If you are looking for reasons to believe that humans can find a way through the unfolding catastrophe, this is your book, your hope, your answer.

— Kathleen Dean Moore, author of *Great Tide Rising* and *Wild Comfort*

Why are we in such a predicament? The contributors to this volume trace our discontents to a kind of cultural amnesia. In our rush to progress, we have forgotten deeper sources of wisdom, and with it the calm awareness that humankind is a part of the larger community of life in the unfolding cosmic story. We've been looking for meaning, as it were, in all the wrong places. From varied perspectives, the essays here shed the bright light of remembrance and reverence.

— David Orr, author of *Hope is an Imperative*, *Down to the Wire*, and *Ecological Literacy*

This book is a celebration of the diversity of ways in which humans can relate to the world around them, and an invitation to its readers to partake in planetary coexistence. Innovative, informative, and highly accessible, this interdisciplinary anthology brings together scholars and educators across the sciences and humanities, in a collaborative effort to illuminate the different ways of being in the world and the different kinds of knowledge they entail – from the ecological knowledge of indigenous communities, to the scientific knowledge of a biologist, and the embodied knowledge communicated through storytelling.

This anthology examines the interplay between Nature and Culture in the setting of our current age of ecological crisis, stressing the importance of addressing these ecological crises occurring around the planet through multiple perspectives. These perspectives are exemplified through diverse case studies – from the political and ethical implications of thinking with forests, to the capacity of storytelling to motivate action, to the worldview of the Indigenous Okanogan community in British Columbia.

Living Earth Community is essential reading not only for researchers and students, but for anyone interested in the ways humans interact with the community of life on Earth, especially during this current period of environmental emergency.

As with all Open Book publications, this entire book is available to read for free on the publisher's website. Printed and digital editions, together with supplementary digital material, can also be found at www.openbookpublishers.com

Cover image: 'Feathers and Fins' (2014) by Nancy Earle, all rights reserved. Cover design: Anna Gatti.
Indigenous Amazonian peoples have been able to achieve results in the field of agriculture and healing that often surpass what modern humanity has been able to achieve. Given the centrality of shamanism to Indigenous Amazonian people — with its ability to access knowledge through permeable, non-rational consciousness — we are encouraged to recognize that there are other modalities of cognition, in addition to the analytic and rational mind which focus with laser precision on some well-bounded aspect of reality. Analytic reasoning leads us to believe that the boundedness of the object of study is inherent to the object, rather than a result of our focusing on it or our observing it.

It is serendipitous, therefore, that the frontiers of western science are beginning to dovetail with the Indigenous worldview of sentience and meaning in nature. The belief in a ‘reality out there’, utterly distinct from human observers, is beginning to give way to a different modality.

As Karen Barad, quantum physicist and feminist philosopher declares: ‘Meaning is not an ideality; meaning is material. And matter isn’t what exists separately from meaning’. This statement asserts that meaning and matter are not two distinct, separate realities, the former

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1 I mention only those two fields not because they are the only ones, but rather because they are the ones I am most familiar with. The architectural feats of Inca constructions are well known, and there are other such instances. See details about the pre-Columbian Amazonian anthropogenic soil known as Terra Preta do Indio in Brazil in chapter three of Robert Tindall, Frédérique Apffel-Marglin, and David Shearer, Sacred Soil: Biochar and the Regeneration of the Earth (Berkeley, CA: North Atlantic Books, 2017).
belonging to humans and their minds and the latter to an unconscious nonhuman world.\textsuperscript{2}

In her ground-breaking book *Meeting the Universe Halfway*, Barad extends Niels Bohr’s profound insight that the observed and measured object cannot be separated from the measuring and observing apparatus.\textsuperscript{3} Barad shows that what we humans observe and measure is not an independent, external, given nature, but rather is what she calls an ‘agential reality’, namely an entanglement of observer and observed, of object and subject.\textsuperscript{4} In this extension of Bohr’s work, Barad shows that nature as existing completely separately from humans’ observation of it simply ‘disappears’.\textsuperscript{5}

Barad’s work on ‘the disappearance of nature’ is particularly powerful, since she has developed her theory of ‘agential realism’ based on her reading and extension of Bohr’s understanding of the new quantum phenomena as recorded in his philosophy-physics papers.\textsuperscript{6} Agential realism incorporates Bohr’s fundamental insight that physical reality is a function of the agencies of observation, rather than pre-existing the measurements these agencies of observation produce. Or, as Michael Pollan, in reference to quantum physics, puts it, ‘matter might not exist as such in the absence of a perceiving subject’.\textsuperscript{7} This statement appears in his recent book on psychedelics. On that same page he also states the following:

One of the gifts of psychedelics is the way they reanimate the world, as if they were distributing the blessings of consciousness more widely and


\textsuperscript{5} Ibid.

