

Ecology and Spirituality: The Non-Human



Overview

- What is the non-human?
- Intelligence, Memory and Culture.
- The Hidden Life of Trees.
- Time-Scales.
- Rocks.
- Animism, The New Animism and Perspectivism.
- The Non-Human Turn.
- Conclusion.

What is the Non-Human?

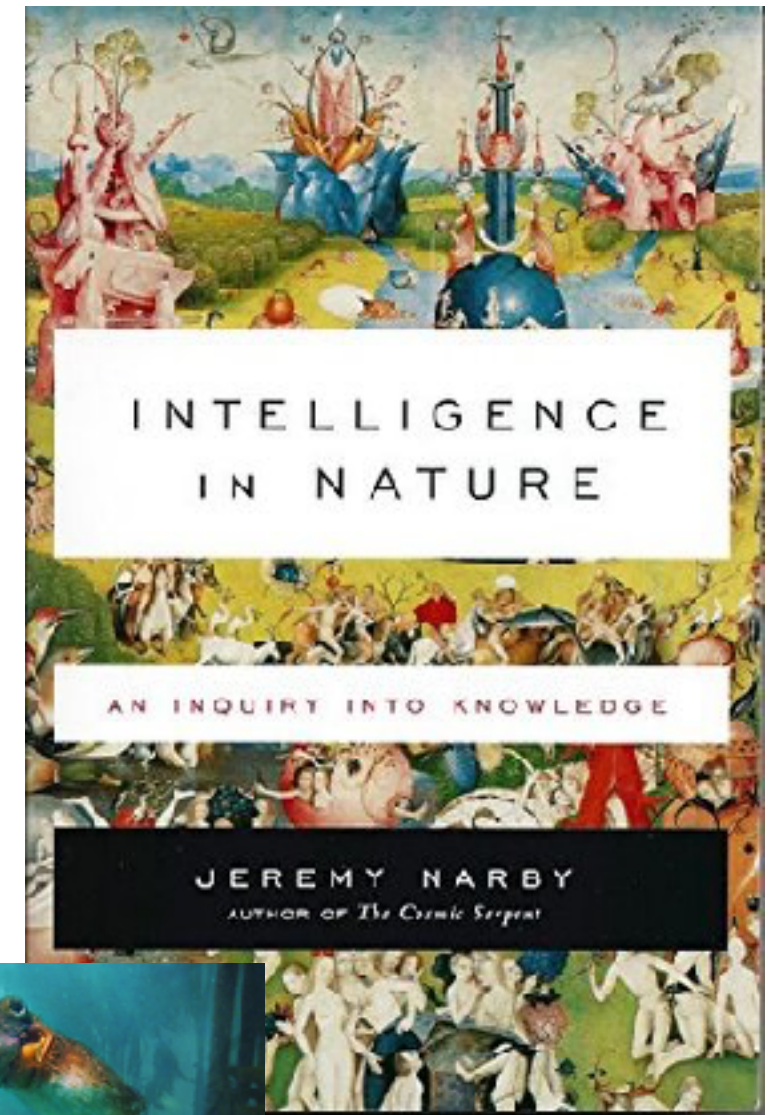
- Animals, plants, water, rocks...
- There are parts of ourselves that are 'Non-human.'
- “Human cells make up only 43% of the body's total cell count. The rest are microscopic colonists...This includes bacteria, viruses, fungi and archaea (organisms originally misclassified as bacteria). The greatest concentration of this microscopic life is in the dark murky depths of our oxygen-deprived bowels (Gallagher, 2018).
- Where do we draw the line? Is there a line?
- Sewall & Fleischner (2019), ecopsychology needs to place a greater emphasis on the non-human:

““Natural history—“a practice of intentional, focused attentiveness and receptivity to the more-than-human world, guided by honesty and accuracy”...is a pathway for digging ourselves out of a relentless hall of mirrors. It provides an accessible method for re-engagement with a richly patterned, textured, and animated world, and for becoming more ecologically informed human animals...”



