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Elemental Powers: Water Beings, Nature Worship, and Long-term Trajectories in Human-environmental Relations

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ABSTRACT Human societies have developed unique trajectories of engagement with their environments over time. Some of these long-term relationships contain more potential for sustainability than others. Early human societies worshipped 'nature beings', including water serpent deities who manifested the elemental and generative powers of water. Such beliefs supported collaborative and reciprocal efforts to co-exist respectfully with the non-human world: a form of 'conviviality' that maintained highly sustainable lifeways. However, as other societies enlarged, became more hierarchical, and developed more instrumental technologies, they humanised their gods to worship their own rather than non-human powers. This supported ideas about 'dominion' over nature that, in prioritising human needs and interests and externalising their costs, have led directly to the current environmental crisis.

Focusing on images and objects representing water deities, and exploring how the role and form of these changed to reflect key transitions in social, political and technical arrangements, this article asks what we can learn from earlier societies, and from contemporary indigenous communities that retain traditional beliefs and values. Is there a creative scope to incorporate the tenets of more sustainable modes of environmental engagement into contemporary debates about 'rights for nature'? Can alternate worldviews assist societies in developing less anthropocentric ways of thinking about and engaging with the non-human world? In the face of contemporary realities, how can we re-establish more convivial human-environmental relations?

Keywords: Water, Nature worship, Human-non-human relations, Sustainability

Introduction

This article brings together two areas of interest that have been integral to my ethnographic research for many years. The first is concerned with human-non-human relationships. Taking as a starting point an understanding that human and non-human beings and ecosystems all have agency in the co-creation of shared lifeworlds, why and how do human societies develop such different trajectories of engagement with the non-human world over time? Some of these long-term relationships clearly contain more potential for sustainability than others: what can we learn from the differences between societies that exploit the non-human domain mercilessly, and those who seek to care for its well-being along with their own? The other topic is more specific. It concerns the water serpent beings through which, over time, societies have expressed their particular beliefs and values in relation to water, and to the non-human domain. These provide an invaluable comparative focus for the questions that this article seeks to address.

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Contemporary human relationships with water are in a state of crisis: freshwater ecosystems worldwide are failing because of massive overuse, particularly for irrigation. Anthropogenically-caused climate change has created unmanageably volatile water flows and there are dire predictions that there will be, in the very near future, critical shortfalls in water supply (World Bank 2020). Governments, the UN, the World Bank, conservation organisations and other NGOs, stress the urgency of a global conversation about the value of water, and the need for all societies to achieve more sustainable ways of engaging with this vital element. Therefore, the aim of my research, alongside others in the field, is to make use of the cross-cultural ethnographic comparison that is central to anthropology to draw out some of the key characteristics of sustainable human-environmental relations and consider how these might be articulated imaginatively to help contemporary societies find new ways of thinking about and engaging with water.

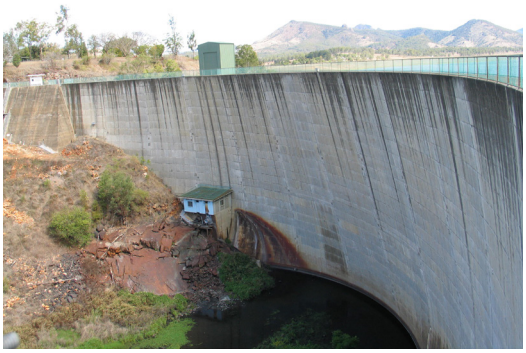

Fig. 1. Moogerah Dam, Queensland, Australia. Photo: Veronica Strang.

This project has evolved into a major comparative study of societies' long-term trajectories of engagement with the non-human world (Strang in press b). It draws on my own research in Australia, New Zealand and the UK, and on a wide range of other ethnographic studies describing diverse cosmological beliefs and practices in relation to water (e.g. Andaya and Ishii 1999; Drewal 2008; Lansing 1991; Lucero 2018; Metge 1967; Reichel-Dolmatoff 1976). However, examining such long-term trajectories requires an interdisciplinary approach, and I have therefore made extensive use of historical, archaeological, and theological literature describing how societies' beliefs, values, and practices have developed over time (e.g. Bowring 2005; Breasted 2010 [1912]).

As this implies, the research is underpinned by Durkheimian theories recognising that cosmological beliefs are 'made in the image' of societies' political, social, and economic arrangements, and are therefore reflective of important changes in these (Durkheim 1961). This includes the power relationships within and between human groups, as well as those that pertain between human communities and non-human beings and ecosystems. A Durkheimian approach therefore helps us to explore how different societies balance human and non-human rights and interests, and the extent to which human needs and interests are prioritised, with the costs of meeting human desires externalised to non-human species and environments. It also suggests that sustainable practices will only be prioritised if there are recursive changes both in societies' worldviews and values, and in the political and economic arrangements that these reflect. The paper is therefore in accord with emerging literature that asserts the need to promote paradigmatic changes in thinking to lead radical changes in practice (Brightman and Lewis 2017; Kopnina and Washington 2020).

The analysis is loosely chronological, in that it considers a cross-section of examples: hunter-gatherers; small-scale agriculturalists; early irrigation societies; modernising, colonising, and contemporary industrial societies. However, this does not assume a simple linear development of humankind from one mode of economic and social production

to another, or any kind of essentialism about culturally diverse modes of environmental engagement. The notion of 'chronology' is used merely to examine the relationship between changes in modes of environmental engagement, and key changes in worldviews. This allows us to consider what happens to environmental beliefs and values when societies shift away from low-key modes of production to more intensive technical practices, and – simultaneously – from worshipping nature and nature beings (such as the powerful serpent beings representing water), towards religions focused on increasingly humanised deities and secular worldviews dominated by science.

Fig. 2. Ancient rock art serpents, Chilligoe, North Queensland, Australia. Photo: Veronica Strang.