\textsuperscript{6} In Meeting the Universe Halfway, Barad discusses in great detail the recently performed gedanken experiments, and offers a striking resolution of the measurement problem in quantum physics. For a fuller presentation of Barad’s work, see chapter four in my book *Subversive Spiritualities* (New York, NY: Oxford University Press, 2011).

evenly over the landscape, in the process breaking the human monopoly on subjectivity that we moderns take as a given. […] Psychedelic consciousness overturns that view, by granting us a wider, more generous lens through which we can glimpse the subject-hood — the spirit! — of everything, animal, vegetal, even mineral, all of it somehow returning our gaze. Spirits it seems are everywhere. New rays of relation appear between us and all the world’s Others.

Under expanded states of consciousness, humans are able to access knowledge otherwise beyond their reach. Shamans in the Upper Peruvian Amazon receive this knowledge directly from plants via the ‘spirit’ of these plants. When shamans are tasked with diagnosing and treating a malady, the plant shows them the cause of the malady, as well as what the treatment should be, specifying dosages and other protocols.

A similar reverence is shown in the practice of agroforestry, where one must prepare oneself to enter the forest by taking certain purges, including with psychotropic plants. As the leader or Apu of an Indigenous community with which my center collaborates stated to me:

[The forests] are our markets, our house, because there we find everything: medicines, food plants, animals, material for construction, and the forest is also a sacred space where we pray and ask permission and do rituals. One does not enter the forest just like that, one needs to take certain plants to purge and purify oneself so as to be in contact with the animals and be able to see the spirits.⁸

By taking psychedelic plants, Amazonian Indigenous people can receive knowledge from the various elements in the forest: trees, other plants, earth, fungi, animals. Indeed, they can receive knowledge from any element, be it water, air, fire, rocks, or the soil.

As did our pre-modern European ancestors, Amerindians understand the nonhuman world to be full of beings with consciousness and knowledge, and they therefore prepare themselves carefully to enter into communication with these beings. No activity is undertaken without consulting with the spirits of the place, of the forest. These communications are always respectful and tinged with an aura of sacrality, since the whole forest is a sacred place. Even a Westerner

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⁸ Apu Lisardo Sangama Salas, cited by Tindall, Apffel-Marglin, and Shearer, *Sacred Soil*, p. 112.
such as myself, trained in modern universities, can receive extremely precise and clear knowledge while taking certain healing plants during shamanic forest retreats. I know from personal experience that the knowledge can be extremely precise, to the point, and transformative.\(^9\)

We can confidently assert that similar ways of accessing information from what we moderns label ‘the environment’ is what produced the stupendous achievement of Terra Preta do Indio (Amazonian Dark Earths). Terra Preta do Indio is the Portuguese name for the anthropogenic pre-Columbian Amazonian soil re-discovered by archeologists in the last century, and declared by soil-scientists to be the most sustainable, fertile soil in existence, and one that can, in turn, sequester greenhouse gases from the atmosphere in the very substantial amount of 20%.\(^{10}\) It is simply foolish to a priori disregard these methods of intra-action in the face of the ecological crisis initiated by modern society.\(^{11}\)

The new quantum physics outlined by Barad opens a window onto the view that non-modern, non-Western peoples have been able to co-create ecosystems, soils, and medical healing — among other things — that in some ways distinctly surpass our modern Western approach of mastering or managing an insentient, mechanical nature. The view that these peoples did not achieve these things through an empirical process of trial and error, but rather through receiving information from the spirits, can now be understood as their ability to recognize that matter and meaning are always entangled. Furthermore, by labeling such sources of information ‘spirit’ or ‘deity’ or any other such non-empirical being, and by giving them names, it is acknowledged that we are of the same stuff as they, the stuff of matter and meaning. Such an understanding enables the possibility that we co-create the world, since we and it are of the same stuff.

The cosmologist Brian Swimme shares a revealing personal story about cosmological discoveries and his attempts to communicate them

\(^9\) I refer the reader to Jeremy Narby, *The Cosmic Serpent: DNA and the Origins of Knowledge* (New York, NY: Jeremy P. Tarcher/ Putnam, 1999) as another source of evidence for the exact nature of shamans’ knowledge, as well as for the impossibility of acquiring such knowledge through a process of trial and error.