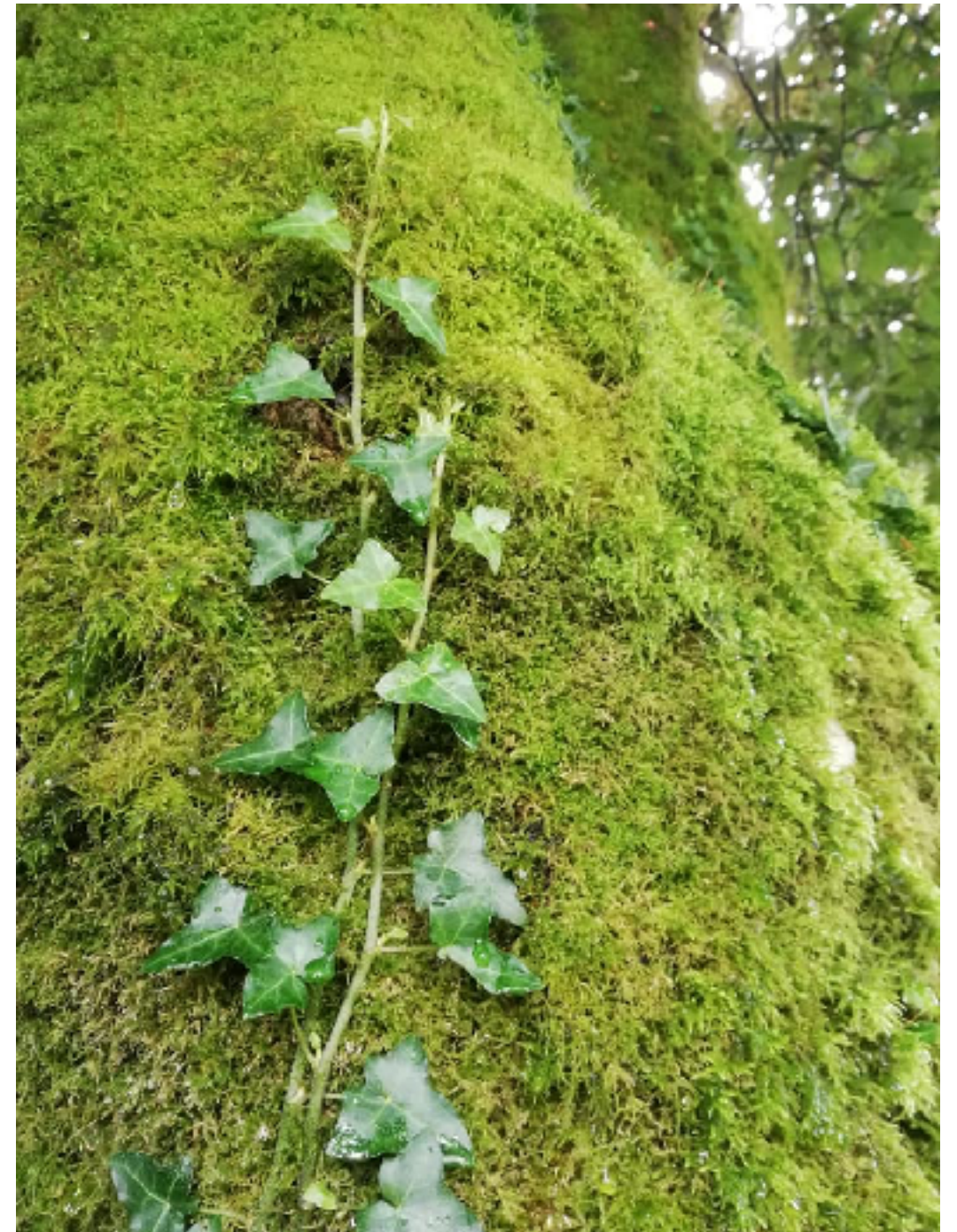
Intelligence

- Jeremy Narby points out that definitions of intelligence have tended to be anthropocentric – defined in terms of human capacities such as problem solving, tool use, symbolic thought, culture, and so on (Narby, 2006, p. 43).
- Research is increasingly demonstrating, however, that members of non-human species also possess similar attributes.
- **Tool use**, has been observed amongst a diverse range of marine animals, including ‘fish, cephalopods, mammals, crabs, urchins and possibly gastropods’ (Mann & Patterson, 2013).
- Attributes we have associated with intelligence are much more ubiquitous throughout nature than we have often wanted to admit.



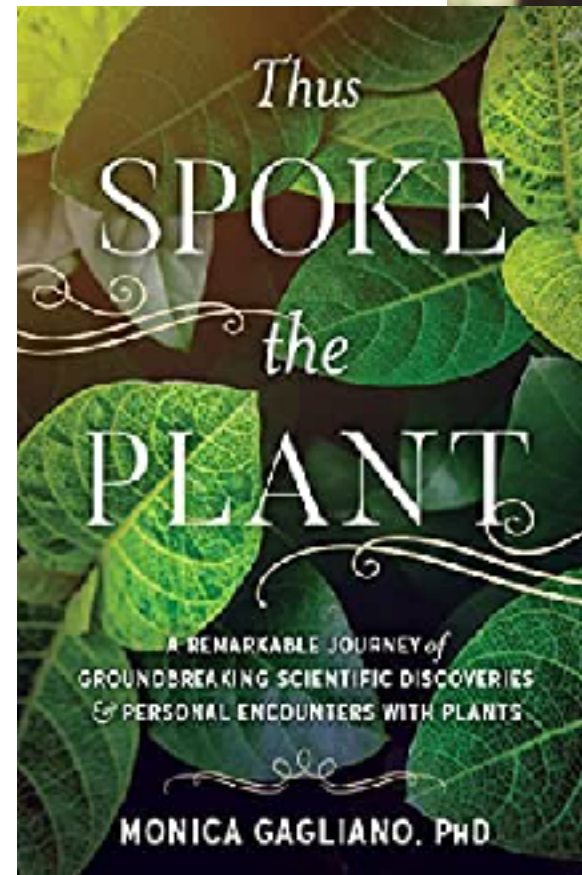
Plant Intelligence

- “The study of plant intelligence points up a very interesting aspect of research on intelligence in general: how difficult it is for us humans to understand living systems that think differently from us. Indeed, we only seem able to appreciate intelligences very similar to ours...” (Mancuso & Viola, 2015, p. 146)
- “...a compelling body of research shows that higher-order plants really are “intelligent”: able to receive signals from their environment, process the information, and devise solutions adaptive to their own survival. What’s more they manifest a kind of “swarm intelligence” that enables them to behave not as an individual but as a multitude...” (Mancuso & Viola, 2015, p. 5).
- Is this an ecological intelligence? Do plants have an ecological self?



Plant Memory

- Monica Gagliano's research has demonstrated that plants are capable of learning and remembering (Gagliano et al., 2014),
- That plants have the capacity to hear sounds (Gagliano et al., 2017).
- That they might also use sound for communication (Gagliano, 2013).
- Gagliano's research has helped to solidify the newly emerging field of 'plant neurobiology' (Brenner et al., 2006).
- *Thus Spoke the Plant* (2018) - blending of shamanistic and scientific insights.



