reality. Parts of

the world are always intra-acting with other parts of the world, and it is through the specific intra-actions that a differential sense of being—with boundaries, properties, cause, and effect—is enacted in the ongoing ebb and flow of agency.”

Barad’s interpretation emphasizes that agency is not an attribute that someone or something has but an *enactment*. Indeed, for Barad (2007, 394), the matter is “not a thing but a doing, a congealing of agency” through which phenomena are constantly being materialized and come to matter. She stresses that both human and non-human intra-actions matter in reconfiguring the world. However, in everyday life, we tend to perceive agential ‘separability,’ i.e., the sense of a difference between subjects and objects. From an agential realist perspective, such separation is always enacted within a particular context or phenomenon.

Humans, with a capacity and potential to be reflective and “conscious of consciousness,” have a particular “response-ability” to respond in ways that support [I/we] and [whole/parts]. As Barad (2007, 393) puts it, “we are always responsible to others with whom or which we are entangled.” This includes responsibility for the norms, rules, standards, regulations, institutions, incentives, and power relations that influence how society is organized and who benefits. Does “who benefits” include all groups, species, ecosystems, generations, and processes that enable life to flourish? In accepting our ‘response-ability,’ we can engage with conscious practices that shift cultures and systems to support a thriving planet.

### **In Short**

Transformations to an equitable and thriving world call for more than hope and optimism. They call for actions and interventions that challenge outdated systems by generating new ones that are more equitable, diverse, and inclusive. Karen Barad’s (2007) concept of agential realism emphasizes that we are constantly intra-acting with the universe, and our intra-actions matter because each one reconfigures the world. Through our entangled intra-actions, we matter in every moment. But it’s not just the expression of agency that matters. Instead, it is the quality of agency that we are interested in, a quality that recognizes oneness and is expressed through values inherent to the whole, such as equity, diversity, sustainability, and compassion. When these values are at the heart of the individual, collective, and political agency, it is possible to generate new, fractal-like patterns that replicate across scales in every moment.

### **Reflections**

- Regarding the quality of agency, what values are most important to you?
- Have you ever stood up for others in the face of injustice? If so, how did that feel? What are some of the obstacles that might inhibit you from taking a stand?
- What ways can [I/we] express political agency to generate an equitable and thriving world?

## References

- Baert, Patrick. 2005. *Philosophy of the Social Sciences: Towards Pragmatism*. Cambridge, UK ; Malden, MA: Polity.
- Baggerman, Ton. (2019) It's About Us: Meaning, Emotions and Mental Health in Post-Newtonian Reality. Dredggepress. Available at: <https://tonbaggerman.nl/>
- Barad, Karen. 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Second Printing edition. Durham: Duke University Press Books.
- Bhaskar, Roy, ed. 2015. *Metatheory for the 21st Century: Critical Realism and Integral Theory in Dialogue*. Ontological Explorations. New York: Routledge.
- Boyd, Emily, Maxwell Boykoff, and Peter Newell. 2011. "The 'New' Carbon Economy: What's New?" *Antipode* 43 (3): 601–11. <https://doi.org/10.1111/j.1467-8330.2011.00882.x>.
- Doyle, Samuel H., Alun Hubbard, Roderik S. W. van de Wal, Jason E. Box, Dirk van As, Kilian Scharrer, Toby W. Meierbachtol, et al. 2015. "Amplified Melt and Flow of the Greenland Ice Sheet Driven by Late-Summer Cyclonic Rainfall." *Nature Geoscience* 8 (8): 647–53. <https://doi.org/10.1038/ngeo2482>.
- Fierke, K. M. 2017. "Consciousness at the Interface: Wendt, Eastern Wisdom and the Ethics of Intra-Action." *Critical Review* 29 (2): 141–69. <https://doi.org/10.1080/08913811.2017.1319100>.
- Freire, Paulo. 2000. *Pedagogy of the Oppressed*. 30th anniversary ed. New York: Continuum.
- Hamilton, Clive. 2014. *Earthmasters: The Dawn of the Age of Climate Engineering*. First Edition edition. New Haven, Conn.: Yale University Press.
- Lorenzoni, Irene, and Mike Hulme. 2009. "Believing Is Seeing: Laypeople's Views of Future Socio-Economic and Climate Change in England and in Italy." *Public Understanding of Science* 18 (4): 383–400. <https://doi.org/10.1177/0963662508089540>.
- Marshall, George. 2015. *Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change*. Paperback edition. London Oxford New York New Delhi Sydney: Bloomsbury.
- Mooney, Chris. 2015. "This is Climate Skeptics' Latest Argument about Melting Polar Ice – And Why it's Wrong." *The Washington Post*, May 27, 2015. Available at: <https://www.washingtonpost.com/news/energy-environment/wp/2015/05/27/climate-skeptics-think-you-shouldnt-worry-aboutmelting-polar-ice-heres-why-theyre-wrong/>



O'Neil, Cathy. 2016. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. Crown/Archetype.

Rosenberg, Milda Nordbø. 2021. "What Matters? The Role of Values in Transformations toward Sustainability: A Case Study of Coffee Production in Burundi." *Sustainability Science*, June. <https://doi.org/10.1007/s11625-021-00974-3>.

Scoville-Simonds, Morgan. 2018. "Climate, the Earth, and God – Entangled Narratives of Cultural and Climatic Change in the Peruvian Andes." *World Development* 110: 345–59. <https://doi.org/10.1016/j.worlddev.2018.06.012>.

Sharma, Monica. 2017. *Radical Transformational Leadership: Strategic Action for Change Agents*. North Atlantic Books.

Stapp, Henry P. 2011. *Mindful Universe: Quantum Mechanics and the Participating Observer*. 2nd ed. Frontiers Collection. Berlin ; New York: Springer-Verlag.

Stoknes, Per Espen. 2015. *What We Think About When We Try Not To Think About Global Warming: Toward a New Psychology of Climate Action*. Chelsea Green Publishing.

Wendt, Alexander. 2015. *Quantum Mind and Social Science: Unifying Physical and Social Ontology*. Cambridge, United Kingdom ; New York: Cambridge University Press.

Wilkerson, Isabel. 2020. *Caste: The Origins of Our Discontents*. First edition. New York: Random House.

Zanotti, Laura. 2019. *Ontological Entanglements, Agency and Ethics in International Relations: Exploring the Crossroads*. London: Routledge.