\(^{10}\) See [http://css.cornell.edu/faculty/lehmann/index.html](http://css.cornell.edu/faculty/lehmann/index.html)

to others. When describing what he felt as he embarked on these new cosmological findings, people often asked Swimme if he used drugs. His initial reaction was to somewhat angrily reject this suggestion. This reaction was a response to what he perceived as the listener equating the feelings induced in him by cosmological discovery with the effects of hallucination induced by drugs. However, upon reflection, Swimme developed a rather different response. He concluded that alcohol and drugs are an intrinsic feature of consumerism, necessary for its sustainability. Consumerism is based on the basic assumption of the modern worldview, namely that the world is made of dead objects. These objects are, in Swimme’s wry words, mostly ‘unmanufactured consumer goods’. The deliriously abundant glory of the natural world, of the cosmos, is reduced to an inert mechanism. Humans are of this world, created from and with it, and this western modern paradigm cuts us off from the extraordinary expressiveness of this living, sensuous, numinous world. We are left alone among our kind, bereft of this numinous and exuberantly varied part of ourselves. The nonhuman world, the cosmos, has agency, sentience, and more.

These and other such findings among several scientists have barely percolated within academia, let alone the wider society and culture. Most of the institutions of modern society are based on the old Classical Scientific paradigm, one that gives certainty and power over the nonhuman world to these institutions, and to those humans seen as being closer to nature. It is no surprise, therefore, that these institutions do not welcome with open arms the recent discoveries made by some scientists. The reaction is what the neo-Jungian psychologist James Hillman calls ‘collective ego-defenses’ of the repressed unconscious of modernity. Modernity is still overwhelmingly in the grip of this dead world, which is, at the same time, a deadening, pathological world. Swimme suggests that ‘hoping for a consumer society without drug abuse is as pointless as hoping for a car without axle grease’. In what follows he explains why:

When humans find themselves surrounded by nothing but objects, the response is always one of loneliness [...] But isolation and alienation

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are profoundly false states of mind. We were born out of the Earth Community and its infinite creativity and delight and adventure. Our natural genetic inheritance presents us with the possibility of forming deeply bonded relationships throughout all ten million species of life as well as throughout the nonliving components of the universe. Any ultimate separation from this larger and enveloping community is impossible, and any ideology that proposes that the universe is nothing but a collection of pre-consumer items is going to be maintained only at a terrible price.  

Today, these ten million species have been severely diminished, with the largest extinction of species since the disappearance of the dinosaurs, and one caused by humans, giving our geologic era the label of the ‘Anthropocene’.

We are all in deep mourning, depressed and bereft whether we are aware of it, or of its deep lying causes or not, or whether we have repressed all of this to our collective unconscious.

For me, the imperative of our times is the need to heal ourselves, and help heal our children and our ravaged earth. In other words, there is urgent need for integral ecological healing, repairing the split between nature and culture, between mind and body, and between mind and heart. In this endeavor, we need to avoid the Charybdis of fundamentalist rationality and materialism, and the Scylla of unquestioningly accepting the received wisdom of parents, school, and community. We also need to recognize that spirituality is at the very core of such an endeavor.

So, here, at the field campus of my non-profit organization Sachamama Center for Biocultural Regeneration in the Peruvian Upper Amazon where I am writing these lines, I have tried to create a space where this split can be healed. Indigenous spirituality in the Peruvian Upper Amazon is a union between ancestral shamanism and Catholicism. It seems to me that with Pope Francis’s ecological encyclical *Laudato si’*, as well as his apology to Indigenous peoples of the Americas, the first steps have been made towards transforming the horrific history of the brutal enforcement of Catholicism here into a fecund union. With this encyclical, Catholicism has re-invested the nonhuman world with not only intrinsic value but also with numinosity.  

15 On the ‘Anthropocene’, see also ‘Anthropology as Cosmic Diplomacy: Toward an Ecological Ethics for Times of Environmental Fragmentation’ by Eduardo Kohn in this volume.
For the Indigenous peoples and mestizo curanderos (shamans of mixed Indigenous and European ancestry) here, Catholicism and ancestral Indigenous spirituality are not experienced as antagonistic nor as separated. This compatibility is in part enabled by this peoples’ oral milieu, where the history of violent Catholic conversion has lost its horror through the gradual erosion of memory.

Bibliography