There are some methodological challenges. A long view necessarily takes us into pre-historical periods in which it is only possible to infer people's cosmological beliefs, but there is a wealth of archaeological evidence that supports such inferences, to which comparative studies lend further verisimilitude. While also demonstrating many cultural adaptations over time (*see* Harrison and Morphy 1998), the archaeological records and oral histories of conservative societies, such as Aboriginal groups in Australia, also show strong continuities. These are expressed for example, in flood stories that appear to reflect sea level changes 10,000 years ago, and ancient rock art relating to contemporary beliefs in Rainbow Serpents and other water beings. Similar links between pre-historic imagery, archaeological evidence and contemporary ideas are discernible in many South, Central, and Northern American indigenous communities, as well as those in Africa and Asia. Many such societies – despite the traumatic disruptions of colonial invasion – have fought to protect and uphold their foundational beliefs and values and continue to do so.

It is therefore evident that, along with the multiple cultural and environmental changes that have undoubtedly occurred in all of these contexts, there are some persistent cosmological continuities. Thus place-based 'traditional' societies offer a useful analytic contrast to those which have embraced major changes in their lifeways, and which have followed less sustainable trajectories of development.

Nature Worship

There was a time, historically, when all human societies worshipped what Western societies now call 'nature'. However, this dualistic distinction between nature and culture came much later. It would appear from the archaeological record (e.g. Chippendale and Taçon 1998), and from ethnographies of contemporary place-based societies, that rather than separating human and non-human domains, early human societies saw themselves as being located within a single holistically conceptualised living world. One might say, therefore, that their worldviews prefigured the concepts of relationality articulated in current writings on materiality, which similarly seek to present a holistic view of the flows and inter-connections between human and non-human beings and things (Coole and Frost 2010; Knappett and Malafouris 2008; Latour 2005).

Such worldviews also exemplify contemporary notions of 'extended mind' (Clark

2010). 'Nature beings' – totemic ancestral beings in multiple human and non-human forms – emerged and formed the material world, and then remained as powerful presences in it, creating sentient cultural landscapes from which they could watch over, guide, and work collaboratively with humankind. This positioned the non-human domain as an agentive and reciprocal partner in shared human-non-human lifeways.

It is not my intention to suggest that hunter-gatherer or early agricultural societies enjoyed wholly harmonious relationships with the non-human domain. Such a romantic view has been thoroughly critiqued by authors such as Roy Ellen (1985) and Shepard Krech (1999). But it is also important not to 'throw the baby out with the bathwater'. Human societies have diverse and complex relationships with the non-human domain, and all contain tensions as well as mutually beneficial engagements. But there is compelling evidence demonstrating that by maintaining conservative values, many traditional societies co-produced, in collaboration with other species and environments, highly sustainable lifeways that persisted over long periods without disrupting ecosystems to the extent that they could not reproduce and flourish.

Central to these kinds of relationships with the non-human world is their relative egalitarianism in the perceived status of human and non-human beings. Mary Douglas' cultural theory described societies' socio-political arrangements in terms of different 'rationalities' about individual and collective powers, and their propensities in terms of 'hierarchy' versus 'egalitarianism' (1992). Although she accepted the nature-culture dualism prevailing at the time, each of the four dominant rationalities that she described came with different visions of 'nature'.

In contemporary debates about human-non-human relations it remains useful to consider an implicit continuum between 'egalitarian' relationships that valorise notions of partnership and reciprocity and more 'hierarchical' worldviews in which relations between human and non-human beings are characterised by greater levels of inequality. Whether such values are applied consistently across inter-human and human-non-human relations is a different question, but there would appear to be some logical consistency in societal values. 'Flat' socio-political arrangements that promote collective human powers seem to run with undifferentiated worldviews (i.e., those that do not divide nature and culture) and similarly egalitarian engagements with the non-human domain.

Thus, Aboriginal Australian worldviews contain no nature-culture divide, uphold egalitarian and collective political inter-human relationships (gerontocractic leadership by male and female elders), and promote a collaborative and reciprocal view of engagement with the non-human domain (Myers 1991; Bird Rose 1992). This engagement is further strengthened by the inalienable relationship with homelands that is typical among 'place-based' communities. Critically, it would appear that these kinds of socio-political arrangements are more conducive to maintaining a high level of concern for the collective well-being of human and non-human beings and ecosystems and are therefore more likely to prioritise sustainable practices.

Water Beings

This kind of 'big picture' analysis requires an analytic focus that provides coherence and comparability. An ideal narrative device is provided by the objects and images depicting water beings – the array of serpents, dragons and other water deities – found in museums

and in many traditional cultural contexts worldwide.

For many millennia, in multiple cultural and historical contexts, 'egalitarian' societies expressed their relationships with water, and their deep respect for it, by worshipping or valorising serpentine deities believed to manifest its elemental powers and its essential generative capacities. Because water is vital to the health and well-being of all biological organisms, and invariably central to all human activities, these beings are immensely useful distillations of particular cultural and historical worldviews and relations with the non-human domain. The role of water beings, their perceived powers, how they are regarded, how they are treated, and what happens to them over time, can therefore tell us a great deal about important developments in societies' trajectories of engagement with the non-human domain.

In effect, they are key indicators of change and, because they are historically ubiquitous, they provide an ideal focus for a comparative study of the factors that lead societies to shift from sustainable to exploitative lifeways and which – I hope – may potentially lead them in the other direction. In addition, because serpents and dragons have an abiding fascination, they are the perfect narrative device with which to entice wider public audiences into engaging with ideas about the kinds of social and cultural changes that are needed to enable more sustainable practices.