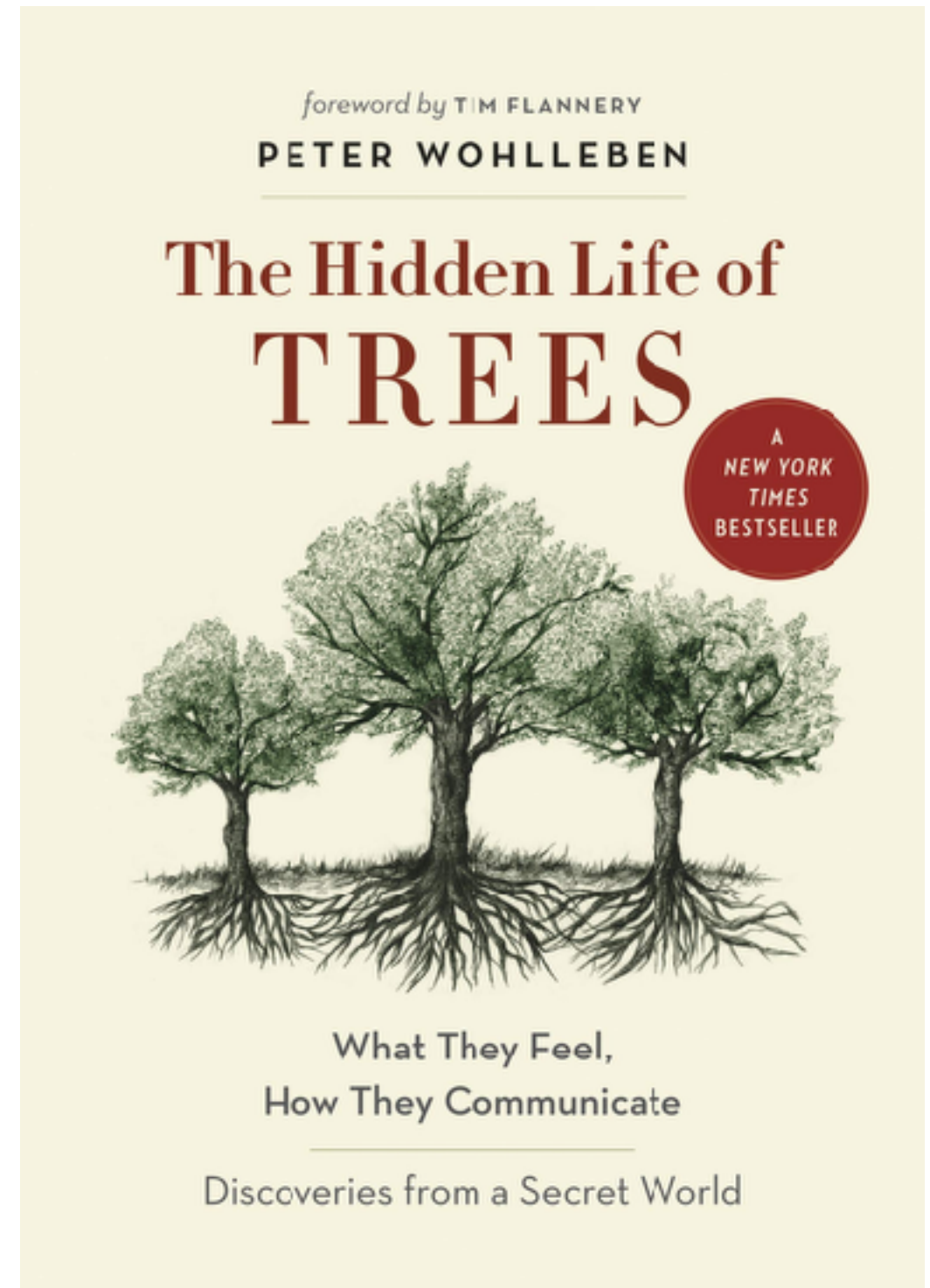
Non-Human Cultures

- The study of culture in nonhumans is a relatively recent field.
- What is culture?
- Evidence of **socially learned culture** has been found amongst ‘humans plus a handful of species of birds, one or two whales, and two species of fish’ (Laland & Hoppitt, 2003, p.151).
- “Bats have different song cultures and chatter about food, sleep, sex and other bats” (Willmer, 2020).
- “When you have pronounced cultural differences, losing populations is tragic because you’re losing these animal cultures that have been built up over many years...they may hold local solutions to specific problems or unique mating preferences not found anywhere” (Knörnschild in Willmer, 2020)



