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.\(^1\) Given the centrality of shamanism with its ability to access knowledge through permeable, non-rational consciousness we are led to recognize that there are other modalities of cognition than the analytic and rational mind that 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 it rather than a result of our focusing on it or our observing it.

It’s 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.

In fact, the following statement by quantum physicist and feminist philosopher Karen Barad, “Meaning is not an ideality; meaning is material. And matter isn’t what exists separately from meaning,” \(^2\) declares that meaning and matter are not two distinct, separate realities, the former belonging to humans and their minds and the latter to an unconscious non-human world.

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. Barad shows that what we humans observe and measure is not an independent, given nature out there but rather is what she calls an “agential reality” namely an entanglement of observer and observed, of object and subject. In this extension of Bohr’s work, Barad shows that nature as existing completely separately from humans’ observation of it simply “disappears”.

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\(^1\) I mention only those two fields not because they are the only ones, but only the ones I know best. 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 F. Apffel-Marglin *Sacred Soil*, Ch. 3, 2017.

Karen 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. 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 puts it, making reference to quantum physics, “matter might not exist as such in the absence of a perceiving subject.” (2018:413) This sentence comes from his new 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 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. (Ibid:413)

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 the plants via their spirit. 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


4 In her book Meeting the Universe Halfway (Durham, NC: Duke University Press, Pantheon Books, 2007), Karen Barad discusses in great detail the recently performed gedanken experiments and offers a striking resolution of the measurement problem in quantum physics.
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. (Apu Lisardo Sangama Salas)  

By taking psychedelic plants, Amazonian indigenous people can receive knowledge from the various elements in the forest: trees, other plants, earth, fungi as well of course from animals; in fact, from any element be it water, air, fire, rocks, or the soil.

As did our pre-modern European ancestors, Amerindians hold the non-human world as full of beings having consciousness and knowledge and prepare themselves carefully to enter into communication with these. 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 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.

We can state with confidence that similar ways of accessing information from what we moderns label ‘the environment’ is what has produced the stupendous achievement that terra preta represents – and to a priori disregard these ways of intra-action in the face of modern society’s initiating an ecological crisis of global proportion is simply foolish. Terra Preta do Indio (black earth of the Indians) being the Portuguese name for the anthropogenic pre-Columbian Amazonian soil re-discovered by archeologists in the last century and declared by soil and other scientists to be the most sustainable, fertile soil ever and one that furthermore can sequester greenhouse gases from the atmosphere in the very substantial amount of 20%.

The new quantum physics opens a door to 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 they 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, to label such source of information ‘spirit’ or ‘deity’ or other such non-empirical being and give them

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6 I refer the reader to Jeremy Narby The Cosmic Serpent as another source of evidence for the exact nature of shamans’ knowledge as well as the impossibility of acquiring such knowledge through a process of trial and error.
names represents an acknowledgement that we are of the same stuff as they, the stuff of matter and meaning. It opens up 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 attempts to communicate them. When describing his feelings when entering into the new cosmological findings and orientation, people often asked him if he used drugs. His initial reaction was to somewhat angrily reject such a suggestion which he associated with his listener’s equating the feelings cosmological discoveries induced in him with tripping and all the negative consequences that came with drug addiction. However, upon reflection Swimme came to very different views. 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 world view, 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 non-human 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 non-human world and all those humans perceived as being closer to it. So, all those institutions are not going to welcome with open arms the kind of news some scientists are bringing us lately. 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 also a deadening, pathological world. Swimme thinks that “hoping for a

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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 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. (1996:33-34)

Today this ten million of species has 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, help heal our children and our ravaged earth, in other words the need for integral ecological healing, healing the split between nature and culture and between mind and body and 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 through 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 here 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 horrendous history of the brutally enforced introduction of Catholicism here has been transformed into a fecund union. With this encyclical Catholicism has re-invested the non-human world with not only intrinsic value but also with numinosity. For the indigenous and mestizo curanderos here, Catholicism and ancestral indigenous spirituality are not experienced as antagonistic nor as separated. This is certainly one of the blessings of
living in an oral milieu where this history has lost its horror or whose memory has blunted to the vanishing point.

References