Water serpent deities elucidate the beliefs and values that form societies' engagements with water not just in the past, but in the present. A central part of this research is an exploration of how contemporary indigenous and activist communities are making use of traditional images and objects representing water beings, and the meanings that they hold, to critique the exploitative environmental practices imposed on their homelands by colonial societies. Thus, in Australia, New Zealand, the Americas, and Africa, rainbow serpents, *taniwha*, and other water serpent beings are astutely employed in the political arena to challenge reductive visions of water as H_2O, or which see the non-human world as merely a source of 'ecosystem services'. In this vital new role, water beings provide symbolic support for the alternate beliefs and values that locate humankind in a more egalitarian and reciprocal position in relation to the non-human world, and which might therefore encourage more sustainable modes of engagement.

Fig. 3. Chinese dragon connecting waves and clouds. Ceramic tile screen in Behai Park, Beijing. Photo: Veronica Strang.

So let us take a closer look at these beings. The category of 'water beings' encompasses any serpentine beings or deities that personify or manifest the powers of water and describe the hydrological cycle. This includes those rising up from the depths of oceans, lakes, waterholes, springs and aquifers – i.e. from underground or undersea domains; those inhabiting rivers and streams, and those – such as winged dragons and plumed serpent beings – that represent the airborne aspects of water, and its capacities to flow in hydrological cycles between earth and sky.

Water beings embody water's material characteristics. They are fluid and serpentine, wriggling across landscapes, and disappearing into the earth. They often shine and glitter like water. Sometimes, signalling water's relationships with air, wind, and weather, they have feathers or wings, and spit out lightning and fire. And because they are formed in part by the consistent material properties and behaviours of water and by its physical capacities to irrigate, connect, permeate, and transform, they carry powerful undercurrents of shared meanings that persist across time and space, as well as culturally and historically specific meanings (Strang 2004; 2005). This universality, which is compatible with rather than mutually exclusive to cultural specificity, makes them an ideal subject for comparative analysis. Water beings therefore provide an ideal way to examine societies' different trajectories of engagement with the non-human domain.

Their historical and geographical ubiquity means that almost every major museum celebrating art and culture has multiple objects and images representing water beings. For example, the British Museum contains Javanese shadow puppets; Aztec *xuicoatls*; Chinese and Japanese dragons; multi-headed Eastern cobras; Greek and Roman hydras; Indian *nāgas*; Viking dragon boat prows; Kwakiutl lightning snakes; African Mami Wata images; Australian rainbow serpents; Egyptian uraeus; and Māori *taniwha*; as well as representations of the serpent beings or 'dragons' that – in societies seeking dominion over Nature – were recast as demonic adversaries for culture heroes such as St George and St Michael, Beowulf, Bahram Gur, Vishnu, and others (Day 1985, Rauer 2000, Riches 2000, Strang in press b). All of these objects and images have a story to tell and, by exploring the role of water beings in different social and cultural contexts and tracing the changes in how these are represented and valorised or demonised over time, it is possible to discern key shifts in human-non-human relationships.

Water beings provide insights into the imaginative aquifers that underlie societies' most fundamental understandings. For example, while the objects and images representing water beings are historically and culturally diverse, they share persistent commonalities in form, comprising a polysemic 'family' of objects and images whose iconography offers important insights into human cognition. They demonstrate how people's phenomenological engagements with the world involves thinking 'with' the materials of it, in the same way that – as Levi-Strauss suggested – they find animals 'good to think' (1964). The world provides 'metaphors to live by' (Lakoff and Johnson 2003). Just as rock or concrete offers visions of stability (Harvey and Knox 2010), and trees support ideas about growth (Rival 1998), the fluid properties and behaviours of water enable us to formulate concepts of cyclical movements and flows, and to imagine changes and transformations through different states of being over time (Strang 2004). As the substance essential to all organic life, water is also visibly animated, and perceptually 'alive' (Atran 1990), and therefore lends itself to notions of personhood (Bird-David 1999), and personification in the form of water beings.

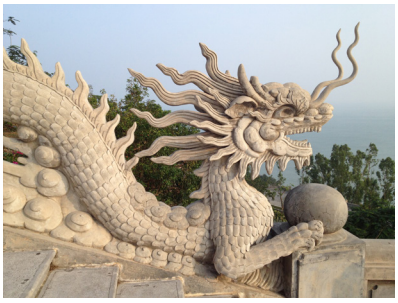

Fig. 4. Water being flowing down staircase at Da Nang Chua Linh Ung pagoda, Vietnam. Photo: Veronica Strang.

As manifestations of water's life-giving powers, water beings have a central role in many stories of cosmogenesis, in which the material world and all life forms emerge from primal seas, sometimes spewed from a vast serpent, or composed of its body. Such visions

of parthenogenesis highlight the role of water serpent beings as ancestral beings that, as we will see, segues readily into notions of rivers as 'living ancestors' and therefore persons. This vision of the creation of a stable material world out of fluid chaos also serves as a metaphor for the emergence of human consciousness from the seas of unconscious being. Bringing light out of darkness, the 'wise serpent' appears as a recurring trope in many cosmological narratives of enlightenment (Henderson and Oakes 1963).

More often than not, serpentine primeval ancestors are androgynous, or appear as twins, representing both genders. In ancient Egypt, for example, the great serpent, rising up out of watery chaos to bring light and form into the world, gave rise to millennia of serpent worship (Clark 1959; Cooper 2005). In the Mayan cosmos, Itzam Na, the 'Celestial Iguana', emerges from primal seas to carry the world upon its back (Deimel and Ruhnau 2000). The Aztecs describe two giant serpents Tezcatlipoca and Quetzalcoatl, creating the world out of the body of the sea monster Tlaltecuhtli, throwing half of her up to become the sky and leaving the other half floating on the sea, to become the earth (Ferguson 2000). In Māori stories of cosmogenesis, in which the world emerges from fluid chaos (*Te Kore*), a primal ancestor, Maui, pulls a great fish out of the sea, which becomes New Zealand's North Island, and a range of 'nature deities' form the world and its living kinds (Barlow 1991).