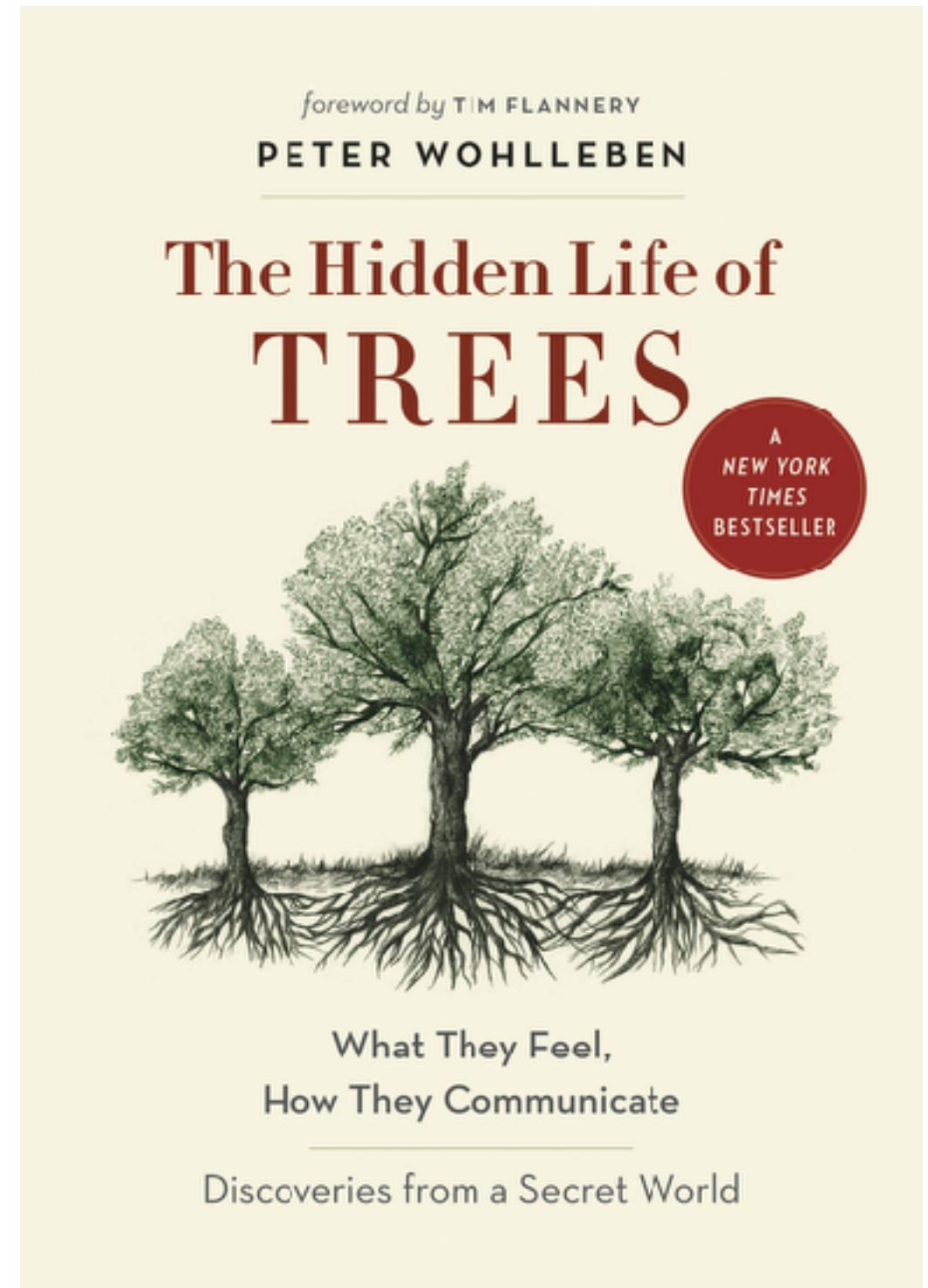
Hidden Life of Trees

- Peter Wohlleben's book *The Hidden Life of Trees* (2016) collects together evidence suggesting that trees are in fact social beings who live in communities.
- They look after their young and elderly by sharing out nutrients amongst themselves (even the stumps of long fallen trees continue to be supported with nutrients by the rest of the community).
- Trees are able to communicate with one another through complex chemical signalling and mycorrhizal networks.



Hidden Life of Trees?

- There are controversies over Peter Wohlleben's book:
- “In parts of the book, Wohlleben's description of these ecological relationships is uncontroversial. Drawing on scientific literature dealing with plant physiology and ecology, he unveils some of the remarkable adaptations of trees and their dependence on other species for nutrition and reproduction...But to convey this difference between the planted forest and the natural forest, Wohlleben slips into language that is strongly anthropomorphic and teleological. Not only are trees like us in having an emotional and social life, but they seem capable of planning ahead to promote the optimum environment to guarantee their longevity...” (Kingsland, 2018).
- Materialist science has a problem with the idea of teleology in nature.



Time-Scales

- Time-scales may be particularly important factors in making sense of the incomprehensibility of other forms of intelligence. Fungi, plants, trees, bacteria and animals (amongst other beings) all express their consciousness and intelligence over very different time-scales.
- We find it easy to relate to the intelligence of dogs and cats, for example, because they express their consciousness along time-scales similar to our own – we are more or less synchronised with them.
- We relate much less to the rapid time-scale of the fruitfly, than we do to larger mammals.
- At the other end of the spectrum there are trees.
- “Living to be a thousand years old or more, they easily outstrip the closest competition, and over the course of centuries, they increasingly get to bask in the sun whenever an old tree growing above them breathes its last...” (Wohlleben, 2017, p. 77).
- Yews wait patiently, for hundreds of years at a time, before making their move.



Are all stones alive?

- “Since stones are grammatically animate, I once asked an old man: Are *all* the stones we see about us here alive? He reflected for a long while and then replied, ‘No! But *some* are.’...”
- “The Ojibwa do not perceive stones in general as animate any more than we do. The crucial test is experience...”
- The Ojibwa language holds open the door for the possibility of interaction with animate rocks.



Chief Berens

- Photograph by Hallowell of Berens at Grandfather's Rock - "beside a shrine, with offerings, between Grand Rapids and Pikangikum, Ontario, Canada."
- "Grandfathers" (*mishoomis*) refers to both genealogical ancestors (e.g. Chief Berens' great-grandfather placed this particular rock here), but also to the rocks themselves who may be animate grandfathers.
- "My friend Chief Berens had one of these, but it no longer possessed these attributes. It had contours that suggested eyes and mouth. When Yellow Legs, Chief Berens' great-grandfather, was a leader of the Midewiwin he used to tap the stone with a new knife. It would then open its mouth, Yellow Legs would insert his fingers and take out a small leather sack with medicine in it..." (Hallowell, 1960, in Harvey, 2002, p. 25).
- Certain rocks present themselves in such a way as to invite our participation.