Representing the powers of water at a physical level, and the necessity of water to all living kinds, water serpent beings are hybrid creatures, literally incorporating the local life-forms that they generate. In Africa, they combine the patterns and form of pythons with the horns of antelopes. In Central America, plumed serpents wear the green feathers of the sacred quetzal, and water lily serpents link the twining forms of aquatic plant life with the sacred jaguar. In South America, giant anacondas magnify the snakes in the rivers of Amazonia. North America provides the horned serpents of the Pueblos, and – further north – the wolf and bear-headed water beings of the West Coast. In Australia, rainbow serpents bear the patterns of colourful snakes, and they share features with aquatic species: fish scales, or the patterned skin, claws, and heads of crocodiles.

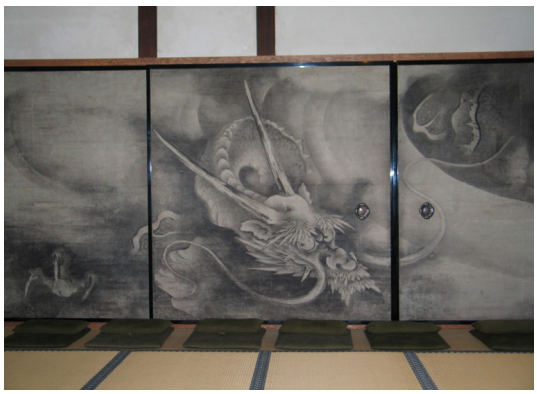

Fig. 5. Dragon emerging from cloud. Painted screen in 12th century temple, Kyoto. Photo: Veronica Strang.

Expressing cultural and historical understandings of how water moves through the world, water beings ascend and descend from celestial realms, surging up out of the land as springs; arching over the earth as rainbows; and drifting down from the clouds as rain.

In the image above, the Japanese cloud dragon manifesting out of the mist or 'becoming', as Deleuze and Guattari would say (2004), beautifully expresses the idea that such beings are not just personifications of the power of water – they are composed of water. They are the deities responsible for bringing life-giving rain, and as well as maintaining orderly flows of events in the material world, they act as lawmakers, upholding social mores. They must be propitiated, so that they provide water when and how it is needed, rather than bringing punitive floods or droughts. They comprise the fluid connections between all living kinds. They bring all life into the world and, more often than not, their movements

entail a 'hydro-theological cycle' (Tuan 1968), in which they carry the human spirit between invisible underworlds, visible material worlds, and celestial domains, and into and out of material 'becoming'.

An Australian Hydro-theological Cycle

An ethnographic example is provided by the Rainbow Serpent in Australia. This is the primary ancestral being from which all life emerged during the Dreamtime, and which continues to generate living kinds and resources. A key part of its role is to carry the human spirit from within its body/held in the land, upwards from water places into incarnated form: thus, the spirit 'jumps up' to enliven the foetus in a woman's womb (Strang 2002; see also Hiatt 1975). This process of becoming a person, or 'becoming visible/material' (Morton 1967), locates each individual in a network of kin, and gives them a home place in clan land, with concomitant rights to local resources.

At the end of life, a person's spirit must be ritually sung back to its home and – in a process of un-becoming – returns to the pool of ancestral power held in the land. Simultaneously, the Rainbow Serpent is the generative source of what indigenous Australians call the Law. This is the entirety of their traditional knowledge which, like water, flows intergenerationally through songs, stories, and ritual practices. The secret sacred aspects of this knowledge are passed on to people at appropriate stages of their lives, and this conferment of power underpins the authority of Aboriginal societies' gerontocratic leadership and ensures respect for their elders.

A central theme within the Law is how to live with the non-human world: how to harvest resources sustainably or, as the elders put it, how to 'care for country', both ritually and practically, so that everything remains intact for future generations. The Law held in the Rainbow Serpent, and transmitted from one generation to the next, contains homilies about not overusing resources: for example, the imperative to replace the main root in harvesting yams; leaving sufficient 'spear tree' to allow regrowth; and respecting restrictions on hunting and gathering at sacred sites. And, as noted above, the long-term persistence of Aboriginal lifeways over many millennia suggests that these values, encouraging low levels of resource use and population control, maintained high levels of social and ecological sustainability.

Serpentine Imaginaries

It will be apparent that water serpent beings are doing a lot of imaginative work. They are the origin of life and consciousness, and of the generative ancestral power that continues to produce all living kinds. They provide a way of conceptualising hydrological cycles and annual patterns of rainfall so that societies can work with these, and the material environment, to maintain social and economic stability. They enable people to envision the movement of human (and other) spiritual life through material and non-material forms of existence. They are the enlightening embodiment of the Law: of all knowledge, of people's rights to land and resources, and of all of the rules and practices that maintain social order. They are the connective force in a sentient environment that directs and is responsive to human action. They mediate sustainable engagements with water and the environment, and they are powerful and authoritative, ensuring deep respect for water and its agentive capacities.

Therefore, traditional water serpent beings such as the Australian Rainbow Serpent,

encapsulate a radically alternative model of human-non-human relations. They present a vision of more egalitarian relationships, based on mutually beneficial reciprocal partnerships between humans and the non-human world, in which the humans care for the material environment, and all living kinds are rewarded with long-term social and ecological stability. Humankind is not above or separate from nature, but held within a living, sentient world, working with, rather than merely acting upon it. This collaborative approach, which Michael Given describes as 'conviviality' – i.e., living with – is demonstrably a good recipe for sustainable human-environmental relationships (2018). The question is: how can we carry these kinds of ideas and values into contemporary modes of engaging with water, and recreate the reciprocal human-non-human partnerships that they express?

Part of initiating change entails understanding the factors that have pushed many societal trajectories in far less sustainable directions. What happens to water beings over time in different historical and cultural contexts is indicative of some important changes in human-environmental relations. It is only possible to offer the briefest summary here of what is obviously a large and complex narrative, but the patterns that even an outline sketch reveals are fascinating.

It is useful to return to Durkheim at this juncture, to consider how changing cosmological beliefs go hand in hand with changes in socio-political arrangements (1961). Human societies create their gods in their own images, so that religious arrangements are in effect a mirror of society and, as societies enlarge and become more hierarchical and patriarchal, so do their deities. Building on Durkheimian theory, my own hypothesis, which is foundational to a forthcoming text on this topic (Strang in press b), is that we need to add a third element. As well as recognising the interconnections between socio-political arrangements and religious beliefs, we need to look at the relationships between these *and* the extent to which societies are technically instrumental in acting upon their material environments and moulding them to their desires.

Becoming Human

What happens to water serpent deities and beliefs in nature beings when societies develop more instrumental technologies, such as shifting into agricultural modes of engagement? When such changes are low key, the answer is 'not very much'. Horticultural societies, or small-scale agriculturalists, continued to valorise water serpent beings, although they placed a stronger emphasis on their ability to bring annual rain for crops, and water beings' forms changed accordingly. For example, horned serpent beings from the American pueblos typically have maize collars signifying their importance in generating crops, and they spit out lightning, indicating their rain-bringing role. Their celebration in rituals has a heavy focus on dances requesting rain at key planting times (Schaafsma 1980).

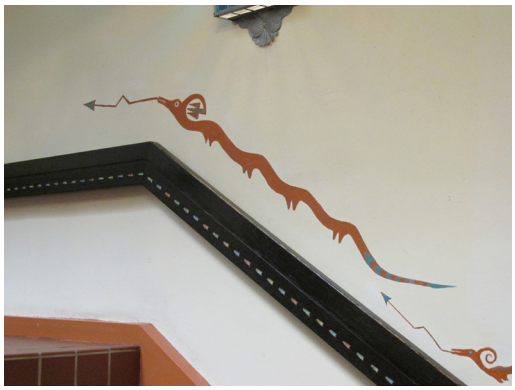

Fig. 6. A mural of Avanyu, a horned serpent being from local pueblos, at the El Fondo Hotel, Santa Fe. Photo: Veronica Strang.

Water serpent worship was equally untroubled by the use of flood irrigation:

historically, societies building low bunds to make use of annual river inundations, such as those in the Indus Valley, Mesopotamia, or growing rice in the Far East, continued to valorise water beings, relying upon them to bring the vital annual flood (Christie 2007; Sutherland 2007).

But more intensive agricultural technologies and urbanisation had a greater impact, not least in introducing higher risks of collapse (Cowgill 2015; Diamond 2011; Scarborough 1998), but also in changing people's perspectives about the non-human world. The use of more sophisticated irrigation schemes, the enclosure of land into farms, and the domestication of plant and animal species initiated a pattern of change that suggested a critical shift in human-non-human relations. As societies acquired more material control over their physical environments, and presumably felt more powerful in this regard, they began to humanise their gods. Thus, in their pantheons of deities, we see the emergence of semi-humanised water beings.

Fig. 6. Hoysala sculpture of nagas, Helbidu. Wikimedia Commons.

It is possible to chart these formal transformations over time. In India for example, early renditions of fertility-oriented nature deities were animal and plant like, combining serpentine/aquatic species and lotus imagery. This is highly visible in the *makara* images that are a recurrent motif right across Asia, and in the transitions from aniconic to figurative representations of goddesses such as Lajjā Gaurī (Bolon 1992). Later Hinduism and Buddhism produced further humanisation, and, while deities continued to shift between human and non-human forms, water serpent beings were more frequently relegated to becoming mere vehicles for fully humanised deities such as the goddess Ganga, who took over as the representation of the sacred river. Thus she appeared riding on a water being, and the great cosmic serpents, such as Ananta, were represented as carrying the Buddha, or Krishna and his consort.

These transitions towards more humanised gods were repeated in different places at different times. For example, in classical Greece and Rome, religious narratives and images began to describe former serpent beings in human form. Zeus – described in earlier records as a 'kindly serpent' – became fully humanised over time, as did many deities (Burkert 1985). In this way, representational objects and images echoed the shifts in religious narratives that took place alongside changing socio-political dynamics (Campbell 1968).

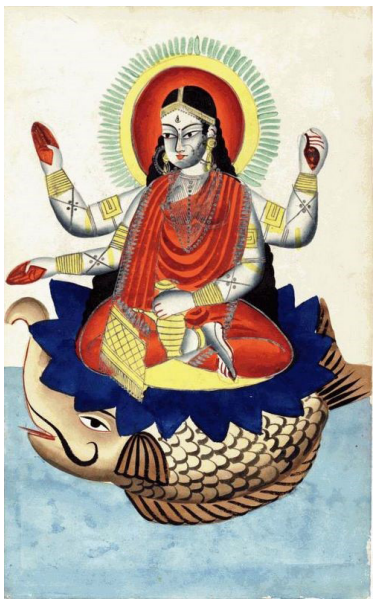

Fig. 7. The Goddess Ganga riding on a makara. Wikimedia Commons.

Critically, as societies became more hierarchical and patriarchal, and enlarged their instrumental activities with more intensive farming, industries, and trade, there was a bifurcation between ideas about culture and nature. Nature was recast as unruly feminised chaos that, in order to be made obediently reproductive, required the authority of male/human culture, represented by the monotheisms and their beliefs in 'God the Father' (Eliade 1982; Harrison 1999; Hocart 1922).