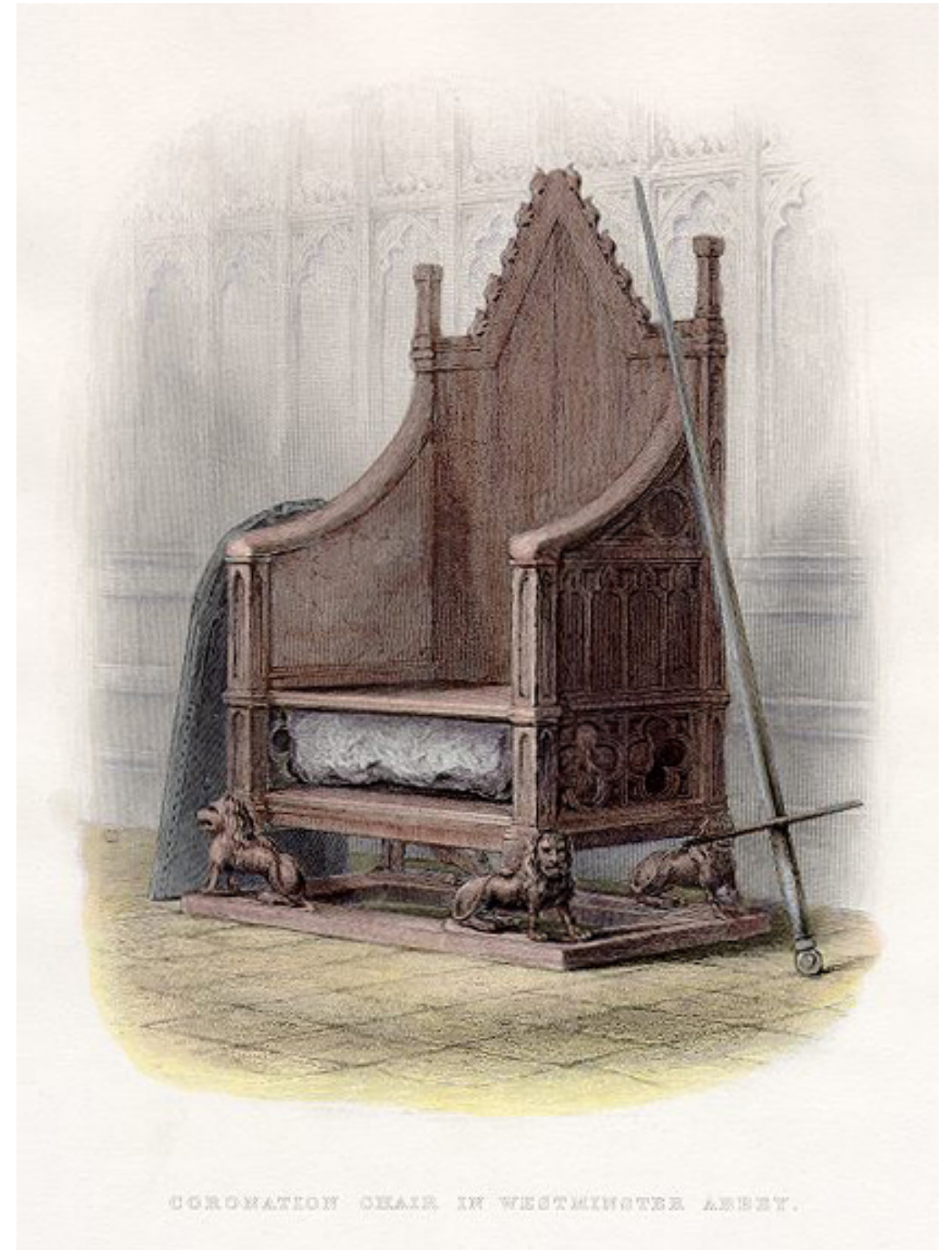


Welsh Stones

- “In the tradition concerning Welsh stones, abundant personal attributes are accorded them, such as in nature only belong to animals. They were endowed with volition and with voice; they could travel from place to place without mortal aid; they would move uneasily when disturbed by human contact; they expanded and contracted at will; they clung to people who touched them with profane or guilty purpose; they possessed divers qualities which made them valuable to their possessors, such as the power of rendering them invisible, or of filling their pockets with gold” (Sikes, 2020, p. 384).



Stone of Destiny



Shi Tou Gong



Shi Tou Gong

- “Zi Nan Gong also has an animistic deity called Shi Tou Gong - literally 'Respected Rock'. It was discovered 250 years ago after a devastating flood when they dug up a stone shaped like a human. It was assumed to possess a spirit, was robed and has been worshipped as a Money God ever since” (Graham, 2012, p. 10).





<https://www.zmescience.com/science/rock-face-museum-japan/>

Rock Worship

- Rocks are a central feature of classical Chinese garden design.
- “As an ancient mentality, rock worship remains in Chinese legends, myths and is practiced in folk culture such as feng-shui, a traditional Chinese practice used to harmonize people with their environment...”
- “In Chinese gardens rock worship mainly appears in two aspects: the adoration of rocks and use of rocks as the tool to drive evil factors away...” (Xu, 2014)



Agency of Rocks

- Hagstones - rocks with apotropaic functions.



Agency of Rocks

- Hagstones - rocks with apotropaic functions.



Agency of Rocks

- Hagstones - rocks with apotropaic functions.
- Aguaruna Jivaro - women make use of magical gardening stones (*nantag*) for protection against evil spirits. Gardens are dangerous liminal places (Brown & Van Bolt, 1980, p. 173).
- Estonian sacred sites - wounded or injured limbs are placed onto rocks for the purpose of healing (Kõivupuu, 2020).
- But rocks are not always beneficent.



Careg y Big

- According to a local legend there was once a tall, pointed, stone pillar in the village of Llanrhaeadr-ym-Mochnant known as Careg-y-Big (The Bickering Stone).
- Every Sunday the people of the village would challenge each other to climb to the top of the stone and shout out 'Captain Careg-y-Big,' if they reached the top.
- Unfortunately these competitions frequently turned violent, with skirmishes breaking out around the base of the pillar.
- It was not uncommon on a Monday morning for people to ask how many had been killed in Llanrhaeadr-ym-Mochnant on Sunday, trying to reach the coveted pinnacle of Careg-y-Big.



Careg y Big

- Noticing that there was something unusual about the stone's unpleasant influence on the villagers, the Parish Priest employed the services of a farmer from the nearby village of Penybont Llanerchemrys to get rid of the stone and its malevolent influence.
- The farmer used a team of large Oxen to remove the stone from the village, while the villagers were asleep.
- When the farmer brought the stone to his farm, the animals began attacking one another.
- Realising the malevolent influence of the stone, the farmer hauled it to a deep pool in the river Tanat and threw it in (Hancock, 1873).