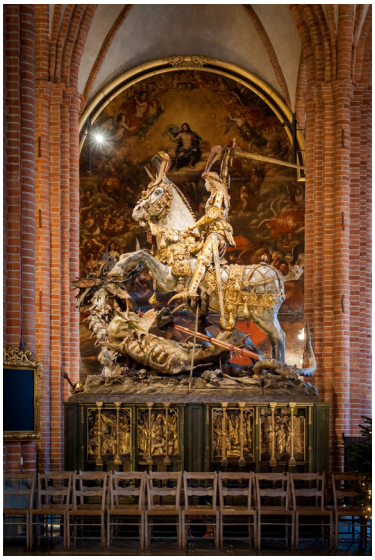

Fig. 8. Statue of St George slaying the dragon, Storkyrkan, Stockholm, by Bernt Notke, 1489. Wikimedia Commons.

Successful transitions to monotheism required the aggressive suppression of preceding Nature religions worshipping the multiple Nature beings and powerful goddesses of earlier times (Plumwood 1993). The wise, creative serpent bringing knowledge and enlightenment to nature-worshipping societies became the 'cunning' but evil serpent in Eden and was increasingly feminised. The water beings that so clearly represented the power of nature were demonised as dragons, and in medieval Europe and beyond there was a florescence of serpent slaying alongside the killing of 'heretics' or 'pagans' resistant to conversion to Christian and other monotheistic beliefs (Batto 1992; Joines 1974; Riches 2000).

Although this is just the tiniest thumbnail sketch of a vast and complex story, what happens to water beings along the way is revealing. It demonstrates a movement, accompanied by political, religious, *and* technological change, from a positioning of humankind in an actively reciprocal and fairly egalitarian partnership with the non-human world and other living kinds, to a more alienated relationship in which the goal was to achieve patriarchal dominion over these, and to direct the world to meet human needs and interests. This developmental trajectory does not lead to a happy ending. Assisted by more and more sophisticated technologies and infrastructures, the shift to exerting extreme dominion encouraged the kinds of short-term exploitative practices that have led to the current ecological crises, and the mass extinction of other species.

At the heart of this problem is a reality that prioritising human interests, and instrumentalising the environment to provide 'ecosystem services' for this purpose, has led to widening inequality between human and non-human rights and interests. Over and over again, along with those of less powerful human groups, the needs and interests of non-human beings have been almost entirely overridden. In what Rodgers and O'Neill describe as 'infrastructural violence' (2012), there has been a massive imposition of technologies – such as big dams and water diversions – that redirect natural ecosystem flows into irrigating crops, producing hydroelectricity, and supporting industry and ever-expanding domestic human populations in urban areas (Larkin 2013).

Rights To and For Water

The existing pattern of extreme exploitation has not happened without opposition. There are vocal counter movements protesting against both social and ecological injustice (Baxter 2005). Environmental, conservation, socialist, feminist, and indigenous networks share a broadly common goal in promoting alternative ways of thinking about these issues, seeking more equal and collaborative relationships between human groups, and between human and non-human worlds.

Much has been learnt from ethnographic research with place-based/indigenous societies. The challenge is how to carry their alternate ways of thinking into wider discursive fora. It is also vital that indigenous communities communities participate directly in global

debates. There is some progress on this front. Over the last 15 years UNESCO has put a lot of attention into understanding culturally diverse perspectives on water (Johnson et al. 2012).

Indigenous communities themselves have formed important international networks aligned around two key issues: efforts to regain land and water rights lost through colonial appropriation; and a critique of industrial societies' exploitative practices. They have used various means to communicate their views including filmmaking; political representation; public protests. The films produced by Alan Ereira with the Kogi in South America, warning 'Younger Brother' (Westerners) about the need to gain greater wisdom in engaging with the non-human world are relevant well-known exemplars (2009 [1990], 2012).

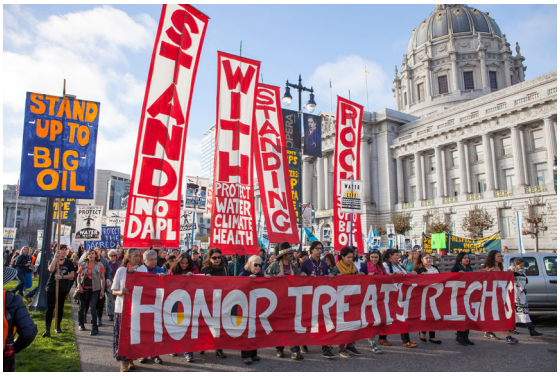

Fig. 9. Activists opposing the oil pipeline at Standing Rock. Wikimedia Commons.

More recently, in relation to Standing Rock, Sioux groups have worked with a range of environmental and social justice groups to organise major protests about the imposition of an oil pipeline affecting their land and water (Arvol Looking Horse 2018).

Internationally, there are increasingly urgent efforts, for example by youth movements, and by Extinction Rebellion, to initiate real changes to current practices.

Transformative Thinking

How might such changes be achieved? I would suggest that this requires three things:

- A paradigmatic transformation in how major societies think about human-non-human relationships, to develop a less anthropocentric perspective that gives real consideration and equality to non-human rights and interests.
- The carrying through of a more reciprocal and egalitarian perspective into governance and regulation at every scale.
- Creativity in developing new practices in engaging with the non-human world, so that the rights and interests of other living kinds are upheld.

There is a rich body of literature emerging from philosophy, anthropology, and other disciplines that seeks to challenge the intellectually flawed dualism of a longstanding culture-nature divide and relocate humankind within a shared social and ecological environment with non-human beings. This is not a new debate: Vladimir Vernadsky's early conceptualisation of the biosphere as a shared world of interconnected living kinds (1920) resurfaced in James Lovelock's Gaia theory (1979, 1987). Anthropology has long had an interest in human-animal relations (Serpell 1996; Haraway 2008), which has led more recently to research on multi-species ethnography (Kirksey and Helmreich 2010). Latour's Actor Network Theory (2005), and the new materialists have highlighted the agentive capacities of the non-human world (Bennett 2009; Tsing 2004). All of these works challenged mainstream thinking about

nature and culture as separate domains and offered illuminating ideas about the dynamic relations between all living kinds, and the material world.

There is also a burgeoning anthropological interest in human engagements with water. This has served to underline not only the fluid connections between living kinds (Krause and Strang 2016), but also the ways in which water reflects social and political relations – in particular how power is distributed (Krause and Ley 2019; Mosse 2003; Wittfogel 1957).

In 2017 the United Nations set out to develop some new 'principles for water', which attempted to articulate the kinds of deeper cultural values that indigenous communities have been trying to promote. The new Principles (below) highlight the diversity of cultural values in relation to water; the need to balance different needs and interests; and stress the importance of a long-term perspective (United Nations 2018a).

UN PRINCIPLES FOR WATER 2017

1) Recognise and Embrace Water's Multiple Values

Identify and take into account the multiple and diverse values of water to different groups and interests in all decisions affecting water.

2) Reconcile Values and Build Trust

Conduct all processes to reconcile values in ways that are equitable, transparent, and inclusive.

3) Protect the Sources

Value, manage, and protect all sources of water... for current and future generations.

Similarly, even though it retained conventional technical and managerial language, the UN's water report for 2018 focused on promoting what it called 'Nature Based Solutions' (United Nations 2018b). This suggests some recognition that working *with* rather than merely *acting on* the non-human world is the best way forward.

While this top-level intergovernmental leadership is vital in driving change, it is inevitably cumbersome, and these are urgent matters that need to be tackled at every level, with grass-roots support, and with leadership by regional and national governments, and by national and international NGOs.

Earth Law

An important contribution to this process has come from the groups committed to promoting non-human rights in the legal arena (Cullinan 2003). For some cultural groups

'The Law' is all pervasive, entering every aspect of their lives. In larger societies there are laws relating to most areas of life, but these tend to sit in the background. However, like ancient religious texts, laws recursively reflect the most dominant or prevailing ideas about social and political order and in this sense they provide a shorthand for more complex cultural beliefs and values. It is therefore reasonable to hope that legal reformation will help to lead wider cultural changes in practice.

There have been increasing efforts to establish substantive legal rights for nature. For example, in response to pressure from its indigenous communities, the Government of Ecuador passed legislation in 2008 securing the 'rights of nature', *Pachamama,* in its Constitution (Berros 2015). This promotes a vision of *el buen vivir* (good living) in which citizenship entails a more egalitarian vision of conviviality with nature. Thus, the preamble to the Constitution states that: "We decided to construct a new form of citizen co-existence, in diversity and harmony with nature, to reach 'el buen vivir, el sumak kawsay'" (Government of Ecuador 2008).

Bolivia followed suit a few years later with a 'Law for Mother Earth'. At an international level, activists such as the Global Alliance for the Rights of Nature have been campaigning for a UN Declaration specifically protecting the Rights of Nature, in the same way that it made a Universal Declaration on Human Rights in 1948 (Global Alliance 2020).

A campaign to establish rights for non-human beings has also been promoted by the Earth Law Centre (ELC). Based in New York and San Francisco, but linked to multiple NGOs internationally, the ELC aspires to be 'a global force of advocates for the rights of nature'. As they say:

> Just as people have fundamental rights, so too should nature. Earth Law is the idea that ecosystems have the right to exist, thrive, and evolve – and that nature should be able to defend its rights in court. […] We envision a future in which humans and nature flourish together. (Earth Law Centre 2018)

Along the same lines are efforts by legal activists such as Polly Higgins to persuade the International Court of Criminal Justice to declare 'ecocide' as an international crime, with concomitant penalties. As she put it:

> Ecocide is a crime against the living natural world – ecosystem loss, damage or destruction is occurring every day. […] Ecocide is a crime against the Earth, not just humans. Further, ecocide can also be climate crime: dangerous industrial activity causes climate ecocide. […] Unlike crimes against humanity, ecocide has severe impact on inhabitants, not just humans. Thus, what is required is the expansion of our collective duty of care to protect the natural living world and all life. (Higgins 2019)

Some of the most interesting developments in this field are efforts to suggest that, just as non-human species should have rights, so too should living systems. There has been considerable pressure by a range of groups, including the Earth Law Centre, to establish rights for rivers as legal persons, with some success in relation to the Ganges and Yamuna Rivers in India, and the Atrato River in Colombia.

This, of course, requires us to think about rivers in broadly the same way that people do when they personify them as water serpent beings: i.e., as responsive, living beings with their own agency and power, who must be engaged with respectfully and reciprocally. This resemblance to the tenets of more sustainable place-based societies is not a coincidence.

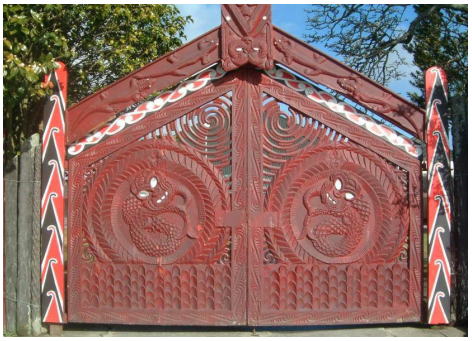

Fig. 10. Taniwha on marae gate, New Zealand. Photo: Marama Muru-Lanning.

One of the most useful examples of indigenous influence comes from New Zealand. Māori, arriving in New Zealand in the 1300s, formed tribes or *iwis,* and traditionally relied on horticulture (along with hunting and gathering). Their stories of cosmogenesis contain many powerful nature deities, including important water serpent beings, called *taniwha* or *marakihau,* which both personify the powers of water, and are seen as the guardians of rivers and seas. Thus, *taniwha* have often been called into play in opposing contemporary development schemes, in particular schemes to redirect water, which are seen as harmful to the environment (Strang 2014).