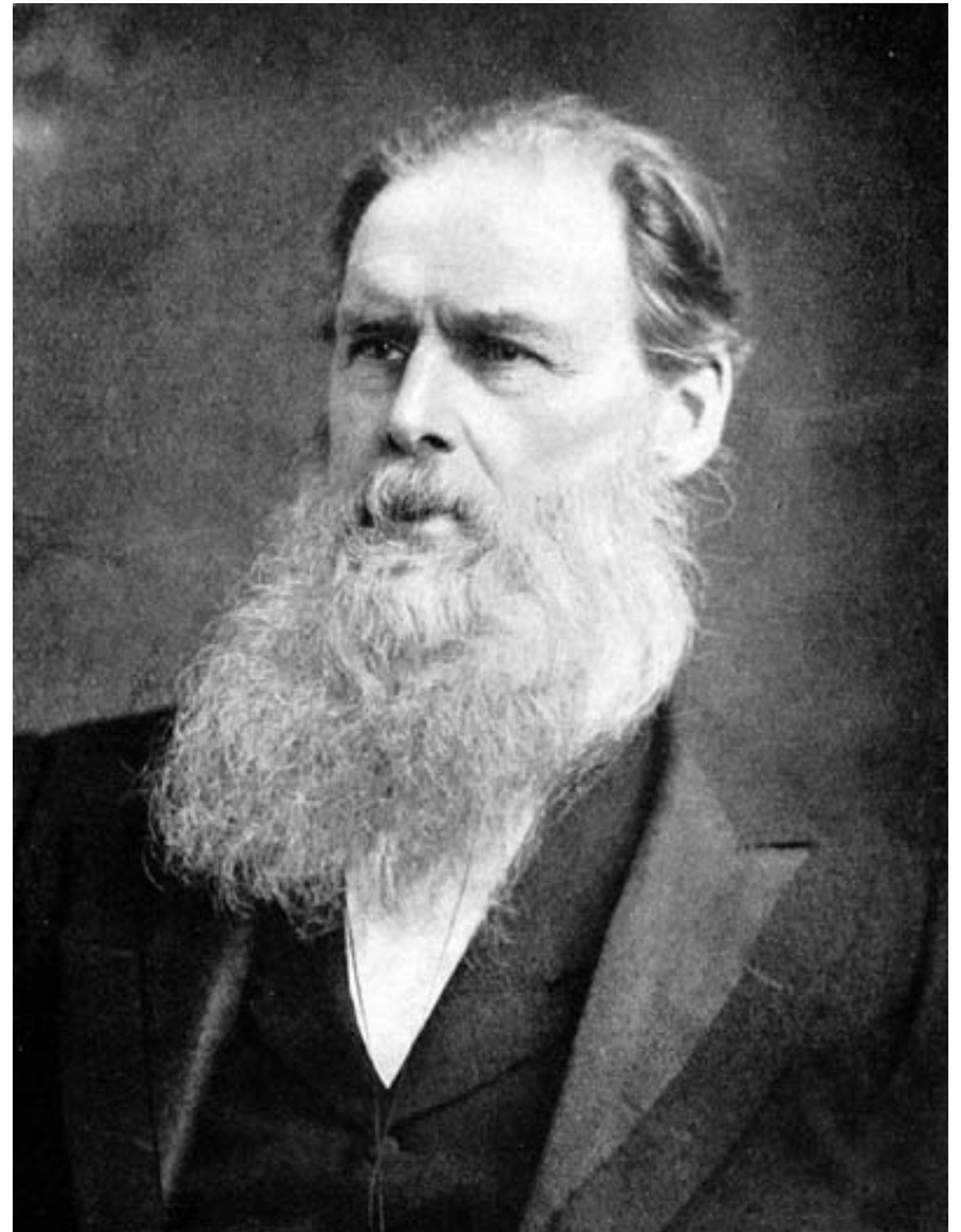
Other Things As Well...

- Michael Shapland (2021).
- “...we would be wise to take a respectful stance in our engagement with a variety of animist beliefs amongst past societies, rather than attempting to unpick the intellectual foundations of these world-views...Human beings everywhere imbue quotidian objects with personhood and agency, even in the rational, modern world and the dubious distinctions that it makes between subjects and objects, nature and society, people and things” (Shapland, 2021).
- <https://www.tandfonline.com/doi/full/10.1080/1751696X.2021.1995267?src=>



Animism

- The term animism derives from the Latin - *anima*, meaning soul.
- First popularised as a scholarly category by the anthropologist Edward Burnett Tylor (1832-1917).
- Belief in spiritual beings as the very earliest expression of religious thought.
- “When the sleeper awakens from a dream, he believes he has really somehow been away, or that other people have come to him. As it is well known by experience that men’s bodies do not go on these excursions, the natural explanation is that every man’s living self or soul is his phantom or image, which can go out of his body and see and be seen itself in dreams...” (Tylor, 1930, p. 88).
- But, Tylor’s anthropology was closely wedded to a form of social evolutionism known as **developmentalism**, that was particularly popular during the latter half of the nineteenth century (Stocking Jr, 1982, p. 97-100).



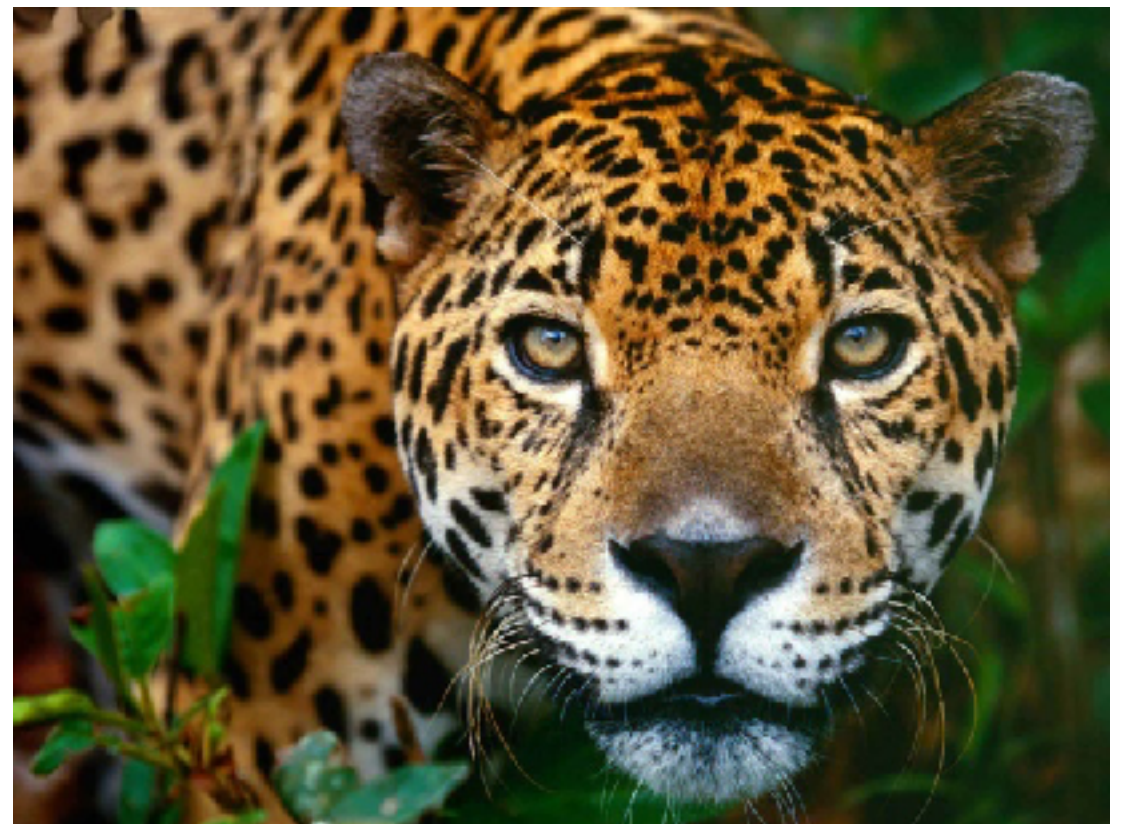
The ‘New’ Animism

- “Animists are people who recognise that the world is full of persons, only some of whom are human, and that life is always lived in relationship with others. Animism is lived out in various ways that are all about learning to act respectfully (carefully and constructively) towards and among other persons. Persons are beings, rather than objects, who are animated and social towards others (even if they are not always sociable). Animism ... is more accurately understood as being concerned with learning how to be a good person in respectful relationships with other persons...” (Harvey, 2005, p. xi).



Perspectivism

- Eduardo Viveiros de Castro (1998).
- “...the world is inhabited by different sorts of subjects or persons, human and non-human, which apprehend reality from distinct points of view...”
- “Typically...humans see humans as humans, animals as animals and spirits (if they see them) as spirits; however animals (predators) and spirits see humans as animals (as prey) to the same extent that animals (as prey) see humans as spirits or as animals (predators)...
- “By the same token animals and spirits see themselves as humans: they perceive themselves as (or become) anthropomorphic beings when they are in their own houses or villages and they experience their own habits and characteristics as a form of culture...”
- “...they see their food as human food...they see their bodily attributes as body decorations or cultural instruments, they see their social system as organised in the same way as human institutions are...” (Viveiros de Castro, 1998, in Lambek, 2006, pp. 307-308).



The Non-Human Turn

- “So, how should we think with forests? How should we allow the thoughts in and of the nonhuman world to liberate our thinking?” (Kohn, 2013, p. 21).
- “...the fact that we can make the claim that forests think is in a strange way a product of the fact that forests think...It is because thought extends beyond the human that we can think beyond the human...” (p. 22).
- Ethnographic engagement seems to “amplify”...“certain strange phenomena”...
- “By methodologically privileging amplification over, say, comparison or reduction we can create a somewhat different anthropology, one that can help us understand how we might better live in a world we share with other kinds of lives...” (Kohn, 2013, p. 22).
- Bring in some of my own ideas about ‘ontological flooding’ as a method of ‘amplifying’ certain strange phenomena (Hunter, 2015).