As in many place-based societies, nature deities are also seen as the ancestors of humankind and remain present in a sentient and responsive land and waterscape. In this cultural context it is therefore wholly logical to describe a river as a 'living ancestor', *Te Awa Tupua* (Muru-Lanning 2016). As the descendants of the river's spiritual being, Māori *iwis* have a responsibility for *kaitiaki* (stewardship), to protect the well-being of the living ancestor for future generations. In 2017, this ancestral connection provided the basis of a successful legal action, which established the personhood of the Whanganui River as a 'living entity', with concomitant legal rights (New Zealand Government 2017).

The legal ruling on the Whanganui defined "the River from the mountains to the sea, its tributaries, and all its physical and metaphysical elements, as an indivisible and living whole". From now on, it stated, the river would have rights similar to those conventionally granted to corporate 'persons' such as trusts, companies and societies: "*Te Awa Tupua* is a legal person and has all the rights, powers, duties, and liabilities of a legal person". Nominated individuals – a representative for the Crown and one from the Whanganui *iwi* – would have a responsibility to 'speak for' the river and promote its rights and interests, not just in terms of its management and use, but also within the legal system. A new role, *To Pou Tupua* was created by the Bill 'to be the human face of *Te Awa Tupua* and act in the name of *Te Awa Tupu*.' (New Zealand Government 2017), and two Māori representatives, female and male, were elected to share this responsibility (Te Pou Tupua 2020).

These efforts to acknowledge non-human legal personhood have usefully focused attention on ethical questions about non-human rights (Charpleix 2017). Some have argued that it is essential in promoting the kind of thinking that will lead to real changes in practice, and it has forged some powerful alliances between indigenous communities and environmental activist organisations. However, it has also led to unease about 'religious' efforts to re-enchant the non-human world and confer upon it forms of consciousness and animism that are at odds with scientific thinking. But the proponents of acknowledging rivers as legal persons contend that it is not enough just to understand them as living entities: they require legal protection, which can only be achieved via the kinds of rights given to persons (Earth Law 2020).

In reality such approaches are not mutually exclusive. Whether based on notions of spiritual being, or on a more scientific acknowledgement that rivers are living ecosystems,

there is an argument for providing them with more substantial legal protection, and indeed to extending such protection to all living kinds (Kopnina 2017; Kopnina and Washington 2020). Rights are always a balance: the provision of legal rights to non-human beings would challenge and potentially counterbalance long assumed 'rights' to ignore their needs and interests, to exploit them, and indeed to destroy environments and drive species into extinction. Thus, it is not so much a matter of upholding non-human rights, as of developing an ethical stance in which ignoring these is not an option. By articulating the ethical questions, the legal debate has some capacity to transform ideas and practices, and to articulate and enact more sustainable environmental values.

Putting Rights into Practice

How might this make a difference in practice? Here too, the New Zealand example is useful. The model giving legal protection to the Whanganui River, and the appointment of a representative in the role of *To Pou Tupua* ensures that the local *iwi* will have a direct role in decision-making affecting the river. Because this role is specifically to 'speak for the river' it also has the potential to give a voice to the non-human beings who live in or alongside the river, and to speak on behalf of their needs and interests.

The basic tenets of this model could be carried into diverse cultural contexts. There are already, around the world, thousands of catchment management groups, friends of the river, and suchlike, whose major goal is to protect waterways. There are many knowledgeable people – scientists and local experts – trying to collaborate in various kinds of Integrated Water Resource Management (IWRM) (Orlove and Caton 2010). Giving such experts a formal and more equal role in decision-making bodies, to 'speak for' the river and its non-human inhabitants, would be transformative.

With this in mind, I have been developing an idea about 're-imagined communities' (Strang 2021). This draws on Benedict Anderson's well-known work *Imagined Communities*, in which he considered how we envision the various human communities to which we belong: our kin relations; local communities; our professional communities; those that reflect our particular interests. What a notion of 're-imagined communities' suggests is that we should extend this idea to the non-human communities amongst whom we live, in this way consciously rejecting self-absorbed anthropocentricity and relocating ourselves within – and as part of – the living world with which we interact on a daily basis, and whose needs and interests our activities affect. This includes a foundational need to recognise non-human agency and the active participation of the non-human domain in the co-creation of a shared lifeworld.

If we were to re-imagine communities in this way, a logical step would be to ask how to provide non-human beings with a voice and participation in decisions. As I have noted elsewhere, in accord with other writing on ecological justice (Gray and Curry 2016), this constitutes a form of pan-species democracy (Strang in press a). For example, decisions about introducing new water infrastructure, or about general catchment management processes, could be made in a collective and egalitarian forum. As well as giving space to the concerns of different human communities (local farmers, residents etc.), water quality experts might speak for the well-being of the water; local fishers could provide input on behalf of fish populations; soil scientists could articulate the microbial well-being of riparian soils; botanists could consider the well-being of local plant life; biologists, or wildlife specialists could speak for other species. Like the role of the *To Pou Tupua* in New Zealand, their job

would be to articulate and promote the needs and interests of the non-human living kinds similarly dependent upon the flows of water through the catchment and make it much harder to maintain a habit of ignoring and overriding these.

Such a paradigmatic shift in ideas and practices would surely produce better, more sustainable decisions. In offering a more balanced approach to human and non-human interests, it could actively encourage the other significant changes – in patterns of consumption, lifestyle etc. – that are needed to ensure a brighter future for all living kinds. Thus, drawing on the enlightenment provided by water beings and the ideas and values they have promoted over millennia, it may be possible to shift the current trajectory of most societies, which has led to the environmental crisis, and move towards, if not nature worship, at least into more convivial and sustainable engagements with the non-human world, and with water.

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