HOW FORESTS THINK

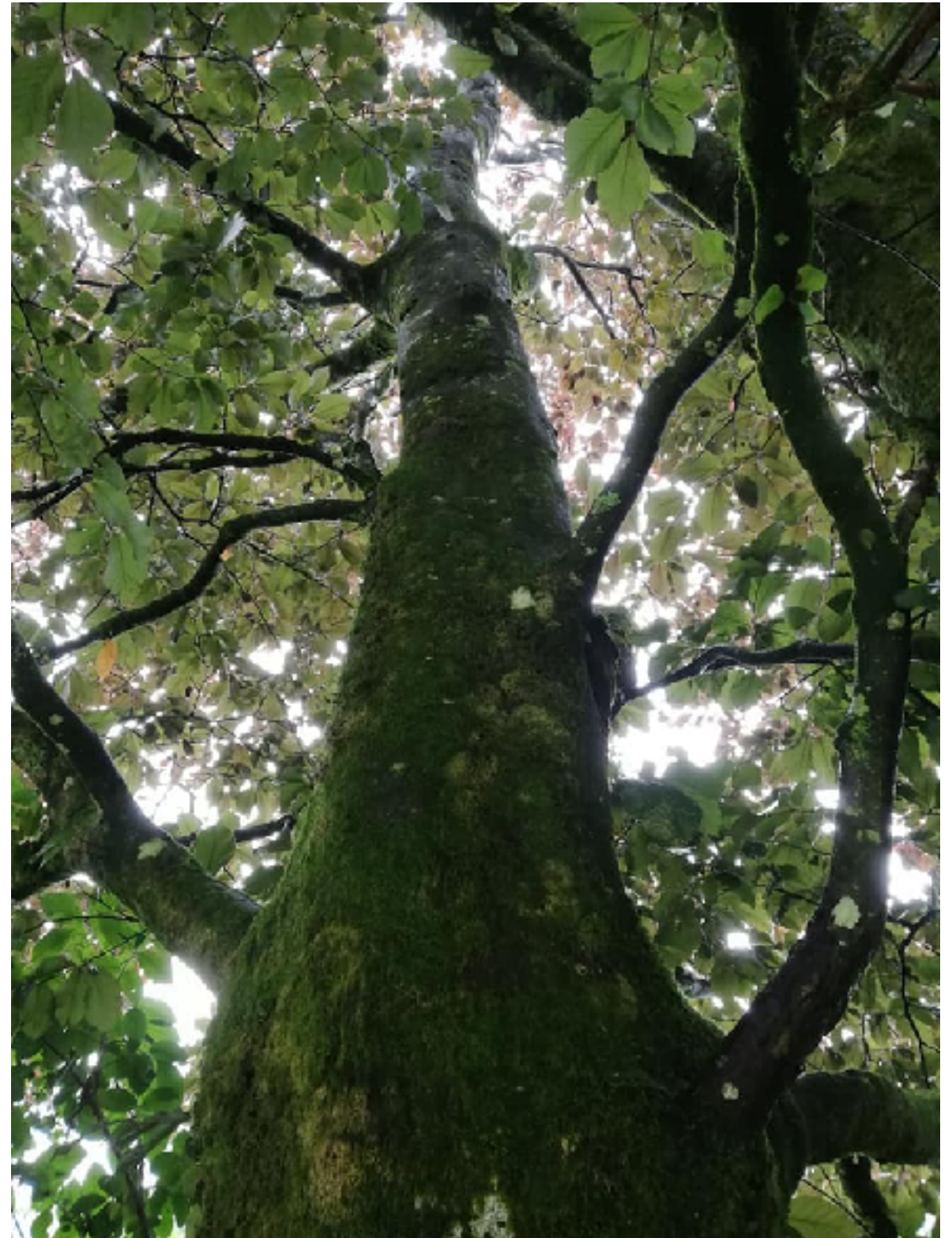
Toward an Anthropology beyond the Human

Eduardo Kohn

Conclusions

- Non-human biodiversity, psychodiversity and cultural diversity.
- Nature is made of perspectives and relationships.
- “We should ... make a distinction between alien intelligence and intelligent aliens ... That alien intelligence exists is indisputable ... and although whether intelligent aliens exist or not in some other part of the cosmos is another question, the demonstrable existence of such intelligence at least opens one’s mind to the idea of the existence of intelligent aliens” (Holroyd, 1979, p. 10).
- Freya Matthews on “Living Cosmos Panpsychism”:

<https://www.youtube.com/watch?v=H7WMrn5AsWw>



References

- Brenner, E.D., Stahlber, R., Mancuso, S., Vivanco, J., Baluska, F. & Van Volkenburgh, E. (2006). 'Plant neurobiology: an integrated view of plant signalling.' *TRENDS in Plant Science*, Vol. 11, No. 8, pp. 413-419.
- Hallowell, A.I. (1960). 'Ojibwa Ontology, Behavior and World View.' In G. Harvey (ed) (2002) *Readings in Indigenous Religions*. London: Continuum. pp. 17-50.
- Gagliano, M., Grimonprez, M., Depczynski, M. & Renton, M. (2017). 'Tuned in: plant roots use sound to locate water.' *Oecologia*, Vol. 184, No. 1, pp. 151-160.
- Gagliano, M. (2013). 'Green symphonies: a call for studies on acoustic communication in plants.' *Behavioural Ecology*, Vol. 24, No. 4, pp. 789–796.
- Gagliano, M. (2018). *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants*. Berkeley: North Atlantic Books.
- Gagliano, M., Renton, M., Depczynski, M. & Mancuso, S. (2014). 'Experience teaches plants to learn faster and forget slower in environments where it matters.' *Oecologia*, Vol. 175, No. 1, pp. 63-72.
- Gallagher, J. (2018). 'More than half of your body is not human.' *BBC News*. Available Online: <https://www.bbc.co.uk/news/health-43674270> [Accessed: 11/11/20].
- Harvey, G. (2005). *Animism: Respecting the Living World*. London: Hurst & Company.
- Holroyd, S. (1979). *Alien Intelligence*. Newton Abbot: David & Charles.
- Hunter, J. (2015). "“Between Realness and Unrealness”: Anthropology, Parapsychology and the Ontology of Non-Ordinary Realities.' *Diskus: Journal of the British Association for the Study of Religion*, Vol. 17.2, pp. 4-20.
- Kingsland, S.E. (2018). 'Facts or Fairy Tales? Peter Wohlleben and the Hidden Life of Trees.' *Bulletin of the Ecological Society of America*, Vol. 99, No. 4.
- Kohn, E. (2013). *How Forests Think: Toward an Anthropology Beyond the Human*. Berkeley: University of California Press.
- Willmer, G. (2020). 'Bats have different song cultures and chatter about food, sleep, sex and other bats.' Available Online: https://horizon.scienceblog.com/1492/bats-have-different-song-cultures-and-chatter-about-food-sleep-sex-and-other-bats/?fbclid=IwAR3LRCZiK88y7C1poeTM_11QjV1dm1zVqaiyzZ1qY4xeYmcxDQ_Y9CBNEvo [Accessed 20/11/2020].
- Mancuso, S. & Viola, A. (2015). *Brilliant Green: The Surprising History and Science of Plant Intelligence*. London: Island Press.
- Sewall, L. & Fleischner, T.L. (2019). 'Why Ecopsychology Needs Natural History.' *Ecopsychology*, Vol. 11, No. 2, pp. 78-80.
- Tylor, E. B. (1930). *Anthropology: An Introduction to the Study of Man and Civilization*. London: C. A. Watts & Co. Ltd.
- Viveiros de Castro, E. (1998). 'Cosmological Deixis and Amerindian Perspectivism.' In M. Lambek (ed.) (2002). *A Reader in the Anthropology of Religion*. Oxford: Blackwell, pp. 306-326.
- Wohlleben, P. (2016). *The Hidden Life of Trees: What they Feel, How they Communicate—Discoveries from a Secret World